



# KEC



## GENERAL CATALOGUE





## **TO OUR BUSINESS FRIENDS AND CUSTOMERS**

Korea Electric Co.,Ltd is a leading manufacturer and exporter of lightning protection system, all kinds of grounding materials and fittings & accessories for local and international markets.

Our mission is to bring product innovation and exceptional customer service to the marketplace. to grow and evolve as a professional leader in the industry of lightning protection system and grounding materials and etc.

Korea Electric Co.,Ltd, we take pride in developing good working relationships with our clients and strive to offer the best lightning protection & grounding materials services by implementing the highest standards possible. using our extensive experience we provide quality results and complete job satisfaction for everyone involved.

Since establishment in 1995, our wealth of knowledge in structural lightning protection, grounding materials and fitting, accessories gives our customers the ability to offer leading edge product development and unparalleled technical support. we are intrinsically sensitive to the needs of its customers and to the requirements.

We assure that Korea Electric Co.,Ltd is in a good position to your requirements and also hope that we can receive the feedback from you on evaluating our products,

Yours Faithfully

A stylized, handwritten signature in black ink, consisting of a large, sweeping 'K' followed by a horizontal line.

## GENERAL CATALOGUE



## CONTENTS

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|                                                    |     |
|----------------------------------------------------|-----|
| A. Grounding Materials                             | 019 |
| B. Thermit Welding Materials                       | 047 |
| C. Lightning Protection Equipments                 | 069 |
| D. Ground & Lightning System (Nuclear Power Plant) | 091 |
| E. Surge Protective Device                         | 111 |
| F. Cable Accessories                               | 117 |
| G. Flexible Conduit & Fittings                     | 147 |
| H. Rigid Steel Conduit & Fittings                  | 163 |
| I. PVC Conduit & Fittings                          | 179 |
| J. Boxes for Rigid Metal Conduit                   | 191 |
| K. Cable Gland & Electric Accessories              | 227 |

# Grounding Simulation Program - CDEGS

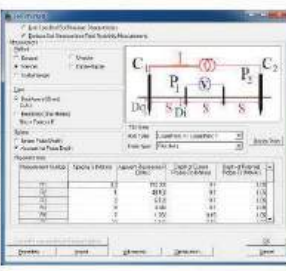
## Introducing the CDEGS Software Package: Integrated Software for Power System Grounding/Earthing, Electromagnetic Fields and Electromagnetic Interference

The CDEGS software package (Current Distribution, Electromagnetic Fields, Grounding and Soil Structure Analysis) is a powerful set of integrated engineering software tools designed to accurately analyze problems involving grounding/earthing, electromagnetic fields, electromagnetic interference including AC/DC interference mitigation studies and various aspects of cathodic protection and anode bed analysis with a global perspective, starting literally from the ground up. CDEGS computes conductor currents and electromagnetic fields generated by an arbitrary network of energized conductors anywhere above or below ground for normal, fault, lightning and transient conditions. CDEGS models simple and multi-component conductors, including bare, coated pipes and pipe-enclosed cable systems buried in complex soil structures. CDEGS and its subpackages, coupled with toll-free support from the world's leading R&D design team in these specialties, provide you with an array of cost-effective solutions for problems ranging from simple grounding grid designs to the behavior of complex networks of aboveground and buried conductors energized by lightning or other transients. By providing you with a powerful drawing tool and allowing you to exchange graphical data with AutoCAD and other software supporting DXF, CDEGS makes data entry enjoyable. Flexible data reporting and graphing utilities allow you to collect and illustrate any aspect of the results that are important for your work. Whether you are confronted with a complex grounding design, EMF studies, electromagnetic compatibility and interference problems or a lightning/surge study, you can rely on CDEGS accurate, powerful and integrated software components for a realistic, optimized solution. Extensive scientific validation of the software using field tests and comparisons with analytical or published research results have been conducted for over twenty years. The validation conducted by SES as well as other independent researchers is documented in hundreds of technical papers published in the most reputed international journals.

### 5.2 SOIL RESISTIVITY DATA ENTRY

Click the **Soil** button located in the **Project Toolbar** to define the soil model. The **Soil Structure** screen will appear, without data and you are now ready to enter it.

The soil model can be defined by specifying measured resistivity data (default setting shown above), in which case the program will compute an appropriate soil structure, or by specifying the soil structure explicitly. When the soil structure is specified explicitly by selecting the **Use Specified Soil Structure Characteristics** option at the very top of the screen, the following data entry screen is shown: use it to enter details of the soil model that is desired.

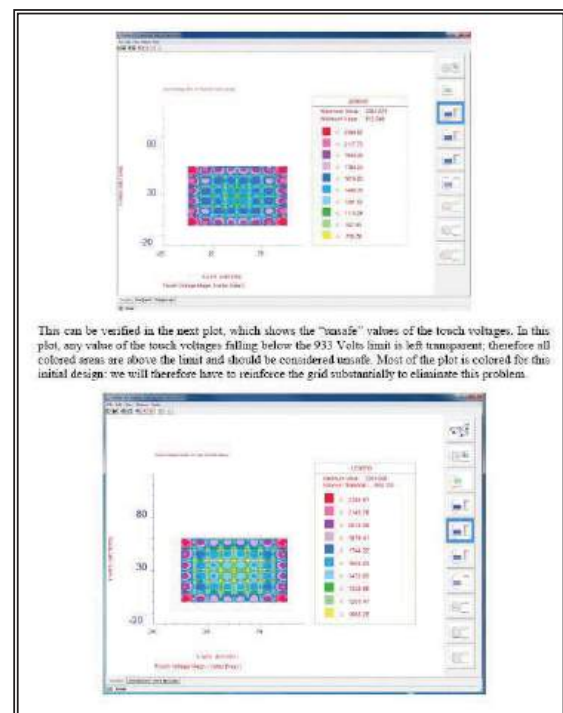


The earth structures that can be analyzed include:

- Uniform soil model (default)
- Horizontally layered soil (any number of layers)
- Vertically layered soil (two or three layers)
- Hemispherical soil model: three regions delimited by two concentric hemispherical boundaries
- Cylindrical soil model: two regions delimited by a vertical or horizontal cylindrical boundary
- Arbitrary heterogeneity soil model: any number of regions of any shape formed by 6 surfaces and 8 vertices

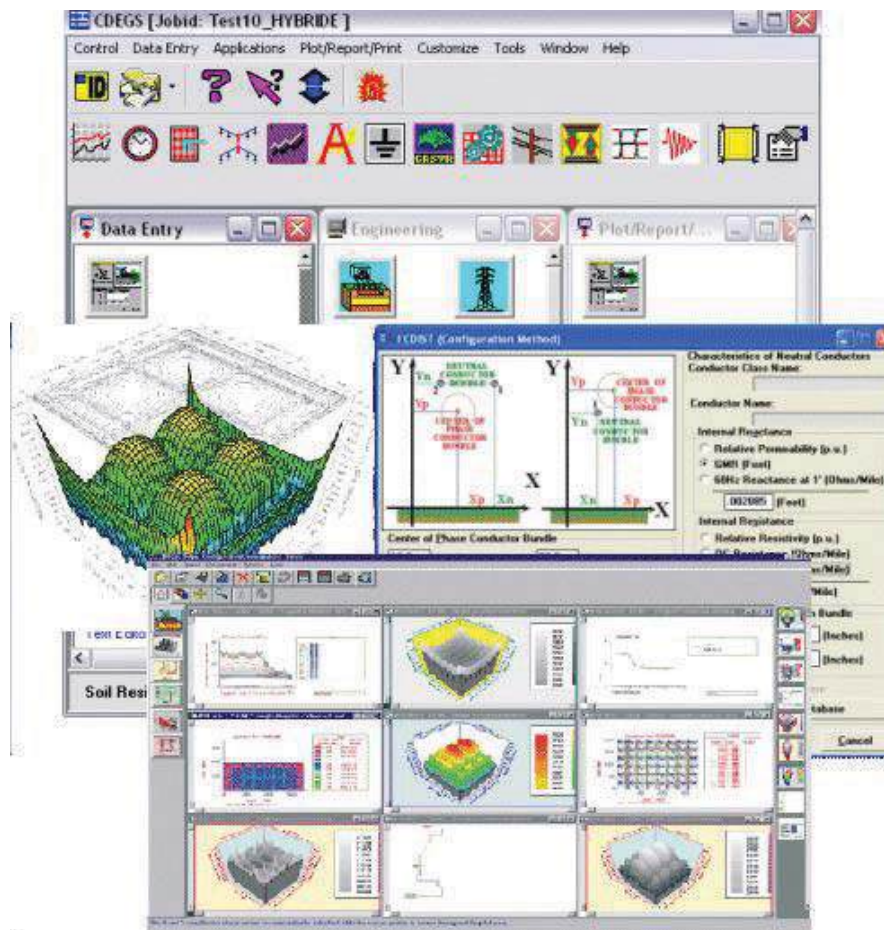
In this tutorial, the soil model will be deduced based on the soil resistivity measurements presented in Section 2.4.

In the following, it will be assumed that the reader is entering the data as indicated in the instructions. Note that it is advisable to save your work regularly by selecting **Project | Save**



## The CDEGS software package

SES started the development of the CDEGS software package in 1972, with the creation of the MALT engineering module. Since that time, CDEGS has undergone steady growth and refinement. It is composed of eight engineering modules RESAP, MALT, MALZ, TRALIN, SPLITS, HIFREQ, FCDIST, and FFTSES. CDEGS also includes input and output processors and utilities (e.g., import or export tools to CAD software, graphic servers, text editors, etc.). The relationship between the input and output processors and the engineering modules is illustrated in the figure shown below.



*Briefly stated, CDEGS capabilities are:*

- Soil resistivity analysis and soil structure interpretation.
- Grounding analysis: arbitrary soil structures; any frequency & transients.
- Line constants for overhead and buried conductors or complex pipe-enclosed cable arrangements.
- Load, fault & transient current distribution (in neutrals, shields, etc.).
- Cathodic protection analysis of complex buried networks.
- Inductive, conductive and capacitive interference in shared corridors.
- Frequency and time domain analysis of electromagnetic fields generated by arbitrarily energized conductor networks (substations, transmission & distribution lines, industrial plants, etc.).

## 접지전문분석 프로그램(CDEGS)활용 접지검토 및 제안

현장 접지여건 파악 검토

현장내 대지비저항측정

- 대지비저항측정  
(4-점 웨너(wenner) 측정법)
- 접지저항측정  
(3-점 전위측정법)
- 구조체연속성측정  
(4-단자 휘트스톤 브리지(Wheatstone Bridge)측정)

■ 측정장비



C,A 6470N

토양구조분석



접지전극 설계



CDEGS S/W 시뮬레이션



요구접지저항 데이터



접지전위분포 2D,3D 데이터



접지설계구조 2D,3D 데이터

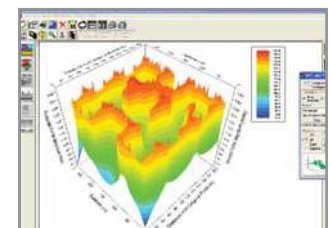
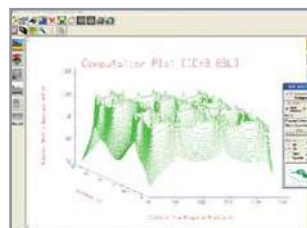
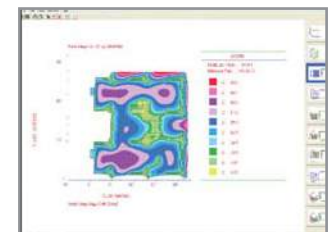
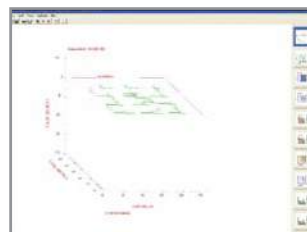
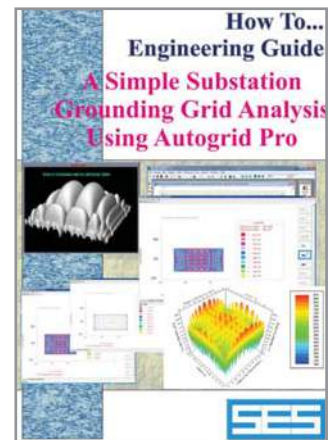


접지시스템 설계검토완성

**CDEGS**



현장내 대지저항측정



# KS C IEC 62305

## (2012. 12. 27. 개정)

### 제3장 IEC 62305-3 : 구조물의 물리적 손상 및 인명위험

낙뢰에 대한 피해는 건축물이나 인체에 발생하는 물리적 손상과 전기전자기기들에 발생하는 기기손상이나 오동작으로 크게 구분되는데 IEC 62305-3은 낙뢰에 의해 발생하는 물리적 손상을 방지하기 위한 대책을 제시하고 있다. KS C IEC 61024의 적용범위는 60m 이하의 구조물을 대상으로 한정하고 있지만 IEC 62305는 건물높이에 관계없이 모든 건물에 적용한다.

#### 4. 피뢰시스템 LPS

##### 4.1 피뢰시스템의 레벨

피뢰레벨은 최대, 최소 뇌격전류 파라미터에 의해 정해져 있다.

| 피뢰레벨 | 피뢰시스템의 등급 |
|------|-----------|
| I    | I         |
| II   | II        |
| III  | III       |
| IV   | IV        |

a) 피뢰시스템 레벨과 관계있는 데이터

뇌격파라미터, 회전구체 반경, 메시(mesh)의 크기 및 보호각, 인하도선 사이 및 환상도체 사이의 전형적인 거리, 위험한 불꽃방전에 대비한 이격거리, 접지극의 최소길이

b) 피뢰시스템의 레벨과 관계없는 데이터

피뢰등전위본딩, 수뢰부시스템으로 사용되는 금속판과 금속관의 최소두께, 피뢰시스템의 재료 및 사용조건, 수뢰부시스템, 인하도선, 접지극의 재료, 형상 및 최소치수

##### 4.3 철근 콘크리트 구조물에서 강제 철골조의 전기적 연속성

LPS 설계시 철근콘크리트 구조건축물에서 철근 구조체의 전기적 연속성을 판단하는 기준으로 철근구조 전체의 전기적 저항을 적합한 방법으로 측정하였을 때 저항값이  $0.2\Omega$ 이하이면 그 철근구조체는 전기적 연속성을 갖는 것으로 규정.

## 5. 외부피뢰시스템

### 5.2 수뢰부시스템

#### 5.2.1 일반사항

외부 뇌보호 설비에서 수뢰부를 이루는 요소로서 돌침, 수평도체, 메시도체로 정하고 있고 이들 요소 이외의 모든 수뢰부 시스템도 보호범위 산정방식에 의해 산출된 위치에 설치되어야 함. 방사능 이용 피뢰침 (Radioactive air terminals) 사용 금지하고 있음.

〈해설〉 방사능 피뢰침이란 피뢰침 내부에 방사능 물질이 삽입되어 있어 낙뢰시 이로 인하여 대기오염을 야기시킬수 있는 피뢰침을 말한다.

#### 5.2.2 배치

구조물의 모퉁이, 뾰족한 점, 모서리(특히 용마루)에 다음의 하나 이상의 방법으로 수뢰부시스템을 배치해야 한다.

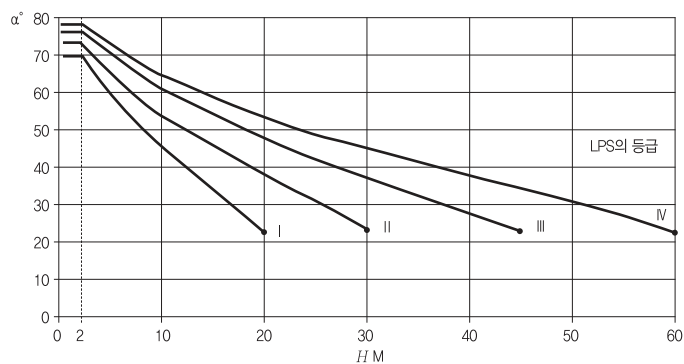
- 보호각법
- 회전구체법
- 메시법

회전구체법은 모든 경우에 적용할 수 있다.

보호각법은 간단한 형상의 건물에 적용 할 수 있으며 수뢰부 높이는 표2에 제시된 값에 따른다.

표 2 - 피뢰시스템의 등급별 회전구체 반경, 메시치수와 보호각의 최대값

| 피뢰시스템의 등급 | 보호법                  |              |                    |
|-----------|----------------------|--------------|--------------------|
|           | 회전구체 반경 $\gamma$ (m) | 메시치수 $W$ (m) | 보호각 $\alpha^\circ$ |
| I         | 20                   | 5×5          | 아래 그림 참조           |
| II        | 30                   | 10×10        |                    |
| III       | 45                   | 15×15        |                    |
| IV        | 60                   | 20×20        |                    |



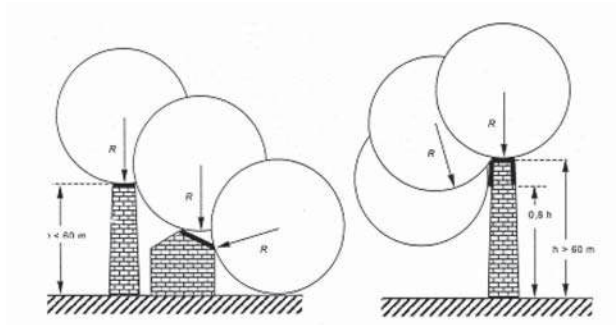
비고 1 • 표를 넘는 범위에는 적용할 수 없으며, 단지 회전구체법과 메시법만 적용할 수 있다.

비고 2 H는 보호대상 지역 기준평면으로부터의 높이이다.

비고 3 높이 H가 2m 이하인 경우 보호각은 불변이다.

### 5.2.3 높은 구조물의 측벽에 대한 수뢰부 시스템

높이 60m이상 구조물의 특히 뾰족한 점, 모퉁이, 모서리에 측뢰의 입사가 가능하다. 수뢰부시스템의 시설은 건물 상층부(높이 최상부 20% 이상), 또는 120m를 넘는 모든 부분에 설치하여야 한다.



〈부속서 A 그림 A.6〉 회전구체법에 따른 수뢰부 시스템의 설계

### 5.2.4 시설

- a) 분리되지 않은 피뢰시스템의 수뢰도체 : 불연성 지붕마감재인 경우에는 지붕표면에 직접 설치 가능
  - 가연성 지붕마감재의 경우 이격거리 고려 : 갈대이영 초가지붕은 0.15m 이상, 다른 가연성 재료의 경우는 0.1m 이상 이격해야 함

### 5.2.5 자연적 구성부재

- 납땜, 용접, 주름이음, 봉합이음, 나사 조임 등으로 각 부분 사이의 전기적 연속성이 견고할 것
- 금속판의 천공을 방지하거나 판의 하부에 있는 높은 가연성 물질의 발화를 고려할 필요가 없는 경우 금속 판 두께는 표3의  $t'$  값 이상일 것

표3- 수뢰부시스템용 금속판 또는 금속배관의 최소 두께

| 피뢰시스템의 레벨 | 재료                   | 두께 <sup>1)</sup> $t$ (mm) | 두께 <sup>2)</sup> $t'$ (mm) |
|-----------|----------------------|---------------------------|----------------------------|
| I ~ IV    | 납                    | —                         | 2.0                        |
|           | 강철<br>(스테인리스, 아연도금강) | 4                         | 0.5                        |
|           | 티타늄                  | 4                         | 0.5                        |
|           | 동                    | 5                         | 0.5                        |
|           | 알루미늄                 | 7                         | 0.65                       |
|           | 아연                   | —                         | 0.7                        |

1)  $t$ 는 관통, 고온점 또는 발화를 방지한다.

2)  $t'$ 는 단지 관통, 고온점 또는 발화의 방지가 중요하지 않은 경우의 금속판에 한정된다.

- 천공에 대한 예방조치나 고온점의 문제를 고려할 필요가 있는 경우 금속판의 두께는 표 3의 t값 이상일 것
- 절연재로 피복하지 말 것
- 보호대상 구조물에서 제외할 수 있는 비금속성 지붕마감재 하부의 지붕을 구성하는 금속제 부품(트러스, 상호 접속된 철근 등)
- 단면적이 표준수뢰도체의 규격 이상인 장식재, 난간, 배관, 파라페트의 뚜껑 등 금속 부분
- 지붕에 있는 표 6에 주어진 두께와 단면적의 재료로 제작된 금속제 배관과 용기
- 뇌격점의 내표면 온도상승의 위험이 원인이 되지 않고, 표 3의 t값 이상의 두께의 재료로 제작된 높은 가연성 또는 폭발성 혼합물을 수송하는 금속배관과 용기
- 보호페인트, 약 1mm 아스팔트 또는 0.5mm PVC의 피막은 절연재료로 간주하지 않는다.

표 6 - 수뢰도체, 피뢰침과 인하도선의 재료, 형상과 최소단면적

| 재료                     | 보호법                         | 최소단면적 mm <sup>2</sup> |
|------------------------|-----------------------------|-----------------------|
| 구리                     | 테이프형 단선                     | 50 <sup>8)</sup>      |
|                        | 원형 단선 <sup>7)</sup>         | 50 <sup>8)</sup>      |
|                        | 연선                          | 50 <sup>8)</sup>      |
|                        | 원형 단선 <sup>3), 4)</sup>     | 200 <sup>8)</sup>     |
| 주석도금한 구리 <sup>1)</sup> | 테이프형 단선                     | 50 <sup>8)</sup>      |
|                        | 원형 단선 <sup>7)</sup>         | 50 <sup>8)</sup>      |
|                        | 연선                          | 50 <sup>8)</sup>      |
| 알루미늄                   | 테이프형 단선                     | 70 <sup>8)</sup>      |
|                        | 원형 단선                       | 50 <sup>8)</sup>      |
|                        | 연선                          | 50 <sup>8)</sup>      |
| 알루미늄합금                 | 테이프형 단선                     | 50 <sup>8)</sup>      |
|                        | 원형 단선                       | 50                    |
|                        | 연선                          | 50 <sup>8)</sup>      |
|                        | 원형 단선 <sup>3)</sup>         | 200 <sup>8)</sup>     |
| 용융아연도금강 <sup>2)</sup>  | 테이프형 단선                     | 50 <sup>8)</sup>      |
|                        | 원형 단선 <sup>9)</sup>         | 50                    |
|                        | 연선                          | 50 <sup>8)</sup>      |
|                        | 원형 단선 <sup>3), 4), 9)</sup> | 200 <sup>8)</sup>     |
| 스테인리스강 <sup>5)</sup>   | 테이프형 단선 <sup>6)</sup>       | 50 <sup>8)</sup>      |
|                        | 원형 단선 <sup>6)</sup>         | 50                    |
|                        | 연선                          | 70 <sup>8)</sup>      |
|                        | 원형 단선 <sup>3), 4)</sup>     | 200 <sup>8)</sup>     |

- 1) 용융 또는 전기도금피복의 최소두께는 1μm이상이다.
- 2) 피복은 최소 50μm의 두께로 매끄럽고, 연속적이며 녹슬지 않도록 한다.
- 3) 단지 피뢰침에 적용할 수 있다. 풍압하중과 같은 기계적 응력이 크게 작용하지 않는 경우에는 직경 10mm, 최대 길이가 1m인 피뢰침을 부가적인 고정을 하여 사용할 수 있다.
- 4) 단지 대지에 인입하는 봉으로 사용할 수 있다.
- 5) 크롬≥16 %, 니켈≥8 %, 탄소≤0.07 %.
- 6) 가연성 물질과 직접 접촉하는 콘크리트에 매입된 스테인리스강의 최소크기는 원형 단선은 78mm<sup>2</sup>(직경 10mm), 테이프형 단선은 75mm<sup>2</sup>(최소두께 3mm)이상으로 한다.
- 7) 기계적 강도가 요구되지 않는 경우 단면적 50 mm<sup>2</sup>(직경 8mm)를 28mm<sup>2</sup>(직경 6mm)로 줄여도 된다. 이 경우 침식 사이의 간격도 줄인다.
- 8) 열적/기계적 고려가 중요하다면 이들 치수를 테이프형 단선은 60 mm<sup>2</sup>로 원형 단선은 78mm<sup>2</sup>로 증가시킬 수 있다.
- 9) 10,000 kJ/Ω의 비에너지에 대하여 용융되지 않는 최소단면적은 구리 16mm<sup>2</sup>, 알루미늄 25mm<sup>2</sup>, 강선 50 mm<sup>2</sup>, 스테인리스강 50mm<sup>2</sup>이며, 상세한 사항은 부속서 E에 기술되어 있다.
- 10) 두께, 폭, 직경은 ±10 %로 정의된다.

## 5.3 인하도선 시스템

5.3.1 10~20m높이마다 측면에서 인하도선 서로 접속

5.3.2 분리된 피뢰시스템 배치 : 1조 이상

5.3.3 분리되지 않은 피뢰 시스템의 배치 : 2조 이상

〈해설〉 KS C IEC 61042에서 규정하고 있는 설치간격보다 좁게 대폭 강화하여 규정하고 있고 수평환도체들의 설치간격도 기존규격에서는 보호등급에 관계없이 20m로 규정하고 있지만 IEC 62305는 보호등급에 따라 차등 적용하고 있다.

〈표 4〉 피뢰시스템의 레벨별 대표적인 인하도선 사이의 간격과 환상도체사이의 간격

| 피뢰레벨 | 평균간격(m) |
|------|---------|
| I    | 10      |
| II   | 10      |
| III  | 15      |
| IV   | 20      |

5.3.4 시설 : 인하도선과 가연성 재료사이의 거리를 충분히 확보할 수 없는 경우 인하도선 단면적은 100mm<sup>2</sup>.

### 5.3.5 자연적 구성 부재

- 각부분간의 전기적 연속성은 5.5.2절의 요구사항에 적합한 내구성이 있을 것
- 표준인하도선으로 표6에 규정된 값 이상의 크기일 것
- 건축물의 전기적 연속성을 가지는 철근 콘크리트 구조체의 금속
- 건축물의 상호 접속된 강재 구조체
- 정면 부재, 측면 레일 및 금속제 정면 벽의 보조 구조체 : 크기가 인하도선에 대한 요구사항에 부합, 두께가 0.5 mm이상인 금속판 또는 금속관, 수직방향의 전기적 연속성 요구사항에 적합
- 철골 구조의 금속 구조체나 건축물 등의 상호 접속한 철근을 인하도선으로 사용할때는 수평환상도체 불필요(KS C IEC 61024와 동일)

### 5.3.6 시험용 접속점

자연적 구성부재의 인하도선을 제외하고 각 인하도선과 접지시스템과의 접속점에서 시험용 접속점 설치, 측정을 위해 공구 등으로 개방할 수 있어야 하나 평상시에는 폐회로(KS C IEC 61024와 동일)

## 5.4 접지시스템

### 5.4.1 일반사항

- 위험한 과전압을 최소화하고 뇌격전류를 대지로 방류하는 데에 있어 접지시스템의 형상과 크기가 중요한 요소이다. 일반적으로 낮은 접지저항(저주파수에서 10Ω 이하의 접지저항)이 바람직하다.
- 피뢰의 관점에서 구조체를 통합 단일의 접지시스템이 바람직하며 이는 접지목적(즉, 피뢰, 전원계통과 통신시스템)에도 바람직하다. 접지 시스템은 6.2절(피뢰등전위본딩)의 요건에 적합하도록 등전위본딩을 해야 한다.

#### 5.4.2.1 A형 접지극

- 접지극 수 최소 2개 이상.
- 접지극 최소길이 :  $l_1$ (수평접지극),  $0.5l_1$ (수직접지극)
- 접지시스템의 접지저항이 10Ω 이하이면 그림 2에 기술된 최소길이를 하지 않아도 된다.

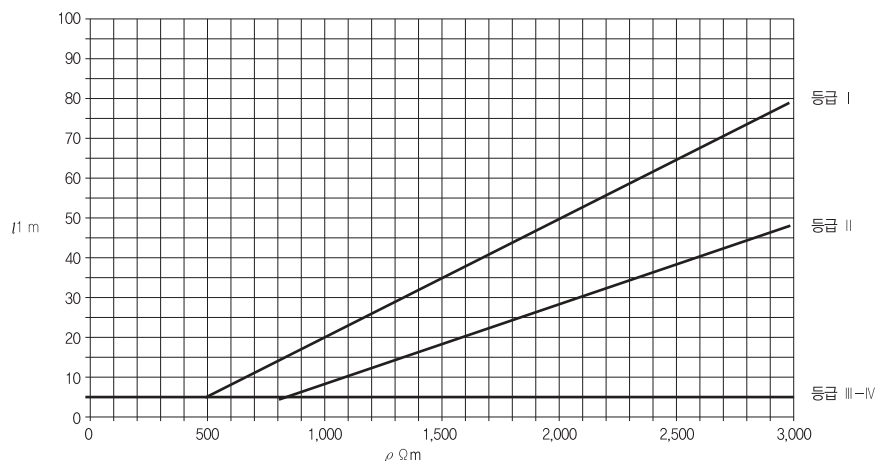


그림 2 - LPS레벨 각 접지극의 최소길이  $l_1$  (Ⅲ,Ⅳ 대지저항률과 무관)

#### 5.4.2.2 B형 접지극

- 보호 대상구조물의 외측에 전체길이의 최소 80% 이상이 지중에 설치된 환상도체 또는 기초접지극으로 이루어지며, 접지극은 메시형이다.
- 환상접지극의 경우  
환상 접지극(또는 기초접지극)에 의해서 둘러싸인 면적 평균반지름  $r_e$ 은  $l_1$  이상이어야 한다. ( $r_e \geq l_1$ )  
 $l_1$ 이  $r_e$  값보다 클 때는 다음의 식으로 주어진 길이  $l_r$ 인 수평접지극 또는 길이  $l_v$ 인 수직접지극을 추가로 시설해야 한다.

$$l_r = l_1 - r_e, l_v = \frac{l_1 - r_e}{2}$$

- 접지극의 수는 최소 2개 이상, 인하도선의 수보다 많아야 한다. 추가 접지극은 가능한 한 같은 간격으로 인하도선이 접속되는 점에서 환상접지극에 접속.

### 5.4.3 접지극의 설치

- B형 접지극은 벽과 1m 이상, 최소깊이 0.5m에 매설
- A형 접지극은 상단이 최소 0.5m 이상 깊이에 매설
- 모든 수직 접지극에 대하여 계산한 길이  $l_1$ 에 0.5m 더함 (KS C IEC 61024에는 없는 내용)

〈해설〉 B형 접지극은 건물 외부로 인하도선이 노출 설치되는 경우 적용된다.

### 5.4.4 자연적 구성부재의 접지극

상호 접속한 콘크리트의 철근이나 기타 적당한 금속재 지하 구조물이 요구사항에 적합한 특성을 가진 경우 사용, 콘크리트 철근을 접지극으로 사용하는 경우에 콘크리트 파괴 방지를 위해 상호 접속에 특별히 주의.

## 5.5 부품

피뢰시스템용 부품은 뇌격 전류 전자기 영향과 예상되는 돌발적 응력에 손상되지 않고 견디어야 하며, 재료 또는 기계적, 전기적, 화학적(부식) 특성이 그와 동등한 다른 재료로 제작

### 5.5.1 고정

전기 역학적인 힘 또는 돌발적 기계적 힘(예, 진동, 눈사태, 열팽창)등에 의해서 도체가 단선되거나 느슨함이 생기지 않도록 수뢰부와 인하도선을 견고하게 고정시켜야 한다.

### 5.5.2 접속

도체를 따라서 접속부 수는 최소로 하며, 접속은 확실한 방법으로 함(땜질, 용접, 압착, 봉합, 나사조임, 볼트 조임)

표 5 - 피뢰시스템의 재료와 사용조건

| 재료     | 사용        |               |               | 부식                             |              |              |
|--------|-----------|---------------|---------------|--------------------------------|--------------|--------------|
|        | 대기중       | 지중            | 콘크리트중         | 내성                             | 진행성          | 전해대상         |
| 구리     | 단선<br>연선  | 피복된 단선,<br>연선 | 피복된 단선,<br>연선 | 대부분의<br>환경에 양호                 | 황화합물<br>유기물  | -            |
| 용융아연도강 | 단선<br>연선  | 단선            | 단선<br>연선      | 대기중,<br>콘크리트중,<br>일반 토양에<br>허용 | 높은 염화물<br>용액 | 구리           |
| 스테인리스강 | 단선<br>연선  | 단선<br>연선      | 단선<br>연선      | 대부분의<br>환경에 양호                 | 높은 염화물<br>용액 | -            |
| 알루미늄   | 단선<br>연선  | 부적합           | 부적합           | 낮은 농도의 유허과<br>염화물의 대기중에<br>양호  | 알칼리용액        | 구리           |
| 납      | 피복된<br>단선 | 피복된 단선        | 부적합           | 높은 농도의 황산염<br>의 대기중에 양호        | 산성 토양        | 구리<br>스테인리스강 |

## 5.6 재료 및 치수

### 5.6.1 재료

보호대상 구조물이든 피뢰시스템이든 부식의 가능성을 고려하여 재료와 크기를 선정해야 한다.

### 5.6.2 치수

〈해설〉 IEC 62305에서는 KS C IEC 61024 규격에 비해 뇌보호 시스템에 사용되는 재료와 최소 굵기가 더 굵게 선정

〈뇌보호 시스템의 재료별 최소 치수〉

| 보호등급   | 재료   | IEC 62305             |                        |         |
|--------|------|-----------------------|------------------------|---------|
|        |      | 수뢰부(mm <sup>2</sup> ) | 인하도선(mm <sup>2</sup> ) | 접지극     |
| I ~ IV | 구리   | 50                    | 50                     | 50      |
|        | 알루미늄 | 50                    | 50                     | —       |
|        | 강철   | 50                    | 50                     | 직경 10mm |

## 낙뢰피해 위험도평가(피뢰보호등급 선정에 활용) KS C IEC 62305부속 소프트웨어-지식경제부에서 무료배포



The screenshot displays the 'KS C IEC 62305' software interface, which is used for lightning risk assessment. The interface is divided into several sections:

- Input Parameters (Left Panel):** This section contains various input fields for defining the structure and protection level. Key inputs include:
  - 구조물의 치수 (Structure Dimensions): Height (m), width (m), and length (m).
  - 구조물의 속성 (Structure Properties): Material (e.g., Steel), surface area, and volume.
  - 위험도 평가 (Risk Assessment): Selection of protection level (e.g., Level 1) and exposure factor.
- Calculation Results (Right Panel):** This section displays the results of the risk assessment, including:
  - 수뢰 부피 (Strike Volume): Calculated based on the input parameters.
  - 인하도선 (Downward Line): Calculated based on the input parameters.
  - 접지극 (Grounding Electrode): Calculated based on the input parameters.

The software also includes a '계산 결과' (Calculation Results) window that provides a detailed summary of the results, including the calculated risk level and the recommended protection level.

# 건축물의 설비기준 등에 관한 규칙

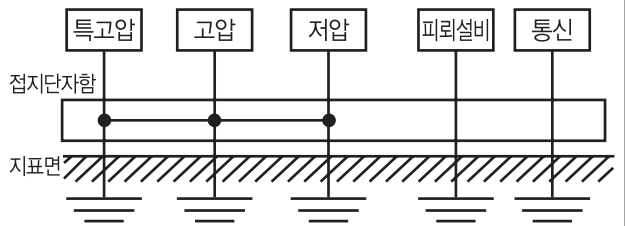
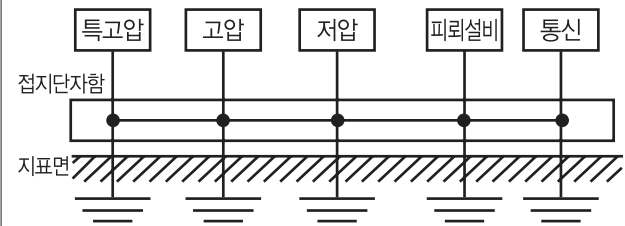
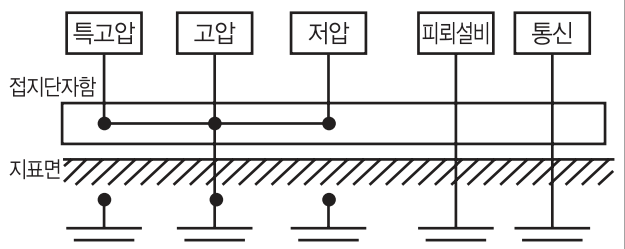
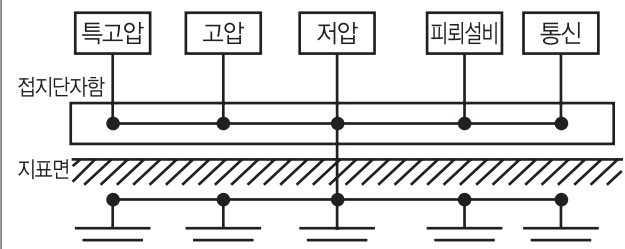
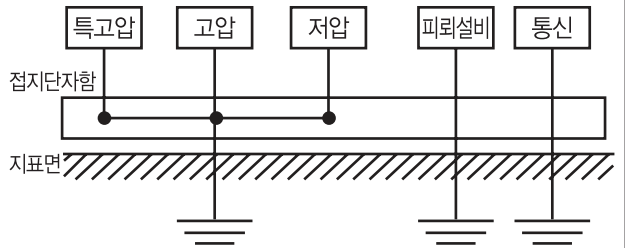
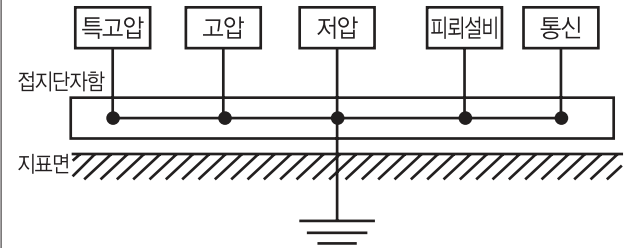
## [시행 2012. 4. 30] [국토해양부령 제458호, 2012. 4. 30, 일부개정]

제20조(피뢰설비) 영 제87조제2항에 따라 낙뢰의 우려가 있는 건축물, 높이 20미터 이상의 건축물 또는 영 제118조제1항에 따른 공작물로서 높이 20미터 이상의 공작물(건축물에 영 제118조제1항에 따른 공작물을 설치하여 그 전체 높이가 20미터 이상인 것을 포함한다)에는 다음 각 호의 기준에 적합하게 피뢰설비를 설치하여야 한다. <개정 2010.11.5, 2012.4.30>

1. 피뢰설비는 한국산업표준이 정하는 피뢰레벨 등급에 적합한 피뢰설비일 것. 다만, 위험물저장 및 처리시설에 설치하는 피뢰설비는 한국산업표준이 정하는 피뢰시스템레벨 II 이상이어야 한다.
2. 돌침은 건축물의 맨 윗부분으로부터 25센티미터 이상 돌출시켜 설치하되, 「건축물의 구조기준 등에 관한 규칙」 제9조에 따른 설계하중에 견딜 수 있는 구조일 것
3. 피뢰설비의 재료는 최소 단면적이 피복이 없는 동선을 기준으로 수뢰부, 인하도선 및 접지극은 50제곱밀리미터 이상이거나 이와 동등 이상의 성능을 갖출 것
4. 피뢰설비의 인하도선을 대신하여 철골조의 철골구조물과 철근콘크리트조의 철근구조체 등을 사용하는 경우에는 전기적 연속성이 보장될 것. 이 경우 전기적 연속성이 있다고 판단되기 위하여는 건축물 금속 구조체의 최상단부와 지표레벨 사이의 전기저항이 0.2옴 이하이어야 한다.
5. 측면 낙뢰를 방지하기 위하여 높이가 60미터를 초과하는 건축물 등에는 지면에서 건축물 높이의 5분의 4가 되는 지점부터 최상단부분까지의 측면에 수뢰부를 설치하여야 하며, 지표레벨에서 최상단부의 높이가 150미터를 초과하는 건축물은 120미터 지점부터 최상단부분까지의 측면에 수뢰부를 설치할 것. 다만, 건축물의 외벽이 금속부재(部材)로 마감되고, 금속부재 상호간에 제4호 후단에 적합한 전기적 연속성이 보장되며 피뢰시스템레벨 등급에 적합하게 설치하여 인하도선에 연결한 경우에는 측면 수뢰부가 설치된 것으로 본다.
6. 접지(接地)는 환경오염을 일으킬 수 있는 시공방법이나 화학 첨가물 등을 사용하지 아니할 것
7. 급수·급탕·난방·가스 등을 공급하기 위하여 건축물에 설치하는 금속배관 및 금속재 설비는 전위(電位)가 균등하게 이루어지도록 전기적으로 접속할 것
8. 전기설비의 접지계통과 건축물의 피뢰설비 및 통신설비 등의 접지극을 공용하는 통합접지공사를 하는 경우에는 낙뢰 등으로 인한 과전압으로부터 전기설비 등을 보호하기 위하여 한국산업표준에 적합한 서지보호장치(SPD)를 설치할 것
9. 그 밖에 피뢰설비와 관련된 사항은 한국산업표준에 적합하게 설치할 것

[전문개정 2006. 2. 13]

## 공통 · 통합접지 검사업무처리방법

| 공통접지                                                                                | 통합접지                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>고압 및 특고압 접지계통과 저압 접지계통이 등전위가 되도록 공통으로 접지하는 방식</p>                                | <p>전기설비 접지, 통신설비 접지, 피뢰설비 접지 및 수도관, 가스관, 철근, 철골 등과 같이 전기 설비와 무관한 계통외도전부도 모두 함께 접지하여 그들 간에 전위차가 없도록 함으로써 인체의 감전우려를 최소화하는 방식을 말함. 통합접지의 본질적 목적은 건물내에 사람이 접촉할 수 있는 모든 도전부가 항상 같은 대지전위를 유지할 수 있도록 등전위를 형성하는 것임. ※ 통신설비 통합접지 여부는 통신사업자의 결정에 의할 수 있음</p> |
|  |                                                                                                                                                                |
|  |                                                                                                                                                                |
|  |                                                                                                                                                                |

# 공통 · 통합접지

## 1. 공통 · 통합접지 정의

- 공통접지

등전위가 형성되도록 고압 및 특고압 접지계통과 저압 접지계통을 공통으로 접지하는 방식

- 통합접지

전기, 통신, 피뢰설비 등 모든 접지를 통합하여 접지하는 방식을 말하며, 건물 내의 사람이 접촉할 수 있는 모든 도전부가 등전위를 형성하여야 함.

## 2. 공통 · 통합 접지저항값

공사계획신고 설계도서(접지계산서 및 설계도)의 접지저항 값이 다음 중 어느 하나에 해당되는 경우에는 공통 · 통합 접지저항값으로 인정

가. 특고압계통 지락사고시 발생하는 고장전압이 저압기기에 인가되어도 인체 안전에 영향을 미치지 않는 인체 허용 접촉전압값 이하가 되도록 한 접지저항 값인 경우

나. 통합접지 방식으로 모든 도전부가 등전위를 형성하고 접지저항값이  $10\Omega$ 이하인 경우

## 3. 공통 · 통합 접지공사에 대한 부분검사 안내

- 신고수리방법

가. 공사계획신고수리 시 공사계획신고 확인증에 공통 · 통합 접지공사 중 또는 접지공사가 완료된 때 부분검사(접지공사에 대한 중간검사)를 신청토록 안내

나. 부분검사를 받지 않고 전기수용설비 전체 공사가 완료된 후에 사용전 검사를 신청하여 주변여건으로 접지저항 측정이 어려운 경우에는 감리자료(접지저항 측정값, 대지저항률 측정값, 접지극 재료, 형상 접속방법, 깊이 등)와 사진 등 증빙자료를 제출받아 접지저항 측정값사를 갈음함을 안내

## 4. 공통 · 통합 접지공사시 등전위본딩 검사 및 전기적 연속성 측정방법

- 판정기준

공통 · 통합 접지공사시 사람이 접촉할 우려가 있는 범위(수평방향 2.5m, 높이 2.5m)에 있는 모든 고정설비의 노출 도전성부분과 계통외 도전성부분은 다음과 같이 등전위본딩 검사를 실시하고, 전기적 연속성을 측정한 전기저항 값이  $0.2\Omega$ 이하일 것

- ① 주 접지단자와 계통외 도전성부분 간
- ② 노출 도전성부분 간, 노출 도전성부분과 계통외 도전성부분 간
- ③ TT 계통인 경우 주 접지단자와 노출 도전성부분 간
- ④ TN 계통인 경우 중성점과 노출 도전성부분 간

## MEMO

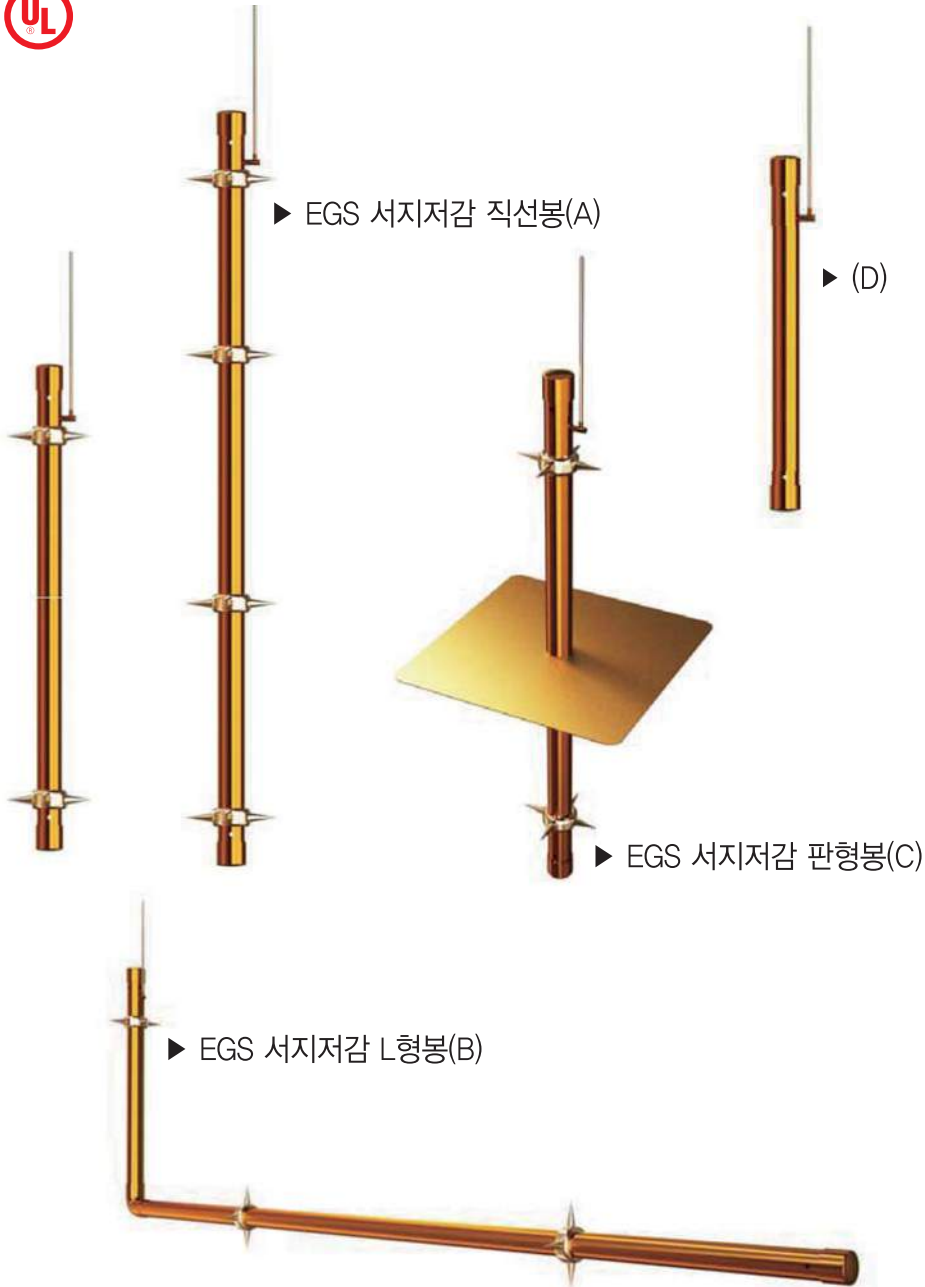
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# GROUNDING MATERIALS

## GROUNDING MATERIALS

|                                                                               |    |
|-------------------------------------------------------------------------------|----|
| EGS GROUND SYSTEM (서지방전 보링접지) .....                                           | 20 |
| LOW IMPEDANCE GROUNDING MODWULE (저 임피던스 접지 모듈) .....                          | 21 |
| COPPER CLAD STEEL WIRE (전기용 연질 동피복강연선) .....                                  | 22 |
| STS 316 STAINLESS STEEL PLATE / STS 316 STAINLESS STEEL ROD .....             | 23 |
| CARBON LOW RESISTANCE GROUND MODULE (탄소접지모듈).....                             | 24 |
| GROUND ROD WITH CONNECTOR / ROD CONNECTOR / U-BOLT TYPE ROD CONNECTOR .....   | 25 |
| BEATING GROUND ROD (심타식 접지봉) / GROUND PLATE .....                             | 26 |
| GROUNDING ENHANCEMENT BACKFILL (접지저항 저감제) .....                               | 27 |
| BRONZE BOLT (WATER STOP ROD) .....                                            | 28 |
| C TYPE SLEEVE / S TYPE SLEEVE / SERVICE CONNECTOR .....                       | 29 |
| REBAR CLAMP (철근용 콘넥타) / GROUND CONNECTOR.....                                 | 30 |
| U-BOLT CONNECTOR / CROSS CONNECTOR .....                                      | 31 |
| GROUND CONNECTOR / GROUND CLAMP (ONE HOLE CLAMP) .....                        | 32 |
| GROUND PAD / GROUND PAD .....                                                 | 33 |
| COMPRESSION TERMINAL (CASTING TYPE).....                                      | 34 |
| PIPE BONDING CLAMP / EARTH CLAMP .....                                        | 35 |
| ONE TOUCH BOND (금속관용 PE 본딩 클램프) .....                                         | 36 |
| INSPECTION PIT (TEST WELL) .....                                              | 37 |
| GROUND TERMINAL BOX / PVC GROUND TEST BOX (피뢰접지 단자함).....                     | 38 |
| GROUND RECEPTACLE / GROUND CLAMP (교각용 접지용 단자) / EARTH BOSS .....              | 39 |
| GROUND LUG / STATIC ELECTRICITY CONTROL ROD (정전기 제거봉) / BONDING JUMPERS ..... | 40 |
| EARTH TRANSIENT PROTECTOR (전위차해소기) / EARTH REEL / DISCONNECTING LINK .....    | 41 |
| CABLE TREFOIL CLEAT .....                                                     | 42 |
| SINGLE WAY CABLE CLEAT .....                                                  | 43 |
| CABLE TREFOIL CLEAT (STAINLESS STEEL) .....                                   | 44 |
| ELECTRICAL HAFETY SIGNS .....                                                 | 45 |

## ■ EGS GROUND SYSTEM (서지방전 보링접지)



### ■ EGS ROD 시공 과정



보링천공작업



Welding 작업



EGS Rod 작업



저감제 주입작업



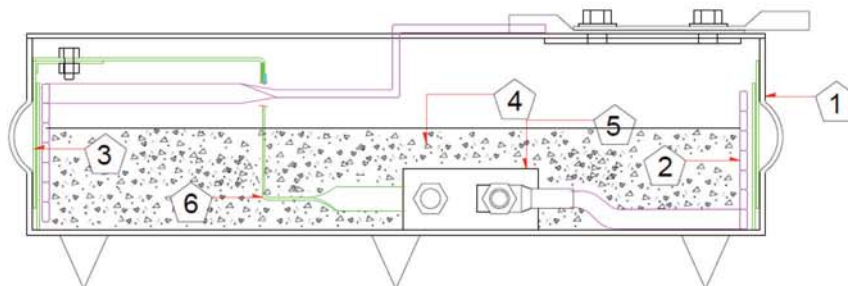
접지선 인출

| Catalog Number | EGS 직선형(A) | EGS L형(B) | EGS 판형(C) | EGS 직선형(D) |
|----------------|------------|-----------|-----------|------------|
| KRG 120        | D54-1.2M   | D54-1+3M  | D54-1.2M  | D80-1.2M   |
| KRG 121        | D54-3M     | D54-1+6M  |           |            |
| KRG 122        | D54-6M     | D54-1+9M  |           |            |
| KRG 123        | D54-9M     |           |           |            |

### ■ LOW IMPEDANCE GROUNDING MODWULE(저 임피던스 접지 모듈)



| Catalog No. | Size [mm]   | Material            | Impedance         |
|-------------|-------------|---------------------|-------------------|
| KSGM-031    | Ø300 x H200 | Stainless steel 316 | 0.8Ω 이하 (100 kHz) |



|   |           |                                                             |
|---|-----------|-------------------------------------------------------------|
| 1 | 외함 :      | 스테인리스 스틸, 샌딩 마감<br>표면적 확대 → 접지저항 확보 용이<br>하부 핀 → 서지 방류 용이   |
| 2 | 인덕터 :     | 알루미늄 , 6.5 Turn<br>절연체로 절연, 서지 유입시 커패시터와 공진<br>→ 임피던스 증가 억제 |
| 3 | 커패시터 전극 : | 유전체로 감싸여져 있음.<br>외함과 절연 후 연결 커넥터로 코일과 병렬 접속                 |
| 4 | 충진재 :     | 저감재 → 전류 방류 용이<br>부유 화산석 → 내부 부품 결속 및 무게 저감                 |
| 5 | 본딩 블록 :   | 코일과 커패시터 접속용                                                |
| 6 | 연결 자재 :   | 스테인리스 스틸                                                    |

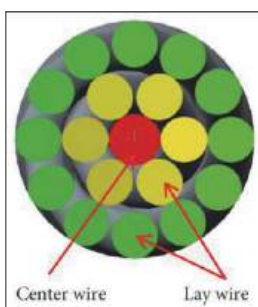
## ■ COPPER CLAD STEEL WIRE(전기용 연질 동피복강연선)

### 1. 제품 개요 (Product Overview)



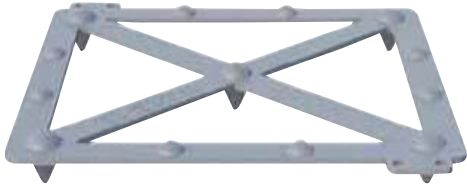
- 제품명: Annealed Copper-Clad Steel Stranded Wires Electrical purposes  
전기용 연질 동피복 강연선
- 용도: 접지용 (Grounding System)
- 특징: 강선(steel)의 높은 인장강도 + 동(copper)의 전도성 확보  
부식에 강하고 수명 우수  
도난 방지 효과 (순동 대비)  
경제성 우수

### 2. 제품 규격표 (Specification Table)



| 항목     | 내용                 |
|--------|--------------------|
| 공칭 단면적 | 70 mm <sup>2</sup> |
| 소선 구성  | 19 / 2.17 mm       |
| 도체 형태  | 연선 (Stranded)      |
| 외경     | 10.85 mm           |
| 도전율    | 40 % IACS          |
| 인장강도   | 18KN.이상            |
| 표면 상태  | 균일, 균열 및 박리 없음     |

### ■ STS 316 STAINLESS STEEL PLATE (STS316P - STS304 접지판)



| Catalog Number | Size    | Material            |
|----------------|---------|---------------------|
| KEC STS-316P   | 500×500 | Stainless Steel 316 |

※ 디자인등록



| Catalog Number | Size    | Material            |
|----------------|---------|---------------------|
| KEC STS-304    | 500×500 | Stainless Steel 304 |

#### ▶ 시공상세도



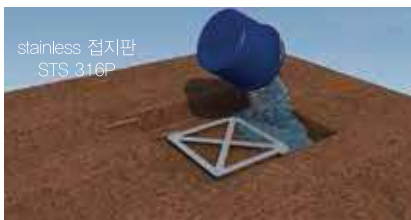
1. 터파기



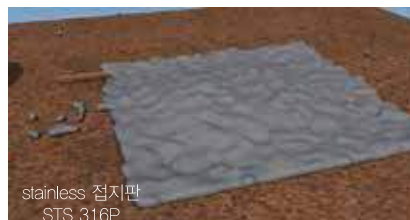
2. STS 316P 접지판



3. 접지선 접속



4. 저감제 첨가



5. 저감제 경화

### ■ STS 316 STAINLESS STEEL ROD (STS316R 접지봉)



| Catalog Number | Size     | Material            |
|----------------|----------|---------------------|
| KEC STS-316R   | Ø30×1300 | Stainless Steel 316 |

※ 디자인등록

## ■ CARBON LOW RESISTANCE GROUND MODULE (탄소접지모듈)



| Catalog Number | Size      | Material |
|----------------|-----------|----------|
| KEC K-1000     | ø260×1000 |          |



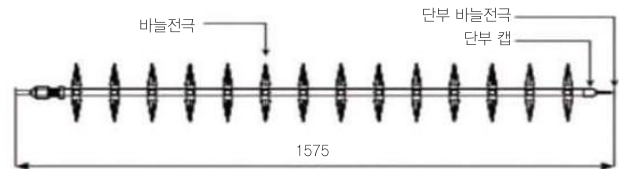
| Catalog Number | Size     | Material |
|----------------|----------|----------|
| KEC K-800      | ø160×800 |          |



| Catalog Number | Size     | Material |
|----------------|----------|----------|
| KEC K-800-1    | ø160×800 |          |

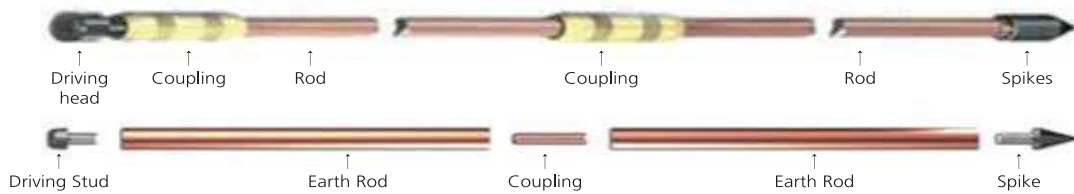
| 퍼라이트 접지모듈                                                                           | OMNI G SERIES                                                                                                                |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>OMNI G-2PS</b><br/> 시방      – 크기 : ø260×1000mm<br/>             – 중량 : 38kg±10%</p> <p>인증내용   – NEP 신제품인증 + 한국발명특허</p> |
|  | <p><b>OMNI G-2P</b><br/> 시방      – 크기 : ø260×1000mm<br/>             – 중량 : 38kg±10%</p> <p>인증내용   – 한국발명특허</p>              |
|  | <p><b>OMNI G-1P</b><br/> 시방      – 크기 : ø160×800mm<br/>             – 중량 : 13kg±10%</p> <p>인증내용   – 한국발명특허</p>               |

■ 침상 접지봉



| Catalog Number | Size     |
|----------------|----------|
| KRG 90         | Ø14×1500 |

■ GROUND ROD WITH CONNECTOR (접지봉, 콘넥타)



| Catalog Number | Size         |
|----------------|--------------|
| KRG 91         | Ø12~25(제작사양) |



| Catalog Number    |           | Size     |
|-------------------|-----------|----------|
| Copper Clad Steel | HDG Steel |          |
| KRG 100           | KRG 106   | Ø12×1000 |
| KRG 101           | KRG 107   | Ø14×1000 |
| KRG 102           | KRG 108   | Ø16×1800 |
| KRG 103           | KRG 109   | Ø18×2400 |
| KRG 104           | KRG 110   | Ø19×2400 |
| KRG 105           | KRG 111   | Ø19×3000 |

■ ROD CONNECTOR (접지봉, 콘넥타)



KRG 112



KRG 113

| Catalog Number | Rod Dia. | Cable Size           |
|----------------|----------|----------------------|
| KRG 112        | 12~16    | 35~50mm <sup>2</sup> |
| KRG 113        | 18~19    | 70~95mm <sup>2</sup> |

■ U-BOLT TYPE ROD CONNECTOR (접지봉, U-BOLT 콘넥타)



KRG 115

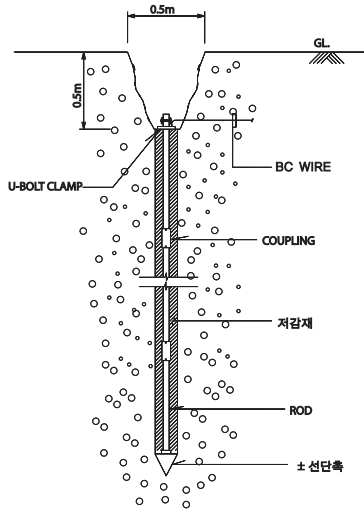


KRG 116

| Catalog Number | Rod Dia. | Cable Size           |
|----------------|----------|----------------------|
| KRG 115        | 18~19    | 95mm <sup>2</sup>    |
| KRG 116        | 14~16    | 50~70mm <sup>2</sup> |

## ■ BEATING GROUND ROD (심타식 접지봉)

### ▶ 심타 및 전극 타입시의 단면도



DETAIL "1" (심타식 접지봉)

S = NONE

### ▶ 심타 접지 전극 구성 부품



심타봉

| 부품번호           | 1          | 2        | 3    | 4       | 5     | 6     |
|----------------|------------|----------|------|---------|-------|-------|
| 부품명칭           | 선단축        | ROD봉     | 카플링  | 접속CLAMP | 타입CAP | 고강도   |
| 재질             | S 45C      | S 45C(亞) | S45C | 황 동     | S 45C | 시스템   |
| Catalog Number |            |          |      |         |       |       |
| KRG 124        | L 형 (10m용) | 1 EA     | 10本  | 9 EA    | 1 EA  | 1 EA  |
| KRG 125        | M형 (5m용)   | 1 EA     | 5本   | 4 EA    | 1 EA  | 1 EA  |
|                |            |          |      |         |       | 20 kg |
|                |            |          |      |         |       | 10 kg |

注) (亞)표기는 아연 도금임.

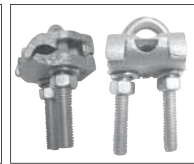
- 시스템 수량 20kg, 10kg은 사용할 때의 주입 필요량이며 별도 판매함.
- 타입시에는 전용 BEAT HOLDER가 필요하다.



선단축



COUPLING



U-BOLT CLAMP



타입CAP



BEAT HOLDER

## ■ GROUND PLATE (접지동판)

Material : Copper

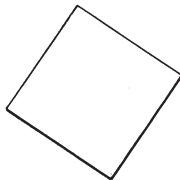


Fig 1 (Bare)

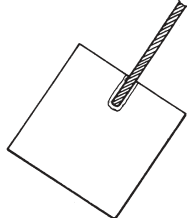


Fig 2 (Electric Welding)

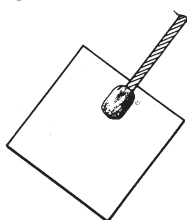
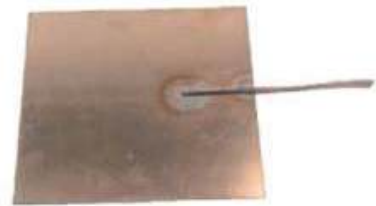


Fig 3 (Exothermic Welding)



| Size (mm)     | Catalog Number |         |         |
|---------------|----------------|---------|---------|
|               | Fig 1          | Fig 2   | Fig 3   |
| 300×300×0.7   | KRG 180        | KRG 187 | KRG 194 |
| 300×300×1.0   | KRG 181        | KRG 188 | KRG 195 |
| 300×300×1.5   | KRG 182        | KRG 189 | KRG 196 |
| 300×300×2.0   | KRG 183        | KRG 190 | KRG 197 |
| 500×500×1.5   | KRG 184        | KRG 191 | KRG 198 |
| 500×500×2.0   | KRG 185        | KRG 192 | KRG 199 |
| 1000×1000×2.0 | KRG 186        | KRG 193 | KRG 200 |

※ Other sizes available on request

## ■ GROUNDING ENHANCEMENT BACKFILL (접지저항 저감제)



| 고강도접지저항저감제     |          |
|----------------|----------|
| Catalog Number | Standard |
| KRG 130        | 10 kg    |

※ 토양환경보전법 인증 (한국전기연구원)



| Earth Ron      |          |
|----------------|----------|
| Catalog Number | Standard |
| KRG 131        | 10 kg    |



| Pro-Tech       |                  |
|----------------|------------------|
| Catalog Number | Standard         |
| KRG 132        | 22.68 kg (50LBS) |



| Aquaguard      |                 |
|----------------|-----------------|
| Catalog Number | Standard        |
| KRG 133        | 22.68 kg(50LBS) |

※ NSF 인증

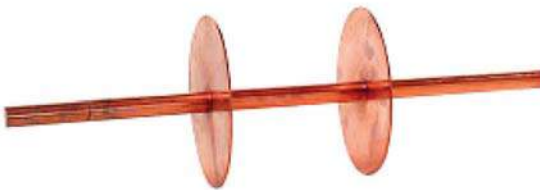
## ■ WATER STOP ROD (수막처리동봉)

Type A



| Type | Catalog Number | Dimension |
|------|----------------|-----------|
| A    | KRG 230        | ø24×510   |
|      | KRG 231        | ø24×730   |

Type B



| Type           | Catalog Number | Dimension            |
|----------------|----------------|----------------------|
| B              | KRG 232        | ø150×ø300/500L       |
|                | KRG 233        | ø100×ø300/500L       |
| CONDUCTOR SIZE |                | 6~300mm <sup>2</sup> |

Type C



| Type           | Catalog Number | Dimension            |
|----------------|----------------|----------------------|
| C              | KRG 234        | ø150×ø300/500L       |
|                | KRG 235        | ø100×ø300/500L       |
| CONDUCTOR SIZE |                | 6~300mm <sup>2</sup> |

Type D



| Type           | Catalog Number | Dimension            |
|----------------|----------------|----------------------|
| D              | KRG 236        | ø100×150L            |
| CONDUCTOR SIZE |                | 6~300mm <sup>2</sup> |

Type E



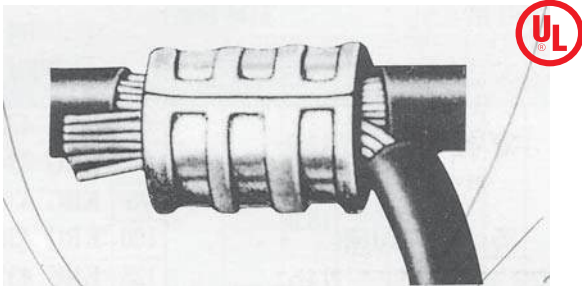
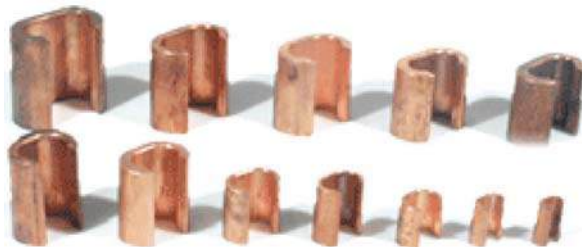
| Type           | Catalog Number | Dimension            |
|----------------|----------------|----------------------|
| E              | KRG 237        | 150L                 |
| CONDUCTOR SIZE |                | 6~300mm <sup>2</sup> |

Type F



| Type           | Catalog Number | Dimension            |
|----------------|----------------|----------------------|
| F              | KRG 238        | 300~500L             |
| CONDUCTOR SIZE |                | 6~300mm <sup>2</sup> |

### ■ C TYPE SLEEVE (C형 슬리브)



| Catalog Number | Conductor mm <sup>2</sup> |     |
|----------------|---------------------------|-----|
|                | Run                       | Tap |
| KRG 410        | 300                       | 300 |
| KRG 411        | 240                       | 240 |
| KRG 412        | 185                       | 185 |
| KRG 413        | 150                       | 150 |
| KRG 414        | 120                       | 120 |
| KRG 415        | 95                        | 95  |
| KRG 416        | 70                        | 70  |
| KRG 417        | 50                        | 50  |
| KRG 418        | 35                        | 35  |
| KRG 419        | 25                        | 25  |
| KRG 420        | 16                        | 16  |
| KRG 421        | 10                        | 10  |
| KRG 422        | 6                         | 6   |

### ■ CROSS SLEEVE (+형 슬리브)



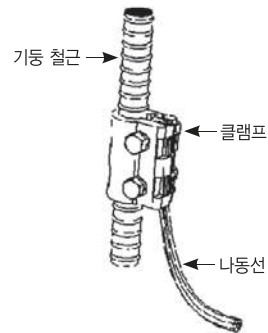
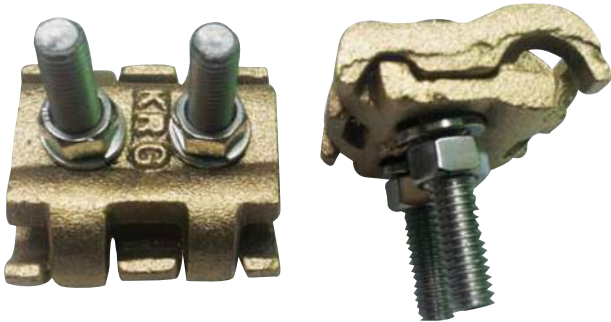
| Catalog Number | Conductor mm <sup>2</sup> |     |
|----------------|---------------------------|-----|
|                | Run                       | Tap |
| KRG 520        | 185                       | 185 |
| KRG 521        | 150                       | 150 |
| KRG 522        | 120                       | 120 |
| KRG 523        | 95                        | 95  |
| KRG 524        | 70                        | 70  |

### ■ SERVICE CONNECTOR (전선 콘넥타)



| Conductor (mm <sup>2</sup> ) | Catalog Number |
|------------------------------|----------------|
| 35                           | KRG 150        |
| 50                           | KRG 151        |
| 70                           | KRG 152        |
| 95                           | KRG 153        |
| 120                          | KRG 154        |
| 150                          | KRG 155        |
| 185                          | KRG 156        |

## ■ REBAR CLAMP (철근 콘넥타)



구조체 접속(클램프)

| Catalog Number | Conductor             | 철근          |
|----------------|-----------------------|-------------|
| KRG 450        | 35~70 mm <sup>2</sup> | 13mm ~ 20mm |

## ■ GROUND CONNECTOR (접지 콘넥타)



Type A

Type B



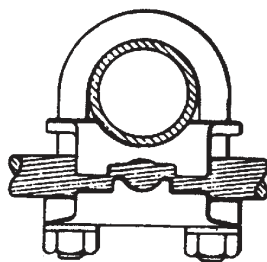
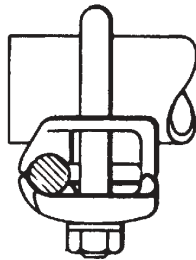
Type A

Type B

| Conductor mm <sup>2</sup> | Catalog Number |         |
|---------------------------|----------------|---------|
|                           | Type A         | Type B  |
| 35                        | KRG 240        | KRG 246 |
| 50                        | KRG 241        | KRG 247 |
| 70                        | KRG 242        | KRG 248 |
| 95                        | KRG 243        | KRG 249 |
| 120                       | KRG 244        | KRG 250 |
| 150                       | KRG 245        | KRG 251 |

| Conductor mm <sup>2</sup> | Catalog Number |         |
|---------------------------|----------------|---------|
|                           | Type A         | Type B  |
| 35                        | KRG 258        | KRG 264 |
| 50                        | KRG 259        | KRG 265 |
| 70                        | KRG 260        | KRG 266 |
| 95                        | KRG 261        | KRG 267 |
| 120                       | KRG 262        | KRG 268 |
| 150                       | KRG 263        | KRG 269 |

## ■ U-BOLT CONNECTOR (파이프 접지 콘넥타)



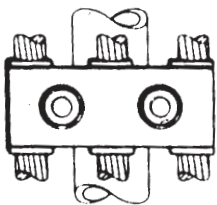
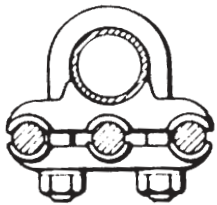
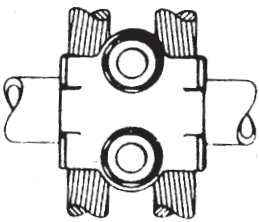
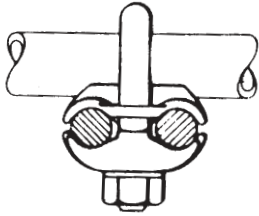
| Catalog Number    | Dimension |         |       |
|-------------------|-----------|---------|-------|
|                   | Tube      | Rod     | Cable |
| GAR-1103(KRG 270) | 6         | 13      | 25    |
| GAR-1107(KRG 271) |           |         | 70    |
| GAR-1110(KRG 272) |           |         | 95    |
| GAR-6403(KRG 273) | 10        | 16~19   | 25    |
| GAR-6407(KRG 274) |           |         | 70    |
| GAR-6410(KRG 275) |           |         | 95    |
| GAR-1403(KRG 276) | 13~19     | 22~25   | 25    |
| GAR-1407(KRG 277) |           |         | 70    |
| GAR-1410(KRG 278) |           |         | 95    |
| GAR-1503(KRG 279) | 25        | 29~32   | 25    |
| GAR-1507(KRG 280) |           |         | 70    |
| GAR-1510(KRG 281) |           |         | 95    |
| GAR-1603(KRG 282) | 32        | 35~48   | 25    |
| GAR-1607(KRG 283) |           |         | 70    |
| GAR-1610(KRG 284) |           |         | 95    |
| GAR-1703(KRG 285) | 35        | 41~48   | 25    |
| GAR-1707(KRG 286) |           |         | 70    |
| GAR-1710(KRG 287) |           |         | 95    |
| GAR-1803(KRG 288) | 50        | 50~60   | 25    |
| GAR-1807(KRG 289) |           |         | 70    |
| GAR-1810(KRG 290) |           |         | 95    |
| GAR-1903(KRG 291) | 64        | 64~73   | 25    |
| GAR-1907(KRG 292) |           |         | 70    |
| GAR-1910(KRG 293) |           |         | 95    |
| GAR-2003(KRG 294) | 76        | 76~89   | 25    |
| GAR-2007(KRG 295) |           |         | 70    |
| GAR-2010(KRG 296) |           |         | 95    |
| GAR-2103(KRG 297) | 89        | 89~102  | 25    |
| GAR-2107(KRG 298) |           |         | 70    |
| GAR-2110(KRG 299) |           |         | 95    |
| GAR-2203(KRG 300) | 102       | 102~114 | 25    |
| GAR-2207(KRG 301) |           |         | 70    |
| GAR-2210(KRG 302) |           |         | 95    |
| GAR-2403(KRG 303) | 127       | -       | 25    |
| GAR-2407(KRG 304) |           |         | 70    |
| GAR-2410(KRG 305) |           |         | 95    |

## ■ CROSS CONNECTOR (십자형 콘넥타)



| Conductor mm <sup>2</sup> | Catalog Number |
|---------------------------|----------------|
| 25~35                     | KRG 327        |
| 50~70                     | KRG 328        |
| 95~120                    | KRG 329        |
| 150~185                   | KRG 330        |

## ■ GROUND CONNECTOR (파이프 접지 콘넥타)



| Catalog Number | Dimension |       |
|----------------|-----------|-------|
|                | Tube      | Cable |
| KRG 350        | 16~22mm   | 25    |
| KRG 351        |           | 70    |
| KRG 352        |           | 95    |
| KRG 353        | 28mm      | 25    |
| KRG 354        |           | 70    |
| KRG 355        |           | 95    |
| KRG 356        | 36mm      | 25    |
| KRG 357        |           | 70    |
| KRG 358        |           | 95    |
| KRG 359        | 42mm      | 25    |
| KRG 360        |           | 70    |
| KRG 361        |           | 95    |

| Catalog Number | Dimension |       |
|----------------|-----------|-------|
|                | Tube      | Cable |
| KRG 362        | 54~70mm   | 25    |
| KRG 363        |           | 70    |
| KRG 364        |           | 95    |
| KRG 365        | 70mm      | 25    |
| KRG 366        |           | 70    |
| KRG 367        |           | 95    |
| KRG 368        | 82mm      | 25    |
| KRG 369        |           | 70    |
| KRG 370        |           | 95    |
| KRG 371        | 104mm     | 25    |
| KRG 372        |           | 70    |
| KRG 373        |           | 95    |

| Catalog Number | Dimension |       |
|----------------|-----------|-------|
|                | Tube      | Cable |
| KRG 374        | 28mm      | 25    |
| KRG 375        |           | 70    |
| KRG 376        |           | 95    |
| KRG 377        | 36mm      | 25    |
| KRG 378        |           | 70    |
| KRG 379        |           | 95    |
| KRG 380        | 42mm      | 25    |
| KRG 381        |           | 70    |
| KRG 382        |           | 95    |
| KRG 383        | 54mm      | 25    |
| KRG 384        |           | 70    |
| KRG 385        |           | 95    |

| Catalog Number | Dimension |       |
|----------------|-----------|-------|
|                | Tube      | Cable |
| KRG 386        | 70mm      | 25    |
| KRG 387        |           | 70    |
| KRG 388        |           | 95    |
| KRG 389        | 82mm      | 25    |
| KRG 390        |           | 70    |
| KRG 391        |           | 95    |
| KRG 392        | 90mm      | 25    |
| KRG 393        |           | 70    |
| KRG 394        |           | 95    |
| KRG 395        | 104mm     | 25    |
| KRG 396        |           | 70    |
| KRG 397        |           | 95    |

## ■ GROUND CLAMP (ONE HOLE CLAMP)



| Catalog Number | Size SQ mm <sup>2</sup> |
|----------------|-------------------------|
| KRG 398        | 25                      |
| KRG 399        | 35                      |
| KRG 400        | 70                      |
| KRG 401        | 95                      |
| KRG 402        | 120                     |
| KRG 403        | 150                     |
| KRG 404        | 185                     |
| KRG 405        | 240                     |

### ■ GROUND PAD(본딩 블럭 패드)

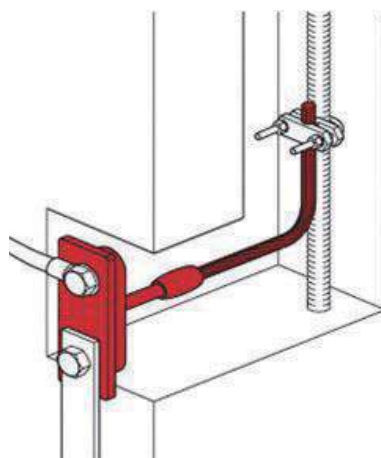


| Catalog Number |     |
|----------------|-----|
| KRG 213        | 2 H |

### ■ GROUND PAD(본딩 블럭 패드)



| Catalog Number |     |
|----------------|-----|
| KRG 219        | 1 H |
| KRG 220        | 2 H |
| KRG 221        | 4 H |



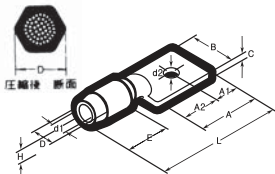
### ■ GROUND PAD(수막형 본딩 블럭)



| Catalog Number |     |
|----------------|-----|
| KRG 214        | 1 H |
| KRG 215        | 2 H |
| KRG 216        | 3 H |

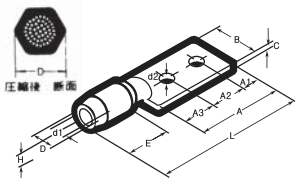
## ■ COMPRESSION TERMINAL CASTING TYPE (동주물 단자)

동주물 1H



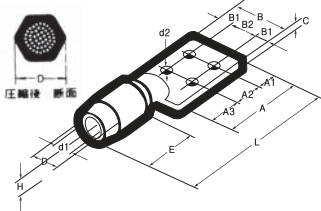
| Conductor<br>mm <sup>2</sup> | Dimension in mm |      |    |    |    |    |    |   |    |    |         | 사용 Bolt    |            | Catalog<br>Number |
|------------------------------|-----------------|------|----|----|----|----|----|---|----|----|---------|------------|------------|-------------------|
|                              | D               | d1   | E  | A  | A1 | A2 | B  | C | d2 | L  | H       | Bolt<br>규격 | Hole<br>의수 |                   |
| 25                           | 14              | 6.4  | 26 | 55 | 25 | 30 | 40 | 5 | 14 | 90 | 8       | M12        | 1          | KRG 430           |
| 35                           |                 | 8.3  |    |    |    |    |    |   |    |    | KRG 431 |            |            |                   |
| 50                           | 19              | 10.6 | 30 |    |    |    |    |   |    |    | KRG 432 |            |            |                   |

동주물 2H



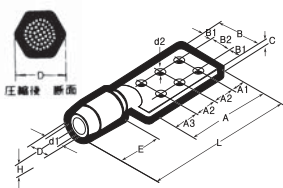
| Conductor<br>mm <sup>2</sup> | Dimension in mm |         |     |      |      |    |         |         |     |    |     |      | 사용 Bolt    |            | Catalog<br>Number |
|------------------------------|-----------------|---------|-----|------|------|----|---------|---------|-----|----|-----|------|------------|------------|-------------------|
|                              | D               | d1      | E   | A    | A1   | A2 | A3      | B       | C   | d2 | L   | H    | Bolt<br>규격 | Hole<br>의수 |                   |
| 50                           | 19              | 10.2    | 30  | 90   | 18   | 40 | 32      | 40      | 6   | 14 | 135 | 11.0 | M12        | 2          | KRG 433           |
| 60                           |                 | 10.6    |     |      |      |    |         |         |     |    |     |      |            |            | 35                |
| 70                           | 11.7            | 45      | 50  | 10   | 170  |    | 16.0    | KRG 435 |     |    |     |      |            |            |                   |
| 95                           | 13.6            |         |     |      |      |    |         | 53      | 110 |    | 25  | 180  |            |            |                   |
| 120                          | 15.2            | 62      | 270 | 19.5 | 20.5 |    | KRG 437 |         |     |    |     |      |            |            |                   |
| 150                          | 16.9            |         |     |      |      |    | 20.5    | KRG 438 |     |    |     |      |            |            |                   |
| 185                          | 18.5            | KRG 439 |     |      |      |    |         |         |     |    |     |      |            |            |                   |
| 200                          | 19.5            | KRG 440 |     |      |      |    |         |         |     |    |     |      |            |            |                   |
| 240                          | 21.0            | KRG 441 |     |      |      |    |         |         |     |    |     |      |            |            |                   |
| 250                          | 21.9            | KRG 442 |     |      |      |    |         |         |     |    |     |      |            |            |                   |

동주물 4H



| Conductor<br>mm <sup>2</sup> | Dimension in mm |      |    |     |    |    |    |    |      |    |     |    |      |         | 사용 Bolt    |            | Catalog<br>Number |
|------------------------------|-----------------|------|----|-----|----|----|----|----|------|----|-----|----|------|---------|------------|------------|-------------------|
|                              | D               | d1   | E  | A   | A1 | A2 | A3 | B  | B1   | B2 | C   | d2 | L    | H       | Bolt<br>규격 | Hole<br>의수 |                   |
| 300                          | 42              | 24.7 | 62 | 115 | 25 | 40 | 50 | 75 | 17.5 | 40 | 10  | 14 | 212  | 23      | M12        | 4          | KRG 443           |
| 400                          | 47              | 27.4 | 70 |     |    |    |    |    |      |    | 222 |    | 22.5 | KRG 444 |            |            |                   |
| 500                          |                 | 30.2 |    |     |    |    |    |    |      |    |     |    |      | KRG 445 |            |            |                   |

동주물 6H



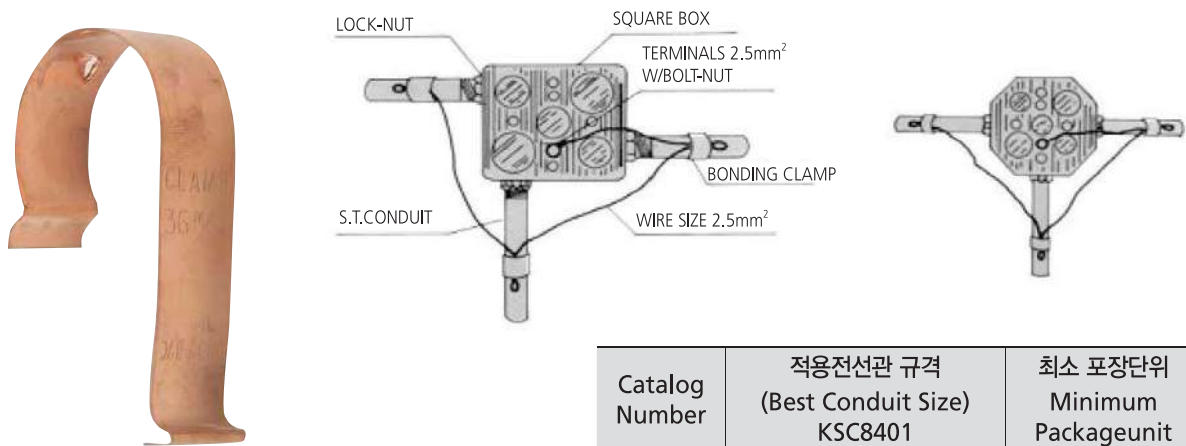
| Conductor<br>mm <sup>2</sup> | Dimension in mm |      |     |     |    |    |    |     |      |    |    |         |     |      | 사용 Bolt    |            | Catalog<br>Number |
|------------------------------|-----------------|------|-----|-----|----|----|----|-----|------|----|----|---------|-----|------|------------|------------|-------------------|
|                              | D               | d1   | E   | A   | A1 | A2 | A3 | B   | B1   | B2 | C  | d2      | L   | H    | Bolt<br>규격 | Hole<br>의수 |                   |
| 630                          | 51              | 33.3 | 70  | 155 | 25 | 40 | 50 | 75  | 17.5 | 40 | 12 | 14      | 262 | 28   | M12        | 6          | KRG 446           |
| 725                          | 56              | 36.7 | 90  | 190 | 30 | 50 | 60 | 100 | 25   | 50 |    | 18      | 325 | 30.5 | M16        |            | KRG 447           |
| 800                          |                 | 39.3 |     |     |    |    |    |     |      |    |    |         |     |      |            |            | KRG 448           |
| 1000                         | 64              | 43.2 | 100 |     |    |    |    |     |      |    |    | KRG 449 |     |      |            |            |                   |

### ■ PIPE BONDING CLAMP (난간 접지 클램프)



| Catalog Number | Standard      | Pipe     | Conductor |
|----------------|---------------|----------|-----------|
| KRG 498        | Bonding Clamp | 16C~54C  | 35SQ~95SQ |
| KRG 499        |               | 70C~104C | 35SQ~95SQ |

### ■ EARTH CLAMP (파이프 접지 클램프)



- ▶ 설치방법(INSTALLATION)  
 ※ 표준접지선(STANDARD EARTH CABLE)  
 16C~42C(2.0m/m)  
 54C~104C(2.6m/m)

| Catalog Number | 적용전선관 규격<br>(Best Conduit Size)<br>KSC8401 | 최소 포장단위<br>Minimum<br>Packageunit |
|----------------|--------------------------------------------|-----------------------------------|
| KRG 500        | 16C                                        | 100EA                             |
| KRG 501        | 22C                                        | 100EA                             |
| KRG 502        | 28C                                        | 100EA                             |
| KRG 503        | 36C                                        | 100EA                             |
| KRG 504        | 42C                                        | 100EA                             |
| KRG 505        | 54C                                        | 50EA                              |
| KRG 506        | 70C                                        | 20EA                              |
| KRG 507        | 82C                                        | 20EA                              |
| KRG 508        | 104C                                       | 20EA                              |

## ■ ONE TOUCH BOND(금속관용 PE 본딩 클램프)

One Touch Bond는 C자형의 자외선 안정화 PE 몰딩 재료로 구성되며, 배관에 고정되어 금속과 금속이 직접 접촉하도록 본딩 도체를 견고하게 고정한다.

기존 금속제품과 다르게 날카로운 모서리가 없고 드라이버가 미끄러져 부상을 입을 위험이 없기 때문에 기존 접지 클램프보다 안전하다.

공구 사용과 관련된 위험 평가 문서에서 원터치 접지클램프를 '경미한 위험'으로 간주할 수 있다.

나사, 와셔 등의 작은 부품이 분실될 염려가 없다. 싱크대나 욕조 아래와 같이 좁은 공간에 설치하기가 매우 용이하다.



### 제품 규격(종류)

| Part No. | KOTB-16P | KOTB-22P | KOTB-28P | KOTB-36P | KOTB-42P | KOTB-54P |
|----------|----------|----------|----------|----------|----------|----------|
| 전선관규격    | 16C      | 22C      | 28C      | 36C      | 42C      | 54C      |
| 나사없는 전선관 | E19      | E25      | E31, E39 |          | E51      | E63      |
| 제품 내경    | 21       | 27       | 34       | 42       | 48       | 60       |
| 본딩 도체 굵기 | 6, 10    | 6, 10    | 6, 10    | 6, 10    | 10, 16   | 10, 16   |

### 제품 특징

#### One Touch Bond

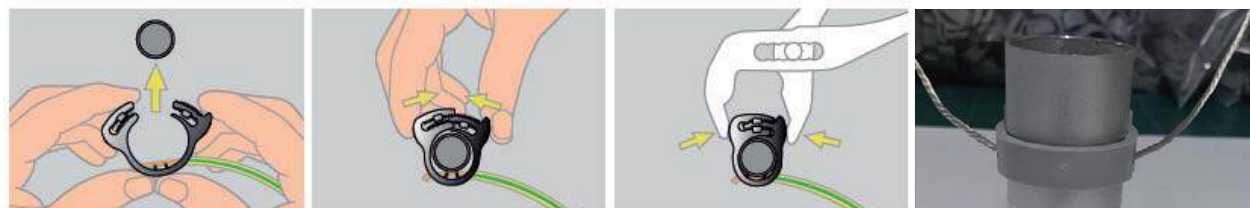
- 신속한 시공성 – 별도의 가공 없이 즉시 체결
- 안정성 증대 – 견고한 체결
- 전기적 접속 – 안정적인 접속 저항 확보
- 구조적 안정 – 치형구조로 빠짐 및 풀림 방지

#### 기존 파이프 본딩

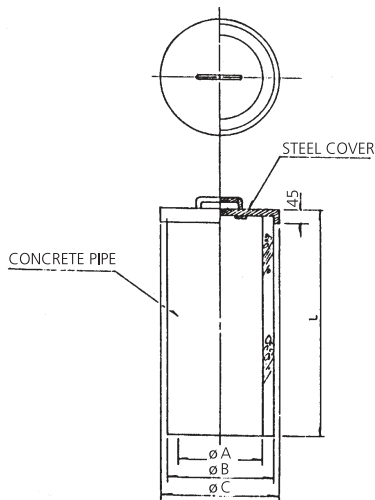
- 시공성 난이도 상 – 시간 지연 및 재작업
- 작업자 숙련도에 따른 품질 편차
- 접촉 불량으로 인한 안정성 저하
- 구조적 불안정 – 부식 발생 및 경년 열화



### 시공 방법 및 설치 사진

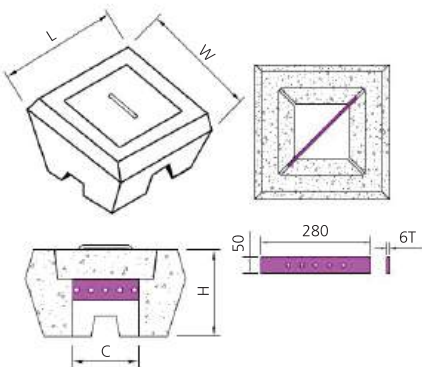


## ■ INSPECTION PIT (TEST WELL)



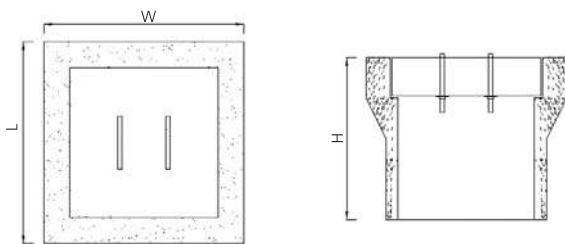
| Catalog Number | Dimension in mm |     |     |     | Remark                |
|----------------|-----------------|-----|-----|-----|-----------------------|
|                | A               | B   | C   | L   |                       |
| KRG 226        | 300             | 400 | 420 | 600 | with 6holes earth bar |

※ Material : Body (Concrete)  
Cover (H.D.G Steel)



| Catalog Number | Dimension in mm |     |     |     | Remark               |
|----------------|-----------------|-----|-----|-----|----------------------|
|                | L               | W   | C   | H   |                      |
| KRG 227        | 390             | 390 | 160 | 210 | with 5holes earthbar |

※ Material : Body (Concrete)  
Cover (Concrete)



| Catalog Number | Dimension in mm |     |     | Remark                |
|----------------|-----------------|-----|-----|-----------------------|
|                | L               | W   | H   |                       |
| KRG 228        | 500             | 500 | 400 | with 6holes earth bar |

※ Material : Body (Concrete)  
Cover (Concrete)



| Catalog Number | Dimension in mm |     |     | Remark                |
|----------------|-----------------|-----|-----|-----------------------|
|                | L               | W   | H   |                       |
| KRG 229        | 280             | 280 | 180 | with 5holes earth bar |

※ Material : Body - PVC  
Cover - PVC

## ■ GROUND TERMINAL BOX (접지 단자함)



| Division | Catalor Number |           |         | Box Size    |             |
|----------|----------------|-----------|---------|-------------|-------------|
|          | Steel          | Cover STS | STS     | 50SQ        | 95SQ        |
| 1 CCT    | KRG 480        | KRG 486   | KRG 492 | 200X300X100 | 200X300X100 |
| 2 CCT    | KRG 481        | KRG 487   | KRG 493 | 200X300X100 | 300X400X100 |
| 3 CCT    | KRG 482        | KRG 488   | KRG 494 | 300X400X100 | 300X400X100 |
| 4 CCT    | KRG 483        | KRG 489   | KRG 495 | 300X400X100 | 400X400X100 |
| 5 CCT    | KRG 484        | KRG 490   | KRG 496 | 400X400X100 | 400X400X100 |
| 6 CCT    | KRG 485        | KRG 491   | KRG 497 | 400X400X100 | 500X400X100 |

## ■ PVC GROUND TEST BOX (피뢰접지 단자함)

### ▶ 피뢰접지 단자함 / 1회로, 2분기



규격 :  
200×300×100mm

내부 1회로

내부 2분기

### ▶ 피뢰접지 단자함 / 3회로



규격 :  
300×300×100mm

내부 3회로

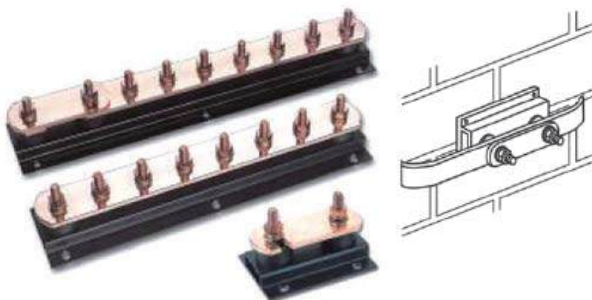
#### ■ 피뢰접지 단자함의 특징

- 웅벽 및 조적시공이 간편함
- 디자인이 미려하고 견고함
- 터미널은 순동98% 이상 밀링가공 제품
- 다량 생산으로 공사비가 저렴함
- 반영구적인 수명

#### ■ 피뢰접지 단자함의 재질

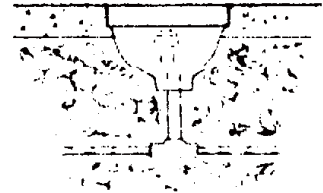
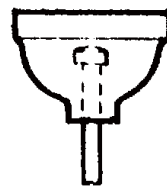
- BOX : PC/ABS
- COVER : PC/ABS
- 접지단자 및 전비 피스는 스테인레스 제품임.
- 접지단자는 동대를 가공한 일체형임.

## ■ EARTH BARS AND DISCONNECTING LINK



| Catalog Number | Type         |
|----------------|--------------|
| KRG 511        | Channel Base |

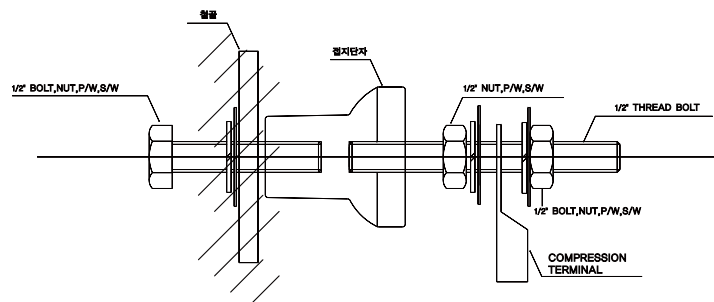
■ GROUND RECEPTACLE (항공접지단자)



Catalog Number

KRG 450

■ GROUND CLAMP (교각용 접지 단자)



※볼트류는 별도 주문사양

| Catalog Number | Thread    | Bolt Size               |
|----------------|-----------|-------------------------|
| KRG 451        | 1/2 " Tap | 1/2 "-20L<br>BRASS BOLT |

■ REBAR CLAMP (철근침쇠클램프)



| Catalog Number | Size(mm)     | Material |
|----------------|--------------|----------|
| KRG 450-1      | 수평철근 10mm 이상 | Steel    |

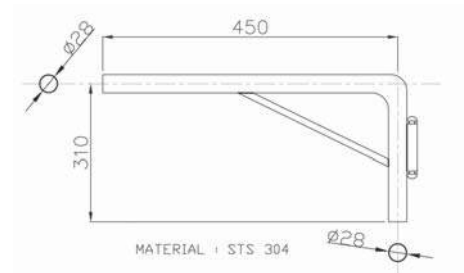
## ■ GROUND LUG



| Type   | Catalog Number | Material        |
|--------|----------------|-----------------|
| Type A | KRG 252        | Stainless Steel |
| Type B | KRG 253        | H.D.G Steel     |

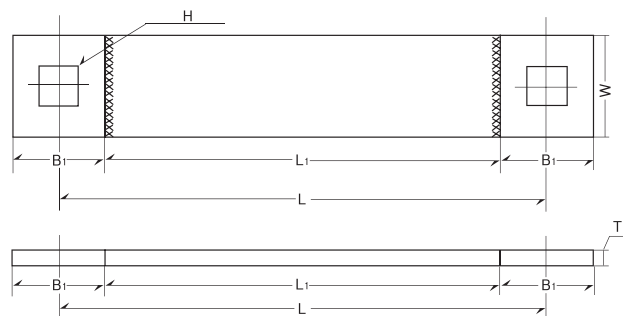
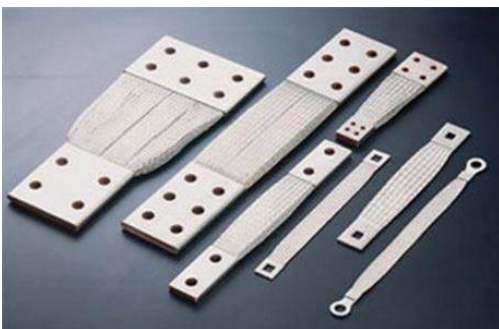
※ 주문제작사양

## ■ STATIC ELECTRICITY CONTROL ROD (정전기 제거봉)



| Catalog Number | Material        |
|----------------|-----------------|
| KRG 497        | Stainless Steel |

## ■ BONDING JUMPER



| 규격<br>(mm) | 폭-두께<br>± 5% | Design | 전압<br>(A) | 길이<br>(L) | B 1 | L1  | H  | Catalog<br>Number |
|------------|--------------|--------|-----------|-----------|-----|-----|----|-------------------|
| 10         | 15×1         | 8.1    | 60        | 200       | 20  | 160 | 8  | KRG 424           |
| 16         | 20×1.5       | 14.1   | 88        | 250       | 25  | 200 | 11 | KRG 425           |
| 25         | 24×2         | 21.7   | 115       | 250       | 25  | 200 | 11 | KRG 426           |
| 35         | 30×2.5       | 37.9   | 162       | 250       | 30  | 190 | 11 | KRG 427           |
| 70         | 35×3         | 59.6   | 217       | 300       | 40  | 220 | 11 | KRG 428           |

### ■ EARTH TRANSIENT PROTECTOR (전위차해소기)



| Catalog Number | Standard  |
|----------------|-----------|
| KRG 510        | J.PROSTER |

### ■ EARTH REEL (접지릴)



| Catalog Number | Type       |
|----------------|------------|
| KRG 513        | 10SQ X 10M |

### ■ EARTH REEL (ALARM TYPE)



#### ▶ Product Description

Ground Verification Monitor Introduction&colon;

It is intended to use in the petrochemical&comma; pharmaceutical & comma; paint and coating industries in which static discharging is needed&period; It comprises controller&comma; static grounding clamp and storage point&period; Connecting with the control system&comma; it can monitor the grounding status&period; When the resistance exceeds 60ohms&comma; it gives out alarm and outputs on-off signal to the automatic control system to disconnect the third party system from the control system&period;

#### ▶ Technical Parameters

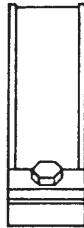
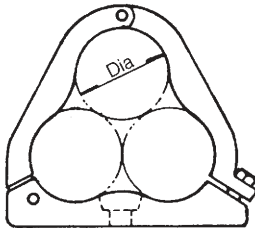
1&period; Explosion-protection grade&colon; Exdia II BT4  
2&period; Power supply&colon; 220VAC or comply to the local standard  
3&period; Output signal&colon; 8A&comma; 30VDC or 8A&comma; 250VAC  
4&period; Working current&colon; < 45mA  
5&period; Monitoring set point&colon; < 60&ohm;&period;  
ATEX CERTIFICATE PENDING

## ■ CABLE TREFOIL CLEAT

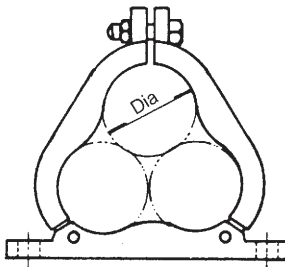
▶ Material : Aluminum Alloy



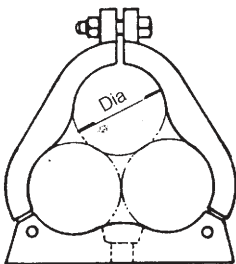
Type A



Type B



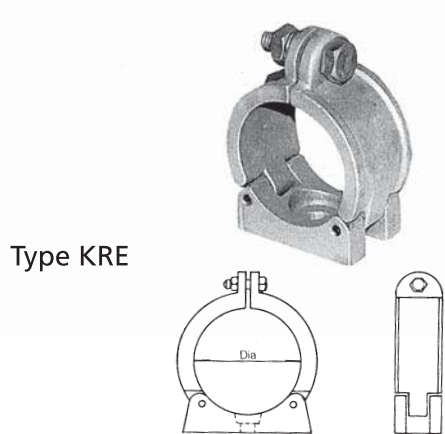
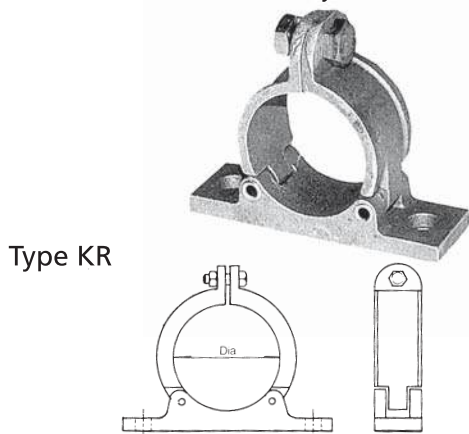
Type C



| Catalog Number |        |        | Cable Dia (mm) |     |
|----------------|--------|--------|----------------|-----|
| A Type         | B Type | C Type | Min            | Max |
| 100A           | 100B   | 100C   | 21             | 23  |
| 101A           | 101B   | 101C   | 24             | 25  |
| 102A           | 102B   | 102C   | 25             | 27  |
| 103A           | 103B   | 103C   | 27             | 28  |
| 104A           | 104B   | 104C   | 28             | 30  |
| 105A           | 105B   | 105C   | 30             | 32  |
| 106A           | 106B   | 106C   | 32             | 34  |
| 107A           | 107B   | 107C   | 34             | 35  |
| 108A           | 108B   | 108C   | 35             | 36  |
| 109A           | 109B   | 109C   | 36             | 38  |
| 110A           | 110B   | 110C   | 38             | 40  |
| 111A           | 111B   | 111C   | 40             | 41  |
| 112A           | 112B   | 112C   | 41             | 43  |
| 113A           | 113B   | 113C   | 43             | 44  |
| 114A           | 114B   | 114C   | 44             | 46  |
| 115A           | 115B   | 115C   | 46             | 48  |
| 116A           | 116B   | 116C   | 48             | 49  |
| 117A           | 117B   | 117C   | 49             | 51  |
| 118A           | 118B   | 118C   | 51             | 53  |
| 119A           | 119B   | 119C   | 53             | 54  |
| 120A           | 120B   | 120C   | 54             | 55  |
| 121A           | 121B   | 121C   | 55             | 57  |
| 122A           | 122B   | 122C   | 57             | 59  |
| 123A           | 123B   | 123C   | 59             | 60  |
| 124A           | 124B   | 124C   | 60             | 62  |
| 125A           | 125B   | 125C   | 62             | 63  |
| 126A           | 126B   | 126C   | 63             | 65  |
| 127A           | 127B   | 127C   | 66             | 67  |
| 128A           | 128B   | 128C   | 68             | 70  |
| 129A           | 129B   | 129C   | 71             | 72  |
| 130A           | 130B   | 130C   | 73             | 75  |
| 131A           | 131B   | 131C   | 76             | 77  |
| 132A           | 132B   | 132C   | 78             | 80  |

## ■ SINGLE WAY CABLE CLEAT

► Material : Aluminum Alloy



| Catalog Number | Cable Dia (mm) |     |
|----------------|----------------|-----|
|                | Min            | Max |
| KR-95          | 21             | 23  |
| KR-96          | 24             | 26  |
| KR-97          | 28             | 29  |
| KR-98          | 30             | 32  |
| KR-99          | 33             | 35  |
| KR-01          | 36             | 38  |
| KR-02          | 38             | 40  |
| KR-03          | 40             | 41  |
| KR-04          | 41             | 43  |
| KR-05          | 43             | 44  |
| KR-06          | 44             | 46  |
| KR-07          | 46             | 48  |
| KR-08          | 48             | 49  |
| KR-09          | 49             | 51  |
| KR-10          | 51             | 53  |
| KR-11          | 53             | 54  |
| KR-12          | 54             | 56  |
| KR-13          | 56             | 57  |
| KR-14          | 57             | 58  |
| KR-15          | 59             | 60  |
| KR-16          | 60             | 62  |
| KR-17          | 62             | 64  |
| KR-18          | 64             | 65  |
| KR-19          | 65             | 67  |
| KR-20          | 67             | 68  |
| KR-21          | 68             | 70  |
| KR-22          | 70             | 71  |
| KR-23          | 71             | 73  |
| KR-24          | 73             | 75  |
| KR-25          | 75             | 76  |

| Catalog Number | Cable Dia (mm) |     |
|----------------|----------------|-----|
|                | Min            | Max |
| KR-26          | 77             | 78  |
| KR-27          | 79             | 81  |
| KR-28          | 82             | 83  |
| KR-29          | 84             | 86  |
| KR-30          | 87             | 88  |
| KR-31          | 89             | 91  |
| KR-32          | 92             | 93  |
| KR-33          | 94             | 96  |
| KR-34          | 97             | 98  |
| KR-35          | 99             | 101 |
| KR-36          | 102            | 104 |
| KR-37          | 105            | 106 |
| KR-38          | 107            | 109 |
| KR-39          | 110            | 111 |
| KR-40          | 112            | 114 |
| KR-41          | 115            | 116 |
| KR-42          | 117            | 119 |
| KR-43          | 120            | 121 |
| KR-44          | 122            | 124 |
| KR-45          | 125            | 126 |
| KR-46          | 127            | 129 |
| KR-47          | 130            | 131 |
| KR-48          | 132            | 134 |
| KR-49          | 135            | 136 |
| KR-50          | 137            | 139 |
| KR-51          | 139            | 140 |
| KR-52          | 141            | 142 |
| KR-53          | 143            | 144 |
| KR-54          | 144            | 145 |
| KR-55          | 146            | 148 |

| Catalog Number | Cable Dia (mm) |     |
|----------------|----------------|-----|
|                | Min            | Max |
| KRE-95         | 21             | 23  |
| KRE-96         | 24             | 26  |
| KRE-97         | 28             | 29  |
| KRE-98         | 30             | 32  |
| KRE-99         | 33             | 35  |
| KRE-01         | 36             | 38  |
| KRE-02         | 38             | 40  |
| KRE-03         | 40             | 41  |
| KRE-04         | 41             | 43  |
| KRE-05         | 43             | 44  |
| KRE-06         | 44             | 46  |
| KRE-07         | 46             | 48  |
| KRE-08         | 48             | 49  |
| KRE-09         | 49             | 51  |
| KRE-10         | 51             | 53  |
| KRE-11         | 53             | 54  |
| KRE-12         | 54             | 56  |
| KRE-13         | 56             | 57  |
| KRE-14         | 57             | 58  |
| KRE-15         | 59             | 60  |
| KRE-16         | 60             | 62  |
| KRE-17         | 62             | 64  |
| KRE-18         | 64             | 65  |
| KRE-19         | 65             | 67  |
| KRE-20         | 67             | 68  |
| KRE-21         | 68             | 70  |
| KRE-22         | 70             | 71  |
| KRE-23         | 71             | 73  |
| KRE-24         | 73             | 75  |
| KRE-25         | 75             | 76  |

| Catalog Number | Cable Dia (mm) |     |
|----------------|----------------|-----|
|                | Min            | Max |
| KRE-26         | 77             | 78  |
| KRE-27         | 79             | 81  |
| KRE-28         | 82             | 83  |
| KRE-29         | 84             | 86  |
| KRE-30         | 87             | 88  |
| KRE-31         | 89             | 91  |
| KRE-32         | 92             | 93  |
| KRE-33         | 94             | 96  |
| KRE-34         | 97             | 98  |
| KRE-35         | 99             | 101 |
| KRE-36         | 102            | 104 |
| KRE-37         | 105            | 106 |
| KRE-38         | 107            | 109 |
| KRE-39         | 110            | 111 |
| KRE-40         | 112            | 114 |
| KRE-41         | 115            | 116 |
| KRE-42         | 117            | 119 |
| KRE-43         | 120            | 121 |
| KRE-44         | 122            | 124 |
| KRE-45         | 125            | 126 |
| KRE-46         | 127            | 129 |
| KRE-47         | 130            | 131 |
| KRE-48         | 132            | 134 |
| KRE-49         | 135            | 136 |
| KRE-50         | 137            | 139 |
| KRE-51         | 139            | 140 |
| KRE-52         | 141            | 142 |
| KRE-53         | 143            | 144 |
| KRE-54         | 144            | 145 |
| KRE-55         | 146            | 148 |

## ■ CABLE TREFOIL CLEAT

► Material : Stainless steel



| Part No.   | Cable Range(mm) |          | Dimensions(mm) |     |
|------------|-----------------|----------|----------------|-----|
|            | Min. Dia        | Max. Dia | H              | W   |
| V-ST1323   | 13              | 23       | 74             | 66  |
| V-ST2125   | 21              | 25       | 77             | 70  |
| V-ST2329   | 23              | 29       | 81             | 78  |
| V-ST2531   | 25              | 31       | 84             | 81  |
| V-ST2733   | 27              | 33       | 86             | 83  |
| V-ST2935   | 29              | 35       | 90             | 89  |
| V-ST3238   | 32              | 38       | 94             | 95  |
| V-ST3541   | 35              | 41       | 98             | 100 |
| V-ST3844   | 38              | 44       | 101            | 104 |
| V-ST4248   | 42              | 49       | 105            | 111 |
| V-ST4551   | 45              | 51       | 109            | 117 |
| V-ST4753   | 47              | 53       | 111            | 120 |
| V-ST4955   | 49              | 55       | 114            | 124 |
| V-ST5157   | 51              | 57       | 116            | 127 |
| V-ST5359   | 53              | 59       | 119            | 133 |
| V-ST5561   | 55              | 61       | 127            | 137 |
| V-ST5763   | 57              | 63       | 126            | 140 |
| V-ST5965   | 59              | 65       | 128            | 144 |
| V-ST6167   | 61              | 67       | 132            | 147 |
| V-ST6369   | 63              | 69       | 136            | 150 |
| V-ST6571   | 65              | 71       | 140            | 153 |
| V-ST6773   | 67              | 73       | 143            | 156 |
| V-ST6975   | 69              | 75       | 147            | 160 |
| V-ST7177   | 71              | 77       | 151            | 163 |
| V-ST7379   | 73              | 79       | 154            | 166 |
| V-ST7581   | 75              | 81       | 158            | 169 |
| V-ST7783   | 77              | 83       | 161            | 173 |
| V-ST7985   | 79              | 85       | 164            | 176 |
| V-ST8187   | 81              | 87       | 169            | 179 |
| V-ST8389   | 83              | 89       | 173            | 182 |
| V-ST8896   | 88              | 96       | 181            | 192 |
| V ST06103  | 96              | 103      | 190            | 201 |
| V-ST103111 | 103             | 111      | 199            | 204 |
| V-ST111119 | 111             | 119      | 208            | 213 |
| V-ST119128 | 119             | 128      | 217            | 221 |

## ■ ELECTRICAL SAFETY SIGN (경고, 위험 테이프)

### ▶ Electrical Hazard Warning Roll Tape



- 빨간색 바탕에 검은색 글씨나 노란색 바탕에 검은무늬 또는 글씨를 표시하며 지하에 위험물이 매립되어 있다는 것을 나타내 줌.
- 실내나 실외에서 간편하게 사용할 수 있음.
- 기성 제품외 다른 규격은 귀사의 요구대로 제작 가능함.
- 재질 : Vinyl

| Cat No.       | 폭   | 두께  | M   |
|---------------|-----|-----|-----|
| KRG 516 (전기용) | 200 | 0.1 | 200 |
| KRG 517 (전기용) | 400 |     |     |
| KRG 518 (통신용) | 300 |     | 250 |

## MEMO

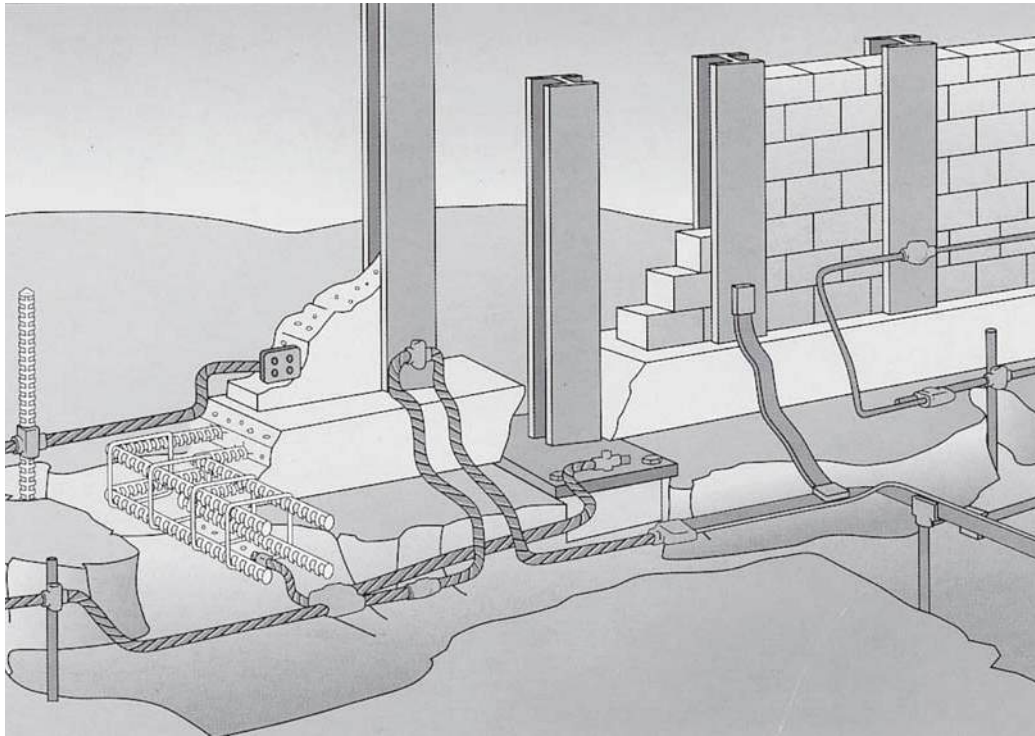
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# THERMIT WELDING MATERIALS

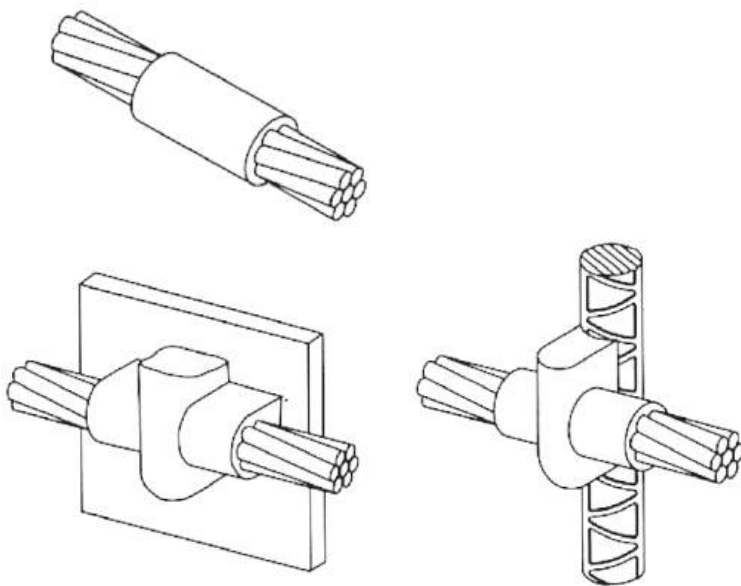
## THERMIT WELDING MATERIALS

|                                                            |    |
|------------------------------------------------------------|----|
| THERMIT WELDING MATERIAL .....                             | 48 |
| THERMIT WELD (용접원리) .....                                  | 49 |
| THERMIT WELD METAL 포장 .....                                | 51 |
| THERMIT WELDING METHOD .....                               | 52 |
| HANDLE CLAMP / FLINT GUN / MOLD BRUSH / MOLD CLEANER ..... | 53 |
| H TYPE / HT TYPE .....                                     | 54 |
| HX TYPE .....                                              | 55 |
| HXU TYPE .....                                             | 57 |
| HPZ TYPE .....                                             | 58 |
| HP TYPE .....                                              | 59 |
| HGR TYPE .....                                             | 60 |
| HGT TYPE .....                                             | 61 |
| HCHS TYPE / HCHST TYPE .....                               | 62 |
| ADVS TYPE / VCVS TYPE .....                                | 63 |
| HCVS TYPE / VOCVS TYPE .....                               | 64 |
| HCVR TYPE .....                                            | 65 |
| HCHRT TYPE .....                                           | 66 |
| HCHRZ TYPE .....                                           | 67 |
| HCVRX TYPE .....                                           | 68 |

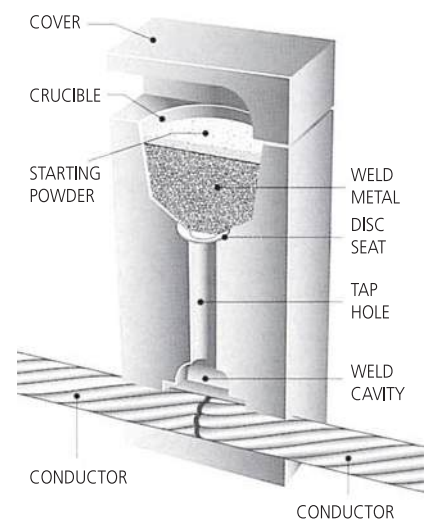
## ■ THERMIT WELDING MATERIAL



### ► THERMIT WELD



### ► THE THERMIT WELD MOULD

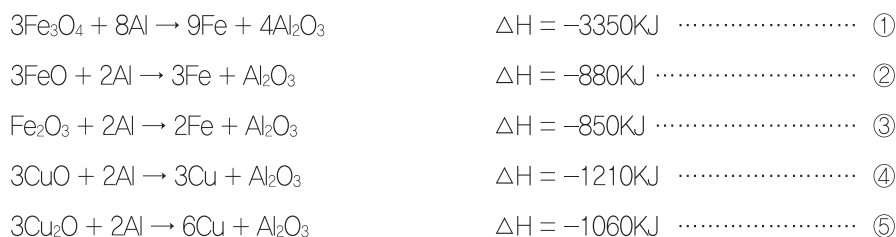


## THERMIT WELD

### (용 접 원 리)

THERMIT WELD의 용접방법은 1898년 독일의 GOLDSCHMIT가 발표한 금속알루미늄의 산화열 환원반응 (ALUMINOTHERMIC REDUCTION)을 응용한 제품이다.

즉, 용접재를 산화물로하고 알루미늄을 금속으로하여 이들을 적정비로 혼합하여 가열시켜주면 자체의 산화환원반응이 일어나 알루미늄은 산화물의 SLAG로 그리고 산화금속은 환원된 금속용탕이되어 금속간의 용접이 이루어지게되며 그 때의 반응은 다음과 같다.



상기한 반응식에서 철과 동 산화물이 금속알루미늄으로 환원되면 강력한 발열반응이 순간적(3~5초)으로 일어나 용탕이 되어 흑연몰드안에서 동과동(COPPER TO COPPER), 동과철(COPPER TO IRON)의 용접을 가능하게 한다.

동재간, 동과 철재간의 용접에 있어서는 재료의 고정과 용접의 효용성을 높이기위해 재료의 형태에 따라 흑연몰드를 개발, 활용하게 되었다, 우선 선재간의 용접방법을 일례로 그림 1과 같이 흑연으로 이루어진 흑연몰드(최소 50회이상 재반복 사용가능)에 선재를 장치하고 용접에 용기밑에 금속박편을 놓아 용접재가 흐르지 않도록하여 용접재와 점화재를 정착시킨다.

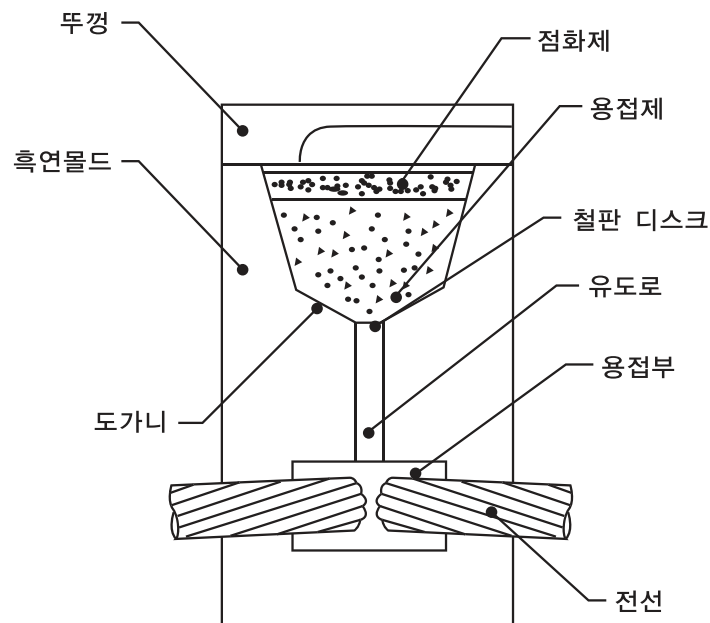
점화재에 불을 붙이면 산물의 재질에 따라 ①~⑤식에 의해 자발적인 산화반응이 거의 순간적으로 일어나 용탕과 슬래그 층으로 형성되고 용탕은 하부의 금속박편을 녹이고 선재의 공간으로 흘러내려 그림2와 같은 형태로 용접이 이루어진다.

용접하고자하는 재료의 형태에 따라서 그에 적절한 흑연몰드(카다로그상의 MOLD NO. 참조)와 용접재로 전선과 전선간은 물론 전기적 연결이 필요한 재료의 형태에 따라 손쉽게 연결할 수 있으며 그 연결성도 매우 양호하다.

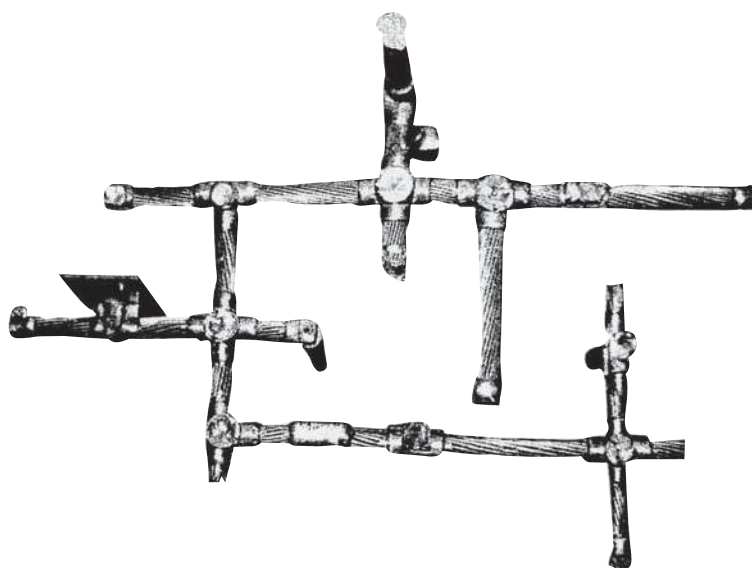
산업의 발전은 제품의 품질향상과 생산성향상을 요구하고 있고 또 수요자의 편의욕구만족이 요구되고 있다. 그간에는 전기배전이나 접지공사에서 압착법이 이용되어 왔으나 이방법은 시공이 불편하며 인력수요가 많아 비용증가는 물론 생산성이 떨어져 시공이 간편하고 시공비가 저렴하며 기능이 우수한 방법을 필요로 하게되었고 그에 따라 최근에는 테르밋 용접법이 이용되고 있다. 이방법은 알루미늄 산화반응을 이용한 테르밋 용접법으로 보다 손쉽고 저렴하게 우수한 전기적 연결을 행할 수 있다.

이의 수요처는 건물의 전파방지 또는 누전시의 안전장치로 시행되는 접지를 위한 전기적연결에 많이 활용되고 있고 발전소, 송, 변전소의 접지에 많이 응용되고 있고 우리나라는 건축물의 접지연결에만 일부활용되고 있으며 근래에 와서 전철의 신호회로와 전기연결용으로 채용되기 시작했다.

앞으로 이 테르밋 용접재는 시공이 쉽고 연결성이 매우 우수하기 때문에 건축물, 대형설비, 송전탑(전주)등의 접지 및 전기적연결을 위한 수요가 증대될 것이며 전철이나 고속 전철등의 신호, 통신용 회로연결에도 그활용도가 크게 증진되고 있다.



[그림1]



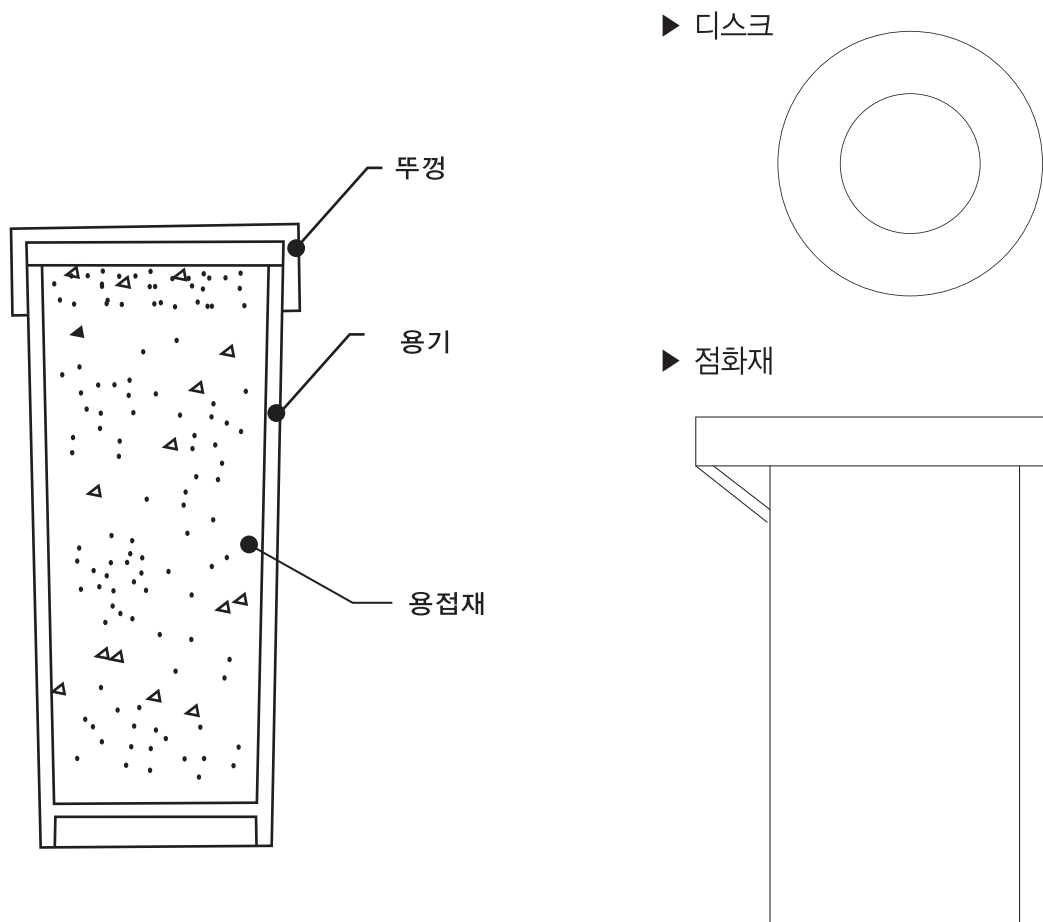
[그림2]

## THERMIT WELD METAL 포장

THERMIT WELD는 수분 방지용 플라스틱 용기에 포장되어 있으며 크기와 무게(g)은 각 덮개 및 용기바닥에 표시되어 있다. 용기의 크기는 각 무게별로 별도 크기로 포장이 이루어진다.

THERMIT WELD는 크게 두가지로 구분되며 하얀색 용기는 용접용 METAL이고 빨간색 용기는 초기 점화재로 구분된다.

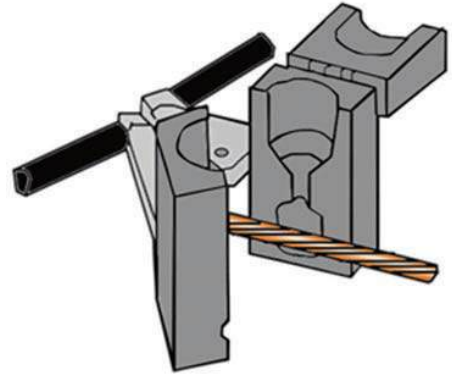
플라스틱용기에 포장된 목적은 공기중의 습기와 수분으로부터 보호하기 위함이며 이는 항상 건조한 상태임을 보여주는 것이다. 또한, 주석으로 도금된 금속 디스크는 각 무게별로 포장되어있는 숫자만큼 비닐포장지에 포장되어 메탈과 함께 포장되어 있다.



# THERMIT WELDING METHOD

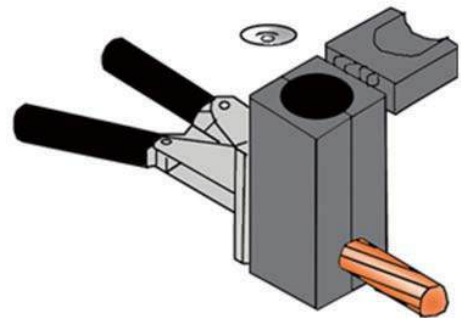
## Step 1

Clean the conductors to be welded. Place the cables into position in the mold.



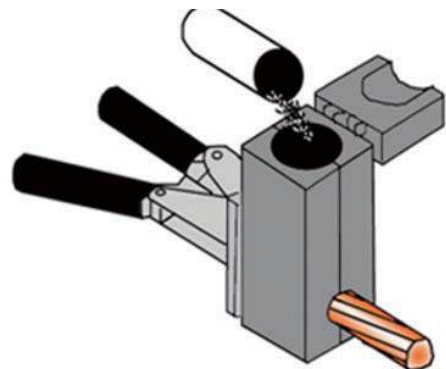
## Step 2

Close the handle clamp to lock the mold. Place the disk into position in the mold.



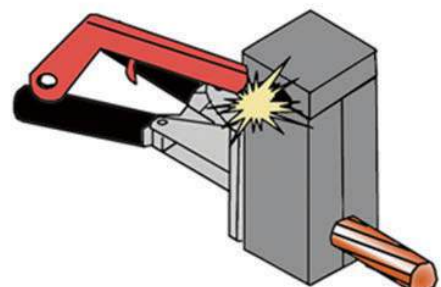
## Step 3

Place the weld metal into the mold. Sprinkle the starting powder over the weld metal and on the lip of the mold.



## Step 4

Close the cover and ignite using flint ignitor. Open the mold after the metal solidifies. Remove the slag from the mold before making the next connection.



## WELD METAL



| Standard Weld Metal | Weight(kg) | Cartridges Per Box |
|---------------------|------------|--------------------|
| #15                 | 0.015      | 20                 |
| #32                 | 0.032      | 20                 |
| #45                 | 0.045      | 20                 |
| #65                 | 0.065      | 15                 |
| #90                 | 0.090      | 10                 |
| #115                | 0.115      | 10                 |
| #150                | 0.150      | 10                 |
| #200                | 0.200      | 5                  |
| #250                | 0.250      | 5                  |

## HANDLE CLAMP



| Catalog Number | Size   |
|----------------|--------|
| KWG 113        | Middle |
| KWG 114        | Large  |

## FLINT GUN



| Catalog Number |
|----------------|
| KWG 115        |

## MOLD BRUSH



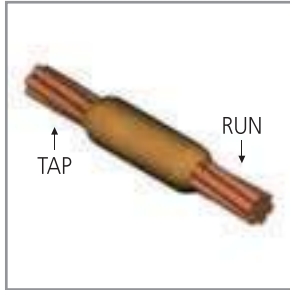
| Catalog Number |
|----------------|
| KWG 116        |

## MOLD CLEANER



| Catalog Number |
|----------------|
| KWG 117        |

## ■ H TYPE



H형은 동일 종류의 전선을 서로 수평으로 용접(접속) 시키는데 적용된다. 용접 가능한 표준형은 우측표와 같이 그 외의 것은 당사에 문의하여 기술적 자문을 받아 주문을 요망합니다.

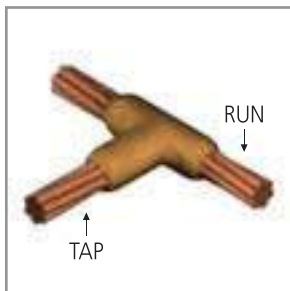
〈물흐름방지 - WATER STOP〉

H형의 용접은 연선으로 이루어진 전선의 모세관 현상에 의한 물의 흐름을 차단시켜주므로 지하에 매설 후 지상으로 혹은 낮은 지면의 콘크리트 벽을 따라 지나가는 전선 매설시에 발생될 수 있는 물 흐름을 차단시켜준다.

- ※ 1. CABLE SIZE는 KS C IEC 60228(절연 케이블도체)를 표준선으로 한 것임.
- 2. 동봉용은 몰드번호에 "S"자를 첨가

| Cable to Cable |          |              |                |
|----------------|----------|--------------|----------------|
| Cable Size     | Mold NO. | Handle Clamp | Weld Metal NO. |
| 16             | H 16     | M            | #32            |
| 25             | H 25     | M            | #32            |
| 35             | H 35     | M            | #45            |
| 50             | H 50     | M            | #65            |
| 70             | H 70     | M            | #90            |
| 95             | H 95     | M            | #90            |
| 120            | H 120    | M            | #115           |
| 150            | H 150    | M            | #115           |
| 185            | H 185    | M            | #150           |
| 240            | H 240    | M            | #200           |
| 300            | H 300    | M            | #250           |
| 500            | H 500    | L            | #200*2         |

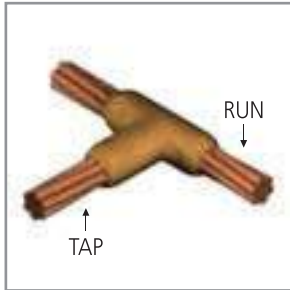
## ■ HT TYPE



HT형은 수평상태의 주선(RUN)과 간선(TAP)을 용접하는데 적용된다. 표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

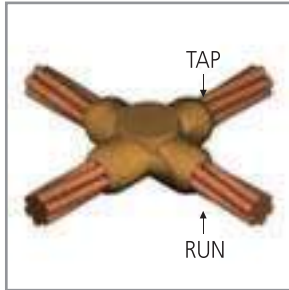
- ※ 1. CABLE SIZE는 KS C IEC 60228(절연 케이블도체)를 표준선으로 한 것임.
- 2. 동봉용은 몰드번호에 "S"자를 첨가

| Cable to Cable |          |         |              |                |
|----------------|----------|---------|--------------|----------------|
| Cable Size     | Mold NO. |         | Handle Clamp | Weld Metal NO. |
|                | RUN      | TAP     |              |                |
| 25             | 25       | HT 2525 | M            | #32            |
| 35             | 35       | HT 3535 | M            | #45            |
|                | 25       | HT 3525 |              |                |
| 50             | 50       | HT 5050 | M            | #90            |
|                | 35       | HT 5035 |              | #65            |
|                | 25       | HT 5025 |              | #45            |
| 70             | 70       | HT 7070 | M            | #115           |
|                | 50       | HT 7050 |              | #90            |
|                | 35       | HT 7035 |              | #65            |
|                | 25       | HT 7025 |              | #65            |
| 95             | 95       | HT 9595 | M            | #150           |
|                | 70       | HT 9570 |              | #115           |
|                | 50       | HT 9550 |              | #90            |
|                | 35       | HT 9535 |              | #90            |
|                | 25       | HT 9525 |              | #90            |



|     |     |           |   |        |
|-----|-----|-----------|---|--------|
| 120 | 120 | HT 120120 | M | #150   |
|     | 95  | HT 12095  |   | #150   |
|     | 70  | HT 12070  |   | #115   |
|     | 50  | HT 12050  |   | #90    |
|     | 35  | HT 12035  |   | #90    |
| 150 | 150 | HT 150150 | M | #200   |
|     | 120 | HT 150120 |   | #150   |
|     | 95  | HT 15095  |   | #150   |
|     | 70  | HT 15070  |   | #115   |
|     | 50  | HT 15050  |   | #115   |
| 185 | 35  | HT 15035  |   | #115   |
| 185 | 185 | HT 185185 | M | #250   |
|     | 150 | HT 185150 |   | #200   |
|     | 120 | HT 185120 |   | #200   |
|     | 95  | HT 18595  |   | #150   |
|     | 70  | HT 18570  |   | #150   |
|     | 50  | HT 18550  |   | #115   |
|     | 35  | HT 18535  |   | #115   |
| 240 | 240 | HT 240240 | L | #150*2 |
|     | 185 | HT 240185 | M | #250   |
|     | 150 | HT 240150 | M | #250   |
|     | 120 | HT 240120 | M | #200   |
|     | 95  | HT 24095  | M | #200   |
|     | 70  | HT 24070  | M | #150   |
|     | 50  | HT 24050  | M | #115   |
|     | 35  | HT 24035  | M | #115   |
| 300 | 300 | HT 300300 | L | #200*2 |
|     | 240 | HT 300240 | L | #200*2 |
|     | 185 | HT 300185 | M | #250   |
|     | 150 | HT 300150 | M | #250   |
|     | 120 | HT 300120 | M | #200   |
|     | 95  | HT 30095  | M | #200   |
|     | 70  | HT 30070  | M | #200   |
|     | 50  | HT 30050  | M | #150   |
| 500 | 500 | HT 500500 | L | #250*2 |
|     | 300 | HT 500300 | L | #250*2 |
|     | 240 | HT 500240 | L | #200*2 |
|     | 185 | HT 500185 | L | #200*2 |
|     | 150 | HT 500150 | L | #150*2 |
|     | 120 | HT 500120 | M | #250   |
|     | 95  | HT 50095  | M | #250   |
|     | 70  | HT 50070  | M | #200   |
|     | 50  | HT 50050  | M | #200   |

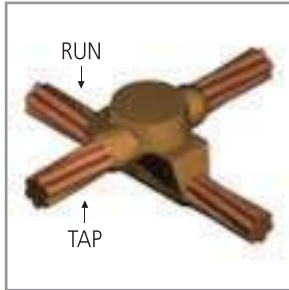
## ■ HX TYPE



HX형은 수평상태의 주선(RUN)과 수평상태의 간선(TAP)을 X자형으로 용접하는데 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |     |           |              |                |
|----------------|-----|-----------|--------------|----------------|
| Cable Size     |     | Mold NO.  | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |           |              |                |
| 25             | 25  | HT 2525   | M            | #45            |
| 35             | 35  | HX 3535   | M            | #65            |
|                | 25  | HX 3525   |              | #65            |
| 50             | 50  | HX 5050   | M            | #90            |
|                | 35  | HX 5035   |              | #90            |
|                | 25  | HX 5025   |              | #90            |
| 70             | 70  | HX 7070   | M            | #150           |
|                | 50  | HX 7050   |              | #115           |
|                | 35  | HX 7035   |              | #115           |
|                | 25  | HX 7025   |              | #115           |
| 95             | 95  | HX 9595   | M            | #200           |
|                | 70  | HX 9570   |              | #150           |
|                | 50  | HX 9550   |              | #150           |
|                | 35  | HX 9535   |              | #115           |
| 120            | 120 | HX 120120 | M            | #200           |
|                | 95  | HX 12095  |              | #200           |
|                | 70  | HX 12070  |              | #150           |
|                | 50  | HX 12050  |              | #150           |
|                | 35  | HX 12035  |              | #115           |
| 150            | 150 | HX 150150 | M            | #250           |
|                | 120 | HX 150120 |              | #250           |
|                | 95  | HX 15095  |              | #200           |
|                | 70  | HX 15070  |              | #200           |
|                | 50  | HX 15050  |              | #150           |
|                | 35  | HX 15035  |              | #115           |
| 185            | 185 | HX 185185 | M            | #250           |
|                | 150 | HX 185150 |              | #250           |
|                | 120 | HX 185120 |              | #250           |
|                | 95  | HX 18595  |              | #200           |
|                | 70  | HX 18570  |              | #200           |
|                | 50  | HX 18550  |              | #200           |
|                | 35  | HX 18535  |              | #150           |
| 240            | 240 | HX 240240 | L            | #250*2         |
|                | 185 | HX 240185 | L            | #200*2         |
|                | 150 | HX 240150 | L            | #220*2         |
|                | 120 | HX 240120 | L            | #150*2         |
|                | 95  | HX 24095  | L            | #150*2         |
|                | 70  | HX 24070  | M            | #250           |
|                | 50  | HX 24050  | M            | #250           |
|                | 35  | HX 24035  | M            | #200           |
|                | 300 | HX 300300 | L            | #250*3         |

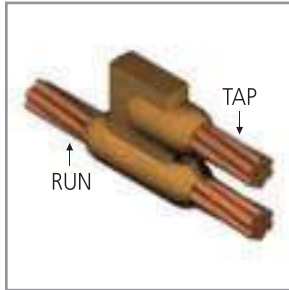
## ■ HXU TYPE



HXU형은 연속된 수평의 전선이 직각으로 교차하면서 용접시킬때 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |     |            |              |                |
|----------------|-----|------------|--------------|----------------|
| Cable Size     |     | Mold NO.   | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |            |              |                |
| 25             | 25  | HXU 2525   | M            | #65            |
| 35             | 35  | HXU 3535   | M            | #115           |
|                | 25  | HXU 3525   |              | #90            |
| 50             | 50  | HXU 5050   | M            | #150           |
|                | 35  | HXU 5035   |              | #150           |
|                | 25  | HXU 5025   |              | #115           |
| 70             | 70  | HXU 7070   | M            | #200           |
|                | 50  | HXU 7050   |              | #200           |
|                | 35  | HXU 7035   |              | #150           |
| 95             | 95  | HXU 9595   | M            | #250           |
|                | 70  | HXU 9570   |              | #200           |
|                | 50  | HXU 9550   |              | #200           |
|                | 35  | HXU 9535   |              | #150           |
| 120            | 120 | HXU 120120 | L            | #150*2         |
|                | 95  | HXU 12095  | L            | #150*2         |
|                | 70  | HXU 12070  | M            | #250           |
|                | 50  | HXU 12050  | M            | #250           |
|                | 35  | HXU 12035  | M            | #150           |
| 150            | 150 | HXU 150150 | L            | #200*2         |
|                | 120 | HXU 150120 | L            | #200*2         |
|                | 95  | HXU 15095  | L            | #150*2         |
|                | 70  | HXU 15070  | M            | #250           |
|                | 50  | HXU 15050  | M            | #250           |
| 185            | 185 | HXU 185185 | L            | #250*2         |
|                | 150 | HXU 185150 | L            | #250*2         |
|                | 120 | HXU 185120 | L            | #250*2         |
|                | 95  | HXU 18595  | L            | #200*2         |
|                | 70  | HXU 18570  | L            | #150*2         |
|                | 50  | HXU 18550  | M            | #250           |
| 240            | 240 | HXU 240240 | L            | #250*3         |
|                | 185 | HXU 240185 |              | #200*3         |
|                | 150 | HXU 240150 |              | #200*3         |
|                | 120 | HXU 240120 |              | #250*2         |
|                | 95  | HXU 24095  |              | #250*2         |
|                | 70  | HXU 24070  |              | #200*2         |
|                | 50  | HXU 24050  |              | #150*2         |

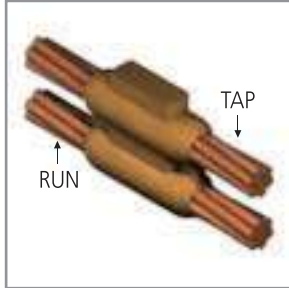
## ■ HPZ TYPE



HPZ형은 한쪽은 평행한 수평수선(RUN)과 간선(TAP) 형태의 전선을 용접하는데 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |     |          |              |                |
|----------------|-----|----------|--------------|----------------|
| Cable Size     |     | Mold NO. | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |          |              |                |
| 16             | 16  | HPZ 1616 | M            | #32            |
| 25             | 25  | HPZ 2525 | M            | #45            |
|                | 16  | HPZ 2516 |              | #45            |
| 35             | 35  | HPZ 3535 | M            | #65            |
|                | 25  | HPZ 3525 |              | #65            |
|                | 16  | HPZ 3516 |              | #45            |
| 50             | 50  | HPZ 5050 | M            | #90            |
|                | 35  | HPZ 5035 |              | #65            |
|                | 25  | HPZ 5025 |              | #65            |
|                | 16  | HPZ 5016 |              | #65            |
| 70             | 70  | HPZ 7070 | M            | #115           |
|                | 50  | HPZ 7050 |              | #115           |
|                | 35  | HPZ 7035 |              | #90            |
|                | 25  | HPZ 7025 |              | #90            |
|                | 16  | HPZ 7016 |              | #65            |
| 95             | 95  | HPZ 9595 | M            | #150           |
|                | 70  | HPZ 9570 |              | #115           |
|                | 50  | HPZ 9550 |              | #115           |
|                | 35  | HPZ 9535 |              | #115           |
|                | 25  | HPZ 9525 |              | #90            |
|                | 16  | HPZ 9516 |              | #90            |

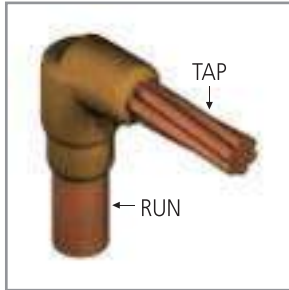
## ■ HP TYPE



HP형은 주선(RUN)과 간선(TAP)이 상하로 평행하게 용접하는데 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |     |           |              |                |
|----------------|-----|-----------|--------------|----------------|
| Cable Size     |     | Mold NO.  | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |           |              |                |
| 25             | 25  | HP 2525   | M            | #45            |
| 35             | 35  | HP 3535   | M            | #65            |
|                | 25  | HP 3525   |              | #65            |
| 50             | 50  | HP 5050   | M            | #90            |
|                | 35  | HP 5035   |              | #65            |
|                | 25  | HP 5025   |              | #65            |
| 70             | 70  | HP 7070   | M            | #150           |
|                | 50  | HP 7050   |              | #115           |
|                | 35  | HP 7035   |              | #90            |
| 95             | 95  | HP 9595   | M            | #200           |
|                | 70  | HP 9570   |              | #150           |
|                | 50  | HP 9550   |              | #150           |
|                | 35  | HP 9535   |              | #150           |
| 120            | 120 | HP 120120 | M            | #250           |
|                | 95  | HP 12095  |              | #200           |
|                | 70  | HP 12070  |              | #150           |
|                | 50  | HP 12050  |              | #150           |
|                | 35  | HP 12035  |              | #150           |
| 150            | 150 | HP 150150 | L            | #150*2         |
|                | 120 | HP 150120 | M            | #250           |
|                | 95  | HP 15095  | M            | #200           |
|                | 70  | HP 15070  | M            | #150           |
| 185            | 185 | HP 185185 | L            | #150*2         |
|                | 150 | HP 185150 | L            | #150*2         |
|                | 120 | HP 185120 | M            | #250           |
|                | 95  | HP 18595  | M            | #200           |
|                | 70  | HP 18570  | M            | #150           |
| 240            | 240 | HP 240240 | L            | #200*2         |
|                | 185 | HP 240185 | L            | #150*2         |
|                | 150 | HP 240150 | L            | #150*2         |
|                | 120 | HP 240120 | M            | #250           |
|                | 95  | HP 24095  | M            | #200           |
|                | 70  | HP 24070  | M            | #150           |
| 300            | 300 | HP 300300 | L            | #250*3         |
|                | 240 | HP 300240 | L            | #250*2         |
|                | 185 | HP 300185 | L            | #200*2         |
|                | 150 | HP 300150 | L            | #150*2         |
|                | 120 | HP 300120 | L            | #150*2         |
|                | 95  | HP 30095  | M            | #250           |
|                | 70  | HP 30070  | M            | #250           |
| 500            | 500 | HP 500500 | L            | #250*4         |
|                | 300 | HP 500300 | L            | #250*3         |
|                | 240 | HP 500240 | L            | #250*2         |
|                | 185 | HP 500185 | L            | #150*2         |
|                | 150 | HP 500150 | L            | #150*2         |
|                | 120 | HP 500120 | M            | #250           |
|                | 95  | HP 50095  | M            | #250           |
|                | 70  | HP 50070  | M            | #250           |

## ■ HGR TYPE



HGR형은 수직 접지봉 끝에 수평 접지 전선을 용접하는데 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

※ A = 1/3", B = 5/8"  
C = 3/4", D = 1"

| Cable to Cable |     |          |              |                |
|----------------|-----|----------|--------------|----------------|
| Cable Size     |     | Mold NO. | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |          |              |                |
| 1/2 "          | 50  | HGR 50A  | M            | #90            |
|                | 70  | HGR 70A  |              | #90            |
|                | 95  | HGR 95A  |              | #90            |
|                | 120 | HGR 120A |              | #90            |
|                | 150 | HGR 150A |              | #115           |
| 5/8 "          | 50  | HGR 50B  | M            | #90            |
|                | 70  | HGR 70B  |              | #90            |
|                | 95  | HGR 95B  |              | #90            |
|                | 120 | HGR 120B |              | #90            |
|                | 150 | HGR 150B |              | #115           |
|                | 185 | HGR 185B |              | #115           |
|                | 240 | HGR 240B |              | #150           |
| 3/4 "          | 50  | HGR 50C  | M            | #90            |
|                | 70  | HGR 70C  |              | #90            |
|                | 95  | HGR 95C  |              | #90            |
|                | 120 | HGR 120C |              | #90            |
|                | 150 | HGR 150C |              | #115           |
|                | 185 | HGR 185C |              | #115           |
|                | 240 | HGR 240C |              | #150           |
|                | 300 | HGR 300C |              | #250           |
| 1 "            | 50  | HGR 50D  | M            | #150           |
|                | 70  | HGR 70D  | M            | #150           |
|                | 95  | HGR 95D  | M            | #150           |
|                | 120 | HGR 120D | M            | #150           |
|                | 150 | HGR 150D | M            | #200           |
|                | 185 | HGR 185D | M            | #200           |
|                | 240 | HGR 240D | M            | #200           |
|                | 300 | HGR 300D | M            | #250           |
|                | 500 | HGR 500D | L            | #150*2         |

## ■ HGT TYPE

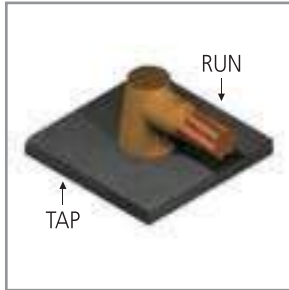


HGT형은 수직 접지봉 끝에 수평한 접지 전선을 용접하는데 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

※ A = 1/3", B = 5/8"  
C = 3/4", D = 1"

| Cable to Cable |     |          |              |                |
|----------------|-----|----------|--------------|----------------|
| Cable Size     |     | Mold NO. | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |          |              |                |
| 1/2 "          | 50  | HGT 50A  | M            | #90            |
|                | 70  | HGT 70A  |              | #90            |
|                | 95  | HGT 95A  |              | #115           |
|                | 120 | HGT 120A |              | #150           |
|                | 150 | HGT 150A |              | #200           |
| 5/8 "          | 50  | HGT 50B  | M            | #90            |
|                | 70  | HGT 70B  |              | #115           |
|                | 95  | HGT 95B  |              | #115           |
|                | 120 | HGT 120B |              | #150           |
|                | 150 | HGT 150B |              | #200           |
|                | 185 | HGT 185B |              | #200           |
|                | 240 | HGT 240B |              | #250           |
| 3/4 "          | 50  | HGT 50C  | M            | #115           |
|                | 70  | HGT 70C  | M            | #115           |
|                | 95  | HGT 95C  | M            | #115           |
|                | 120 | HGT 120C | M            | #150           |
|                | 150 | HGT 150C | M            | #200           |
|                | 185 | HGT 185C | M            | #200           |
|                | 240 | HGT 240C | M            | #250           |
|                | 300 | HGT 300C | L            | #200*2         |
|                | 500 | HGT 500C | L            | #250*2         |
| 1 "            | 50  | HGT 50D  | M            | #150           |
|                | 70  | HGT 70D  | M            | #150           |
|                | 95  | HGT 95D  | M            | #150           |
|                | 120 | HGT 120D | M            | #200           |
|                | 150 | HGT 150D | M            | #200           |
|                | 185 | HGT 185D | M            | #200           |
|                | 240 | HGT 240D | M            | #250           |
|                | 300 | HGT 300D | L            | #200*2         |
|                | 500 | HGT 500D | L            | #250*2         |

## ■ HCHS TYPE



HCHS형은 수평전선 끝과 수평한 철판 표면에 용접하기 위해 적용된다. 표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |          |              |                |
|----------------|----------|--------------|----------------|
| Cable Size     | Mold NO. | Handle Clamp | Weld Metal NO. |
| 16             | HCHS 16  | M            | #45            |
| 25             | HCHS 25  | M            | #65            |
| 35             | HCHS 35  | M            | #65            |
| 50             | HCHS 50  | M            | #90            |
| 70             | HCHS 70  | M            | #115           |
| 95             | HCHS 95  | M            | #115           |
| 120            | HCHS 120 | M            | #150           |
| 150            | HCHS 150 | M            | #150           |
| 185            | HCHS 185 | M            | #200           |
| 240            | HCHS 240 | M            | #200           |
| 300            | HCHS 300 | M            | #250           |
| 500            | HCHS 500 | L            | #200*2         |

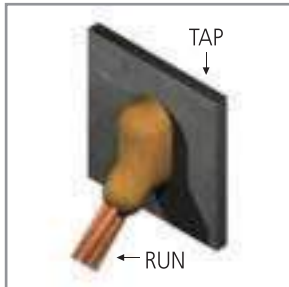
## ■ HCHST TYPE



HCHST형은 수평전선 끝과 수평한 철판 표면에 용접하기 위해 적용된다. 표준 모델은 우측표와 같으며, 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |           |              |                |
|----------------|-----------|--------------|----------------|
| Cable Size     | Mold NO.  | Handle Clamp | Weld Metal NO. |
| 16             | HCHST 16  | M            | #45            |
| 25             | HCHST 25  | M            | #65            |
| 35             | HCHST 35  | M            | #90            |
| 50             | HCHST 50  | M            | #115           |
| 70             | HCHST 70  | M            | #115           |
| 95             | HCHST 95  | M            | #150           |
| 120            | HCHST 120 | M            | #150           |
| 150            | HCHST 150 | M            | #200           |
| 185            | HCHST 185 | M            | #250           |
| 240            | HCHST 240 | L            | #150*2         |
| 300            | HCHST 300 | L            | #150*2         |
| 500            | HCHST 500 | L            | #250*2         |

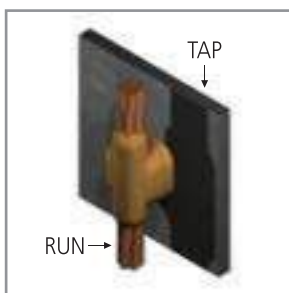
## ■ ADVS TYPE



ADVS형은 수직 철판표면에 아래로 향하는 전선 한끝을 용접하는데 적용된다. 표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |          |              |                |
|----------------|----------|--------------|----------------|
| Cable Size     | Mold NO. | Handle Clamp | Weld Metal NO. |
| 16             | ADVS 16  | M            | #45            |
| 25             | ADVS 25  | M            | #65            |
| 35             | ADVS 35  | M            | #65            |
| 50             | ADVS 50  | M            | #90            |
| 70             | ADVS 70  | M            | #115           |
| 95             | ADVS 95  | M            | #115           |
| 120            | ADVS 120 | M            | #115           |
| 150            | ADVS 150 | M            | #150           |
| 185            | ADVS 185 | M            | #200           |
| 240            | ADVS 240 | M            | #200           |
| 300            | ADVS 300 | M            | #250           |
| 500            | ADVS 500 | L            | #200*2         |

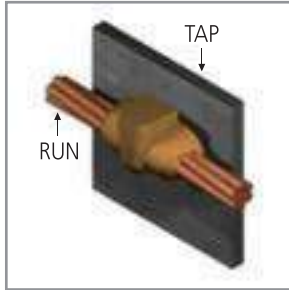
## ■ VCVS TYPE



VCVS형은 수직 철판표면에 수직전선을 나란히 용접하는데 적용된다. 표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |          |              |                |
|----------------|----------|--------------|----------------|
| Cable Size     | Mold NO. | Handle Clamp | Weld Metal NO. |
| 16             | VCVS 16  | M            | #90            |
| 25             | VCVS 25  | M            | #90            |
| 35             | VCVS 35  | M            | #115           |
| 50             | VCVS 50  | M            | #200           |
| 70             | VCVS 70  | M            | #200           |
| 95             | VCVS 95  | M            | #250           |
| 120            | VCVS 120 | M            | #250           |
| 150            | VCVS 150 | M            | #250           |
| 185            | VCVS 185 | L            | #150*2         |
| 240            | VCVS 240 | L            | #200*2         |
| 300            | VCVS 300 | L            | #250*2         |
| 500            | VCVS 500 | L            | #250*3         |

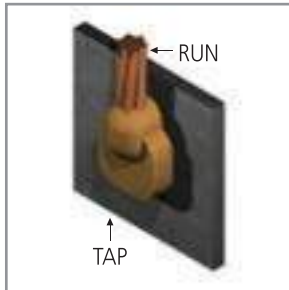
## ■ HCVS TYPE



HCVS형은 수직 철판표면에 수평한 전선을 평행하게 용접하는데 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |          |              |                |
|----------------|----------|--------------|----------------|
| Cable Size     | Mold NO. | Handle Clamp | Weld Metal NO. |
| 16             | HCVS 16  | M            | #65            |
| 25             | HCVS 25  | M            | #65            |
| 35             | HCVS 35  | M            | #90            |
| 50             | HCVS 50  | M            | #115           |
| 70             | HCVS 70  | M            | #115           |
| 95             | HCVS 95  | M            | #150           |
| 120            | HCVS 120 | M            | #150           |

## ■ VOCVS TYPE



VOCVS형은 수직 철판표면에 전선이 위로 향한 한쪽끝을 평행하게 용접하는데 적용한다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |           |              |                |
|----------------|-----------|--------------|----------------|
| Cable Size     | Mold NO.  | Handle Clamp | Weld Metal NO. |
| 16             | VOCVS 16  | M            | #65            |
| 25             | VOCVS 25  | M            | #90            |
| 35             | VOCVS 35  | M            | #90            |
| 50             | VOCVS 50  | M            | #115           |
| 70             | VOCVS 70  | M            | #150           |
| 95             | VOCVS 95  | M            | #200           |
| 120            | VOCVS 120 | M            | #200           |
| 150            | VOCVS 150 | M            | #250           |
| 185            | VOCVS 185 | L            | #150*2         |
| 240            | VOCVS 240 | L            | #150*2         |
| 300            | VOCVS 300 | L            | #200*2         |
| 500            | VOCVS 500 | L            | #200*3         |

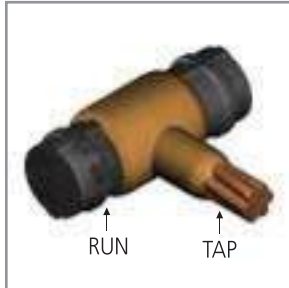
## HCVR TYPE



HCVR형은 수직한 상태의 철근과 수평한 상태의 전선끝을 용접하는데 적용된다. 표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |     |           |              |                |
|----------------|-----|-----------|--------------|----------------|
| Cable Size     |     | Mold NO.  | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |           |              |                |
| D10            | 35  | HCVR 1035 |              | #115           |
|                | 50  | HCVR 1050 |              | #115           |
|                | 70  | HCVR 1070 |              | #115           |
|                | 95  | HCVR 1095 |              | #150           |
| D13            | 35  | HCVR 1335 | M            | #150           |
|                | 50  | HCVR 1350 |              | #150           |
|                | 70  | HCVR 1370 |              | #150           |
|                | 95  | HCVR 1395 |              | #150           |
| D16            | 35  | HCVR 1635 | M            | #150           |
|                | 50  | HCVR 1650 |              | #150           |
|                | 70  | HCVR 1670 |              | #200           |
|                | 95  | HCVR 1695 |              | #200           |
| D19            | 35  | HCVR 1935 | M            | #200           |
|                | 50  | HCVR 1950 |              | #200           |
|                | 70  | HCVR 1970 |              | #200           |
|                | 95  | HCVR 1995 |              | #200           |
| D22            | 35  | HCVR 2235 | M            | #200           |
|                | 50  | HCVR 2250 |              | #200           |
|                | 70  | HCVR 2270 |              | #200           |
|                | 95  | HCVR 2295 |              | #200           |
| D25            | 35  | HCVR 2535 | M            | #200           |
|                | 50  | HCVR 2550 |              | #200           |
|                | 70  | HCVR 2570 |              | #200           |
|                | 95  | HCVR 2595 |              | #200           |
| D29            | 35  | HCVR 2935 | M            | #200           |
|                | 50  | HCVR 2950 |              | #200           |
|                | 70  | HCVR 2970 |              | #200           |
|                | 95  | HCVR 2995 |              | #250           |
| D32            | 35  | HCVR 3235 | M            | #250           |
|                | 50  | HCVR 3250 |              | #250           |
|                | 70  | HCVR 3270 |              | #250           |
|                | 95  | HCVR 3295 |              | #250           |

## ■ HCHRT TYPE



HCHRT형은 수평한 전선과 수평한 철근을 용접하는데 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |     |            |              |                |
|----------------|-----|------------|--------------|----------------|
| Cable Size     |     | Mold NO.   | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |            |              |                |
| D10            | 35  | HCHRT 1035 |              | #115           |
|                | 50  | HCHRT 1050 |              | #115           |
|                | 70  | HCHRT 1070 |              | #115           |
|                | 95  | HCHRT 1095 |              | #150           |
| D13            | 35  | HCHRT 1335 | M            | #150           |
|                | 50  | HCHRT 1350 |              | #150           |
|                | 70  | HCHRT 1370 |              | #150           |
|                | 95  | HCHRT 1395 |              | #150           |
| D16            | 35  | HCHRT 1635 | M            | #150           |
|                | 50  | HCHRT 1650 |              | #150           |
|                | 70  | HCHRT 1670 |              | #200           |
|                | 95  | HCHRT 1695 |              | #200           |
| D19            | 35  | HCHRT 1935 | M            | #200           |
|                | 50  | HCHRT 1950 |              | #200           |
|                | 70  | HCHRT 1970 |              | #200           |
|                | 95  | HCHRT 1995 |              | #200           |
| D22            | 35  | HCHRT 2235 | M            | #200           |
|                | 50  | HCHRT 2250 |              | #200           |
|                | 70  | HCHRT 2270 |              | #200           |
|                | 95  | HCHRT 2295 |              | #200           |
| D25            | 35  | HCHRT 2535 | M            | #200           |
|                | 50  | HCHRT 2550 |              | #200           |
|                | 70  | HCHRT 2570 |              | #200           |
|                | 95  | HCHRT 2595 |              | #200           |
| D29            | 35  | HCHRT 2935 | M            | #200           |
|                | 50  | HCHRT 2950 |              | #200           |
|                | 70  | HCHRT 2970 |              | #200           |
|                | 95  | HCHRT 2995 |              | #250           |
| D32            | 35  | HCHRT 3235 | M            | #250           |
|                | 50  | HCHRT 3250 |              | #250           |
|                | 70  | HCHRT 3270 |              | #250           |
|                | 95  | HCHRT 3295 |              | #250           |

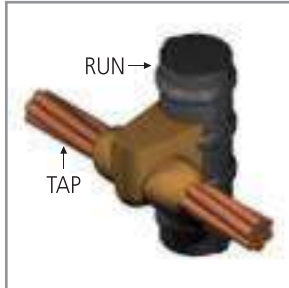
## ■ HCHRZ TYPE



HCHRZ형은 수평한 전선끝과 수평한 철  
근을 용접하는데 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것  
은 당사에 문의 바랍니다.

| Cable to Cable |     |            |              |                |
|----------------|-----|------------|--------------|----------------|
| Cable Size     |     | Mold NO.   | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |            |              |                |
| D10            | 35  | HCHRZ 1035 | M            | #115           |
|                | 50  | HCHRZ 1050 |              | #115           |
|                | 70  | HCHRZ 1070 |              | #115           |
|                | 95  | HCHRZ 1095 |              | #150           |
| D13            | 35  | HCHRZ 1335 | M            | #150           |
|                | 50  | HCHRZ 1350 |              | #150           |
|                | 70  | HCHRZ 1370 |              | #150           |
|                | 95  | HCHRZ 1395 |              | #150           |
| D16            | 35  | HCHRZ 1635 | M            | #150           |
|                | 50  | HCHRZ 1650 |              | #150           |
|                | 70  | HCHRZ 1670 |              | #200           |
|                | 95  | HCHRZ 1695 |              | #200           |
| D19            | 35  | HCHRZ 1935 | M            | #200           |
|                | 50  | HCHRZ 1950 |              | #200           |
|                | 70  | HCHRZ 1970 |              | #200           |
|                | 95  | HCHRZ 1995 |              | #200           |
| D22            | 35  | HCHRZ 2235 | M            | #200           |
|                | 50  | HCHRZ 2250 |              | #200           |
|                | 70  | HCHRZ 2270 |              | #200           |
|                | 95  | HCHRZ 2295 |              | #200           |
| D25            | 35  | HCHRZ 2535 | M            | #200           |
|                | 50  | HCHRZ 2550 |              | #200           |
|                | 70  | HCHRZ 2570 |              | #200           |
|                | 95  | HCHRZ 2595 |              | #200           |
| D29            | 35  | HCHRZ 2935 | M            | #250           |
|                | 50  | HCHRZ 2950 |              | #250           |
|                | 70  | HCHRZ 2970 |              | #250           |
|                | 95  | HCHRZ 2995 |              | #250           |
| D32            | 35  | HCHRZ 3235 | M            | #250           |
|                | 50  | HCHRZ 3250 |              | #250           |
|                | 70  | HCHRZ 3270 |              | #250           |
|                | 95  | HCHRZ 3295 |              | #250           |

## ■ HCVRX TYPE



HCVRX형은 수평한 전선과 수직한 철근을 용접하는데 적용된다.  
표준 모델은 우측표와 같으며 그 외의 것은 당사에 문의 바랍니다.

| Cable to Cable |     |            |              |                |
|----------------|-----|------------|--------------|----------------|
| Cable Size     |     | Mold NO.   | Handle Clamp | Weld Metal NO. |
| RUN            | TAP |            |              |                |
| D10            | 35  | HCVRX 1035 | M            | #115           |
|                | 50  | HCVRX 1050 |              | #115           |
|                | 70  | HCVRX 1070 |              | #115           |
|                | 95  | HCVRX 1095 |              | #150           |
| D13            | 35  | HCVRX 1335 | M            | #150           |
|                | 50  | HCVRX 1350 |              | #150           |
|                | 70  | HCVRX 1370 |              | #150           |
|                | 95  | HCVRX 1395 |              | #150           |
| D16            | 35  | HCVRX 1635 | M            | #150           |
|                | 50  | HCVRX 1650 |              | #200           |
|                | 70  | HCVRX 1670 |              | #200           |
|                | 95  | HCVRX 1695 |              | #200           |
| D19            | 35  | HCVRX 1935 | M            | #200           |
|                | 50  | HCVRX 1950 |              | #200           |
|                | 70  | HCVRX 1970 |              | #200           |
|                | 95  | HCVRX 1995 |              | #200           |
| D22            | 35  | HCVRX 2235 | M            | #200           |
|                | 50  | HCVRX 2250 |              | #200           |
|                | 70  | HCVRX 2270 |              | #200           |
|                | 95  | HCVRX 2295 |              | #200           |
| D25            | 35  | HCVRX 2535 | M            | #200           |
|                | 50  | HCVRX 2550 |              | #200           |
|                | 70  | HCVRX 2570 |              | #200           |
|                | 95  | HCVRX 2595 |              | #200           |
| D29            | 35  | HCVRX 2935 | M            | #200           |
|                | 50  | HCVRX 2950 |              | #200           |
|                | 70  | HCVRX 2970 |              | #250           |
|                | 95  | HCVRX 2995 |              | #250           |
| D32            | 35  | HCVRX 3235 | M            | #250           |
|                | 50  | HCVRX 3250 |              | #250           |
|                | 70  | HCVRX 3270 |              | #250           |
|                | 95  | HCVRX 3295 |              | #250           |

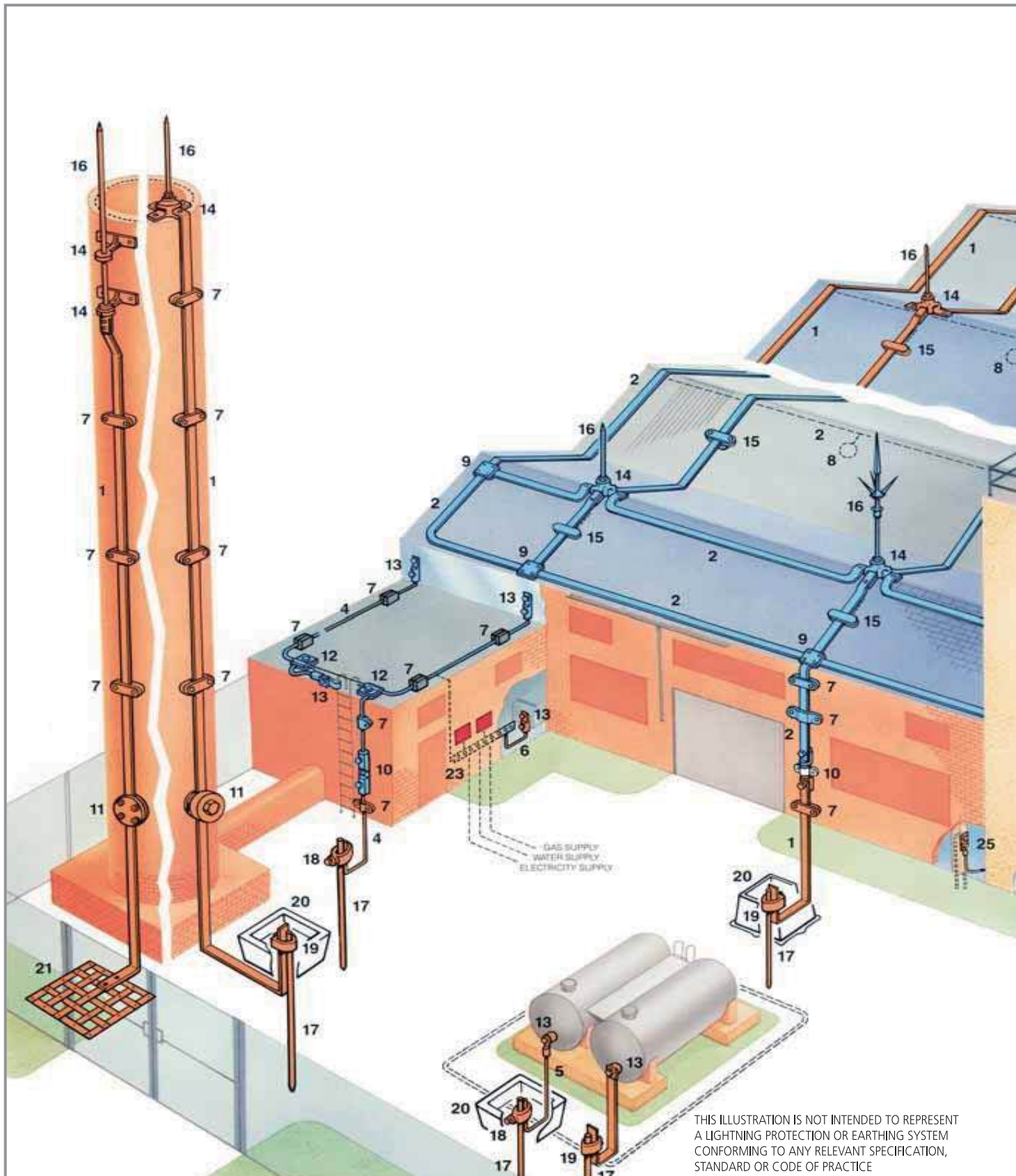
# LIGHTNING PROTECTION EQUIPMENTS

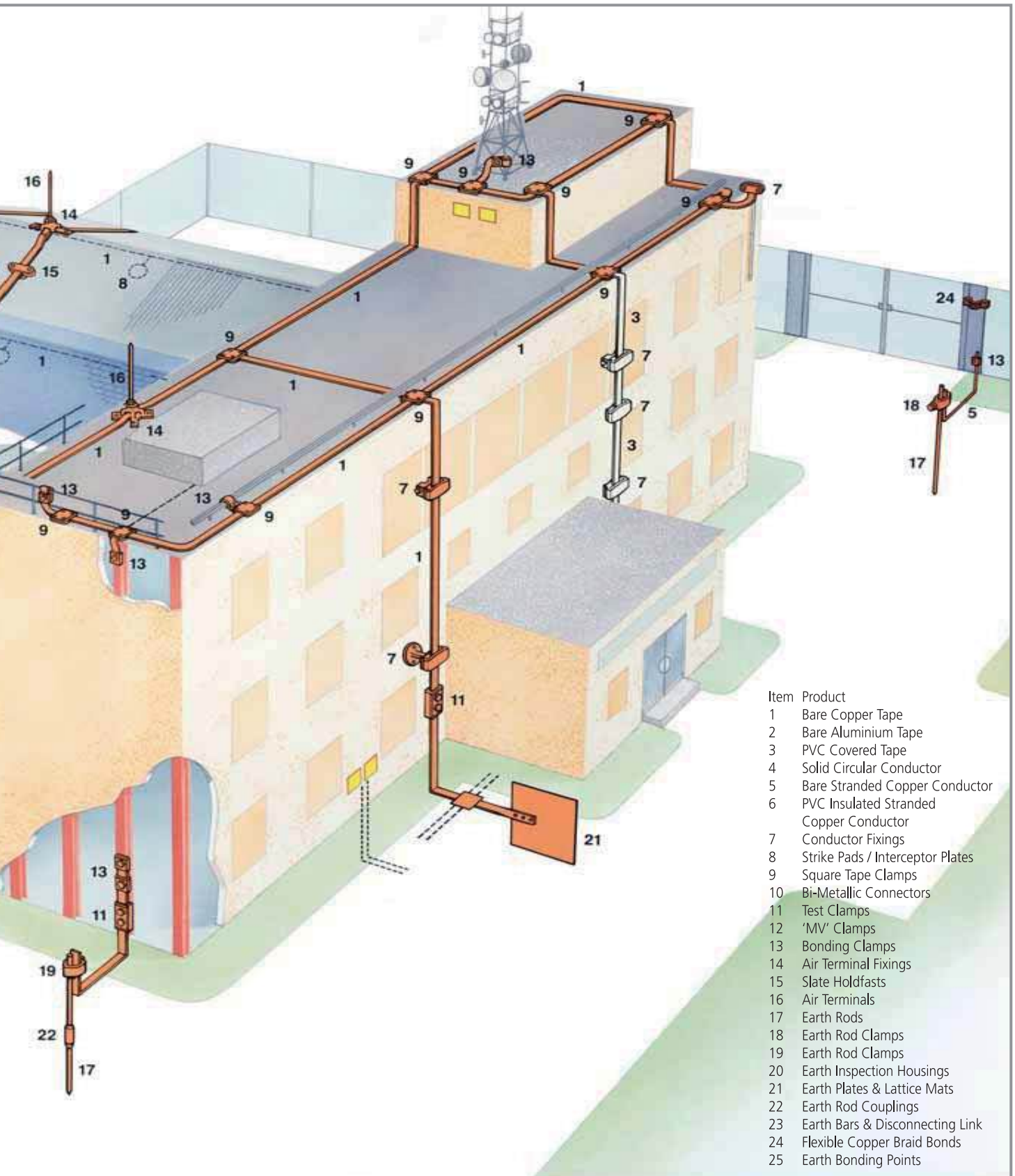
C

## LIGHTNING PROTECTION EQUIPMENTS

|                                                                                      |    |
|--------------------------------------------------------------------------------------|----|
| PRODUCT LOCATOR .....                                                                | 70 |
| EARLY STREAMER EMISSION LIGHTNING ROD(전자식 피뢰침 KEC) /                                 |    |
| LIGHTNING STRIKE COUNTER (낙뢰계수기) .....                                               | 72 |
| 고기능 PS 피뢰침 .....                                                                     | 73 |
| MULTI POINT TERMINAL (다기능피뢰침) M-1 .....                                              | 74 |
| MULTI SUPPORT M-3 .....                                                              | 75 |
| SIDE FLASH LIGHTNING ROD W/BASE (관통형촉뢰피뢰침) .....                                     | 76 |
| SIDE FLASH LIGHTNING ROD W/BASE (촉뢰피뢰침) .....                                        | 77 |
| SIDE FLASH BAR (촉뢰바) .....                                                           | 78 |
| LIGHTNING ROD / ROD BRACKET / ROD TO TAPE COUPLING.....                              | 80 |
| AIR TERMINAL BASE.....                                                               | 81 |
| LIGHTNING ROD W/SUPPORT / WIRE BAND (지선밴드) / WIRE SET(STEEL OR SUS).....             | 82 |
| BARE COPPER ROD · ALUMINUM ROD · STAINLESS STEEL ROD /                               |    |
| BARE COPPER TAPE · PVC COVERED COPPER TAPE /                                         |    |
| BARE COPPER WIRE · PVC INSULATED GROUNDING CABLE F-GV .....                          | 83 |
| MULTI SUPPORT M-3 / MULTI SUPPORT M-5 / LIGHTNING ROD M-5 TYPE / CABLE SUPPORT ..... | 84 |
| CABLE SUPPORT BASE TYPE / TAPE CLIP / TAPE CLIP BASE TYPE .....                      | 85 |
| JUNCTION CLAMP / SQUARE TAPE CLAMP / SQUARE TAPE CLAMP /                             |    |
| CABLE TO TAPE SQUARE CLAMP / STRAIGHT CONNECTOR .....                                | 86 |
| TEE CLAMP / FLEXIBLE CONNECTOR / CROSS AND TEE CONNECTOR /                           |    |
| BI-METALLIC CONNECTOR(이질솔리브) .....                                                   | 87 |
| 금속기와용 보조피뢰침(SUS) / 금속기와용 지지대(SUS) .....                                              | 89 |
| LIGHTNING WARNING SYSTEM(낙뢰경보기 LWS MK-II).....                                       | 90 |

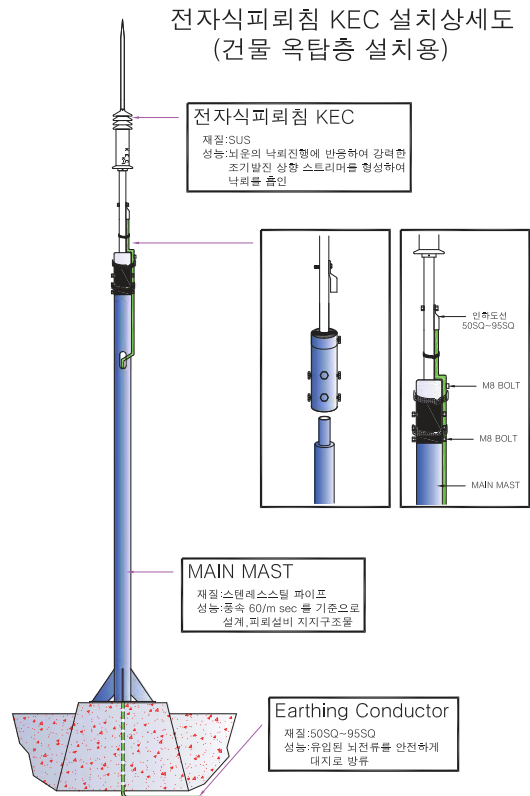
# PRODUCT LOCATOR





| Item | Product                                 |
|------|-----------------------------------------|
| 1    | Bare Copper Tape                        |
| 2    | Bare Aluminium Tape                     |
| 3    | PVC Covered Tape                        |
| 4    | Solid Circular Conductor                |
| 5    | Bare Stranded Copper Conductor          |
| 6    | PVC Insulated Stranded Copper Conductor |
| 7    | Conductor Fixings                       |
| 8    | Strike Pads / Interceptor Plates        |
| 9    | Square Tape Clamps                      |
| 10   | Bi-Metallic Connectors                  |
| 11   | Test Clamps                             |
| 12   | 'MV' Clamps                             |
| 13   | Bonding Clamps                          |
| 14   | Air Terminal Fixings                    |
| 15   | Slate Holdfasts                         |
| 16   | Air Terminals                           |
| 17   | Earth Rods                              |
| 18   | Earth Rod Clamps                        |
| 19   | Earth Rod Clamps                        |
| 20   | Earth Inspection Housings               |
| 21   | Earth Plates & Lattice Mats             |
| 22   | Earth Rod Couplings                     |
| 23   | Earth Bars & Disconnecting Link         |
| 24   | Flexible Copper Braid Bonds             |
| 25   | Earth Bonding Points                    |

## ■ EARLY STREAMER EMISSION LIGHTNING ROD(전자식 피뢰침 KEC)



| NP                  | Level I |     |     | Level II |     |     | Level III |     |     |
|---------------------|---------|-----|-----|----------|-----|-----|-----------|-----|-----|
| LIGHTNING ROD MODER | KEC     | KEC | KEC | KEC      | KEC | KEC | KEC       | KEC | KEC |
| RP(M)               | K-1     | K-2 | K-3 | K-1      | K-2 | K-3 | K-1       | K-2 | K-3 |
| h(m)                |         |     |     |          |     |     |           |     |     |
| 3                   | 25      | 35  | 48  | 34       | 45  | 59  | 39        | 50  | 65  |
| 4                   | 34      | 46  | 64  | 46       | 60  | 79  | 52        | 67  | 87  |
| 5                   | 42      | 58  | 79  | 57       | 75  | 97  | 65        | 84  | 107 |
| 6                   | 43      | 58  | 79  | 58       | 76  | 97  | 66        | 84  | 107 |

## ■ LIGHTNING STRIKE COUNTER (낙뢰계수기)



K-300



K-500



■ 고기능 PS 피뢰침

- 프랭클린 돌침형 피뢰침
- 고강도의 Stainless Steel 304 재질
- 소형제품으로 미관수려
- PS Ball의 역할로 기능 극대화
- 염해의 최적화
- 수뢰부 + 지지대 일체형



PS Rod Base(Stainless Steel)

| Catalog Number | Rod Size | Material        |
|----------------|----------|-----------------|
| KEC PS 500     | 500mm    | Stainless Steel |

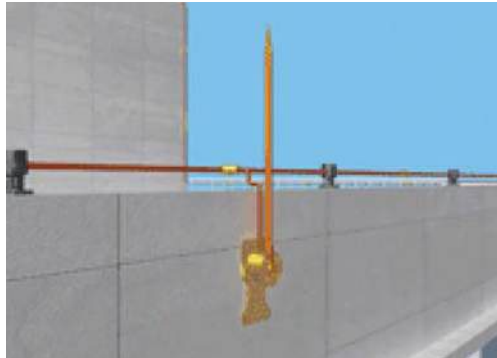
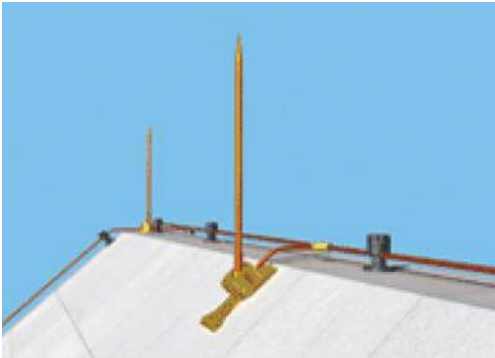
※ 디자인등록

## ■ MULTI POINT TERMINAL (다기능피뢰침) M-1

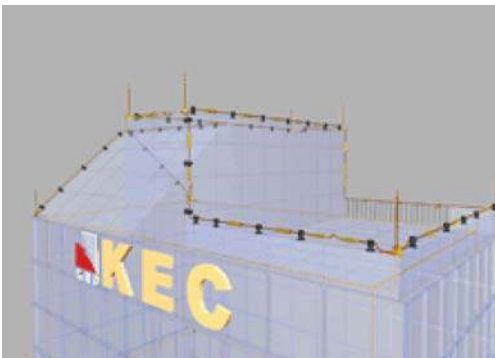
현재의 건축물들은 도시의 경관과 미관을 고려해 갈수록 다양한 형태의 구조로 건축되어 지고 있다.당사에서는 기존의 일반돌침의 단점을 보완한 다양한 형태의 건축물에 설치가 가능한 MULTI POINT TERMINAL (다기능피뢰침) M-1을 생산하게 되었습니다. 다양한 각도의 지붕층에 설치시 피뢰침의 간단한 조절만으로도 수평수직이 조절가능하며 벽부형으로의 설치가 가능함 또한 다양한 피뢰도선의 형태에 따라(BUS, ROD)연결 가능한 구조로 제작됨.

기존의 여러형태의 건축물에 한정적으로 설치해야만했던 모순된 설치사례가 획기적으로 개선 되었으며 보다 높은 효율의 피뢰보호설비에 적합하고 신규피뢰보호규정인 KS C IEC-62305에 부합하는 낙뢰보호용 수뢰부로 최적의 제품임을 자부합니다.

### M-1의 특징



▶ 피뢰침이 다양한 형태로 조절이 되기 때문에 어떠한 형태의 지붕에도 설치를 할 수 있다.



▶ 전선, 동봉, BUS BAR등 다양한 피뢰도선을 사용할 수 있습니다.

▶ 피뢰침은 직경10 $\phi$ ~18 $\phi$ , 길이 50cm~2M등 다양하게 제작이 가능하며, 간단한 방법으로 설치가 되며 누구나 유지보수가 가능합니다



| Catalog Number | Conductor | Size                                  |
|----------------|-----------|---------------------------------------|
| KRL 610-1      | 전선        | 35mm <sup>2</sup> ~150mm <sup>2</sup> |
|                | 동봉        | 8 $\phi$ ~15 $\phi$                   |
|                | BUS BAR   | 25-3T~25-6T                           |

※ 한국전기연구원 인증제품

## ■ MULTI SUPPORT M-3

낙뢰보호용 피뢰도선지지는 지금까지 에폭시계열과 사기애자형이 주를 이루고 있었지만 에폭시계열의 실외사용시 경과되는 시간에 따라 탈색 및 내구성의 문제 사기애자의 충격에 약한 문제등에 따라 기존설치된 피뢰설비의 유지보수나 하자제품의 교체로 인해 많은 비용이 소모된 것이 사실이며 가장 중요한 낙뢰로부터의 안전한 설비의 구실을 하지 못했다.

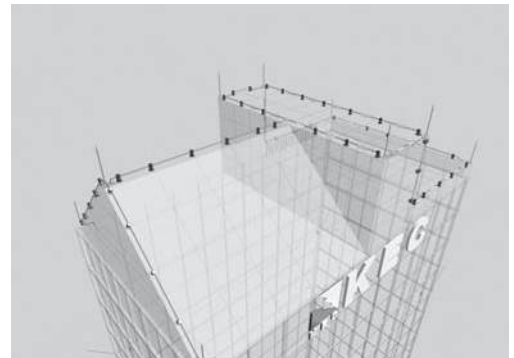
당사는 MULTI SUPPORT M-3(피뢰도선지지)를 개발해 기존 피뢰설비의 단점을 보강하고 반영구적인 낙뢰보호설비의 욕구를 만족시켰다.

- 내구성과 내화성이 우수한 ABS재질의 원자재 사용
- 한국전기연구원(KERI) 낙뢰시험통과
- 다양한 모양의 피뢰도선을 한 제품으로 설치가능
- 시공의 간편으로 전체적인 공사비의 절감효과
- 수려한 미관으로 건축물과의 자연적인 조화

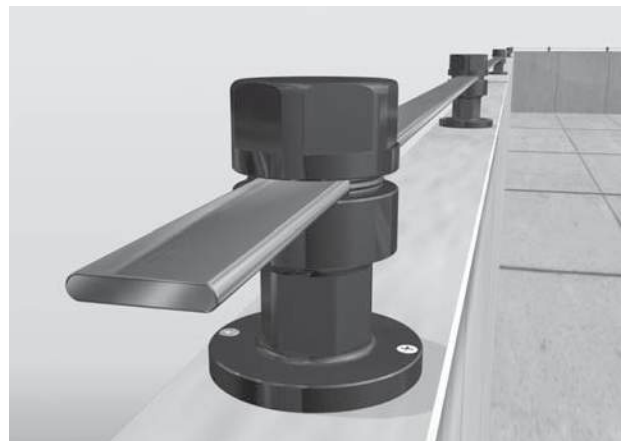
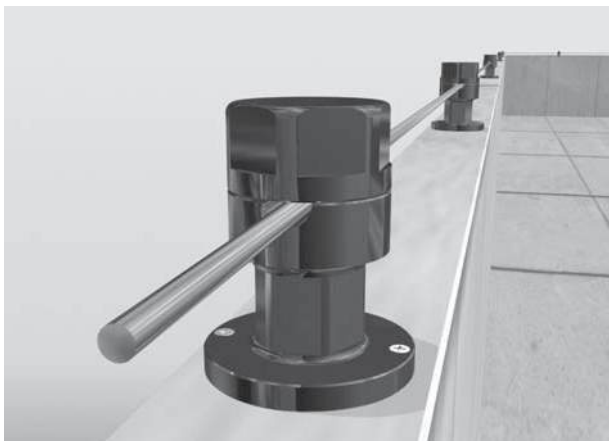
기존의 피뢰도선 설비의 문제들을 완벽하게 보완한 차세대 피뢰도선지지는 MULTI SUPPORT M-3 입니다.

### M-3의 특징

- ▶ 시공이 간편하다.
- ▶ 건축물에 앵카볼트, 스크류비스로 고정가능하다.
- ▶ 공사비 원가 절감효과.

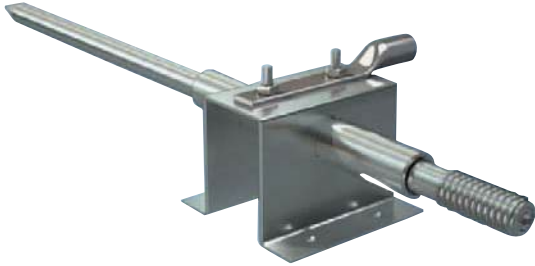


- ▶ 한국전기연구원 인증제품



- ▶ 동봉, BUS BAR등 다양한 피뢰도선을 겸용으로 사용할 수 있다.

## ■ SIDE FLASH LIGHTNING ROD W/BASE (관통형측뢰피뢰침)



| Catalog Number | Rod Size      | Material        |
|----------------|---------------|-----------------|
| KRL 550        | D14*250~750mm | Stainless Steel |

※특허 No : 제10-1798342호

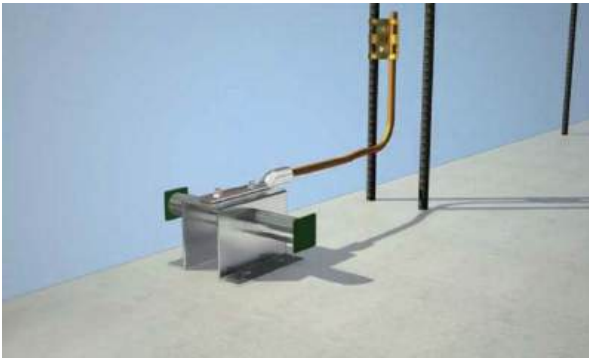
### ▶ 시공 순서 상세도



1. Base Form 고정



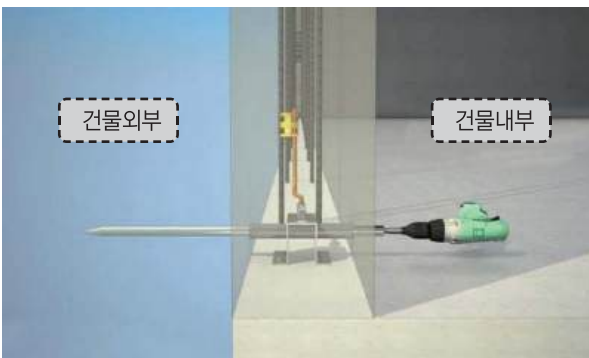
2. 동관단자/철근콘크터 접지선 고정



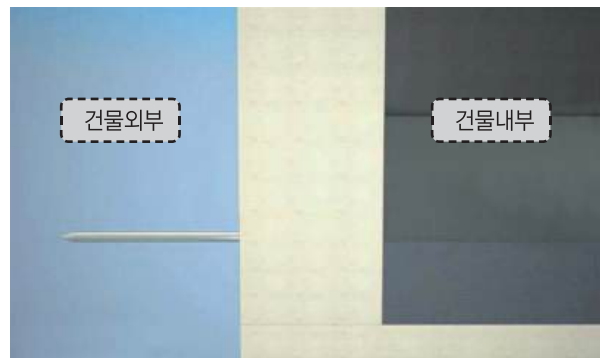
3. 방수 테이핑



4. 벽체 골조타설



5. 피뢰침 접속 후 드릴로 고정



6. 바닥 방통작업

## ■ SIDE FLASH LIGHTNING ROD W/BASE (측뢰피뢰침)



| Catalog Number | Rod Size      | Material |
|----------------|---------------|----------|
| KRL 640        | D14×250~750mm | Copper   |



| Catalog Number | Rod Size      | Material        |
|----------------|---------------|-----------------|
| KRL 641        | D12×250~750mm | Stainless Steel |



| Catalog Number | Rod Size      | Material        |
|----------------|---------------|-----------------|
| KRL 642        | D12×250~750mm | Stainless Steel |



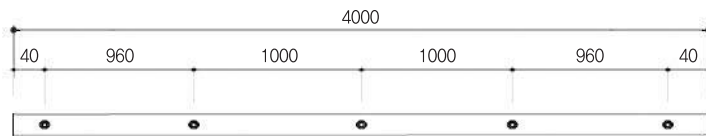
| Catalog Number | Rod Size      | Material        |
|----------------|---------------|-----------------|
| KRL 643        | D16×250~750mm | Stainless Steel |

## ■ SIDE FLASH BAR (측뢰바)

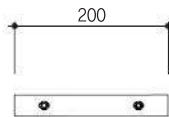


| Catalog Number   | Conductor Size | Material        |
|------------------|----------------|-----------------|
| KRL 644 (TYPE-A) | 20~25X3,4T     | Aluminum        |
| KRL 644 (TYPE-B) | 20~25X3,4T     | Stainless Steel |

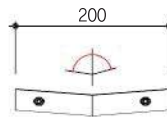
※ 주문제작 사양



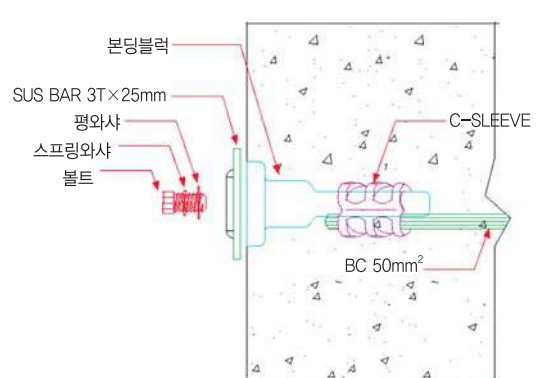
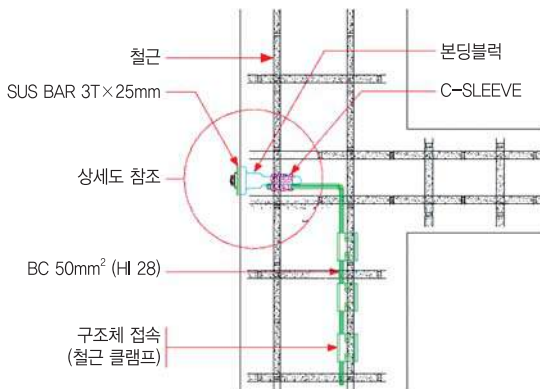
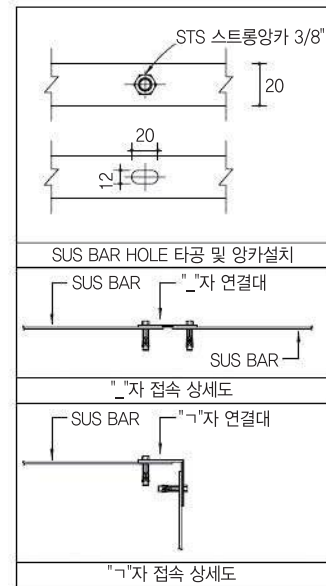
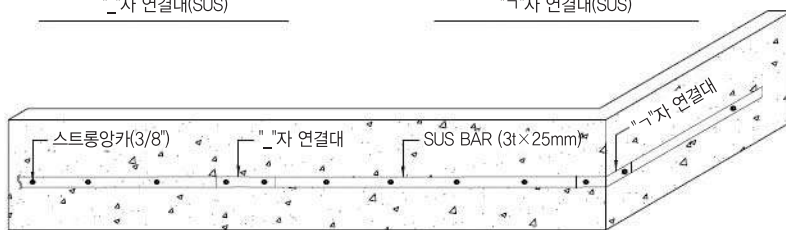
직선부분 SUS BAR



"I"자 연결대(SUS)



"L"자 연결대(SUS)



■ LIGHTNING ROD W/BASE



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 645        | 35~70                        |
| KRL 645-1      | 95~120                       |



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 646        | 35~70                        |
| KRL 646-1      | 95~120                       |



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 647        | 35~70                        |
| KRL 647-1      | 95~120                       |



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 648        | 35~70                        |
| KRL 648-1      | 95~120                       |



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 649        | 35~70                        |
| KRL 649-1      | 95~120                       |



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 650        | 35~70                        |
| KRL 650-1      | 95~120                       |

■ LIGHTNING ROD



| Catalog Number |
|----------------|
| KRL 651        |



| Catalog Number |
|----------------|
| KRL 652        |

## ■ LIGHTNING ROD



| Catalog Number | Size(mm)  |
|----------------|-----------|
| KRL 600        | ø 14×500  |
| KRL 601        | ø 14×750  |
| KRL 602        | ø 14×1000 |
| KRL 603        | ø 16×500  |
| KRL 604        | ø 16×750  |
| KRL 605        | ø 16×1000 |
| KRL 606        | ø 20×1000 |



Catalog Number

KRL 607



Catalog Number

KRL 608



Catalog Number

KRL 609



Catalog Number

KRL 610



Catalog Number

KRL 611

## ■ ROD BRACKET



| Catalog Number | Rod   | Dia. mm | Material |
|----------------|-------|---------|----------|
| KRL 722        | 18~19 |         | Brass    |

## ■ ROD TO TAPE COUPLING



| Catalog Number | Rod Dia | Thread Dia mm | Conductor Size mm <sup>2</sup> | Material |
|----------------|---------|---------------|--------------------------------|----------|
| KRL 723        | 15      | 16            | 35~70                          | Brass    |
| KRL 724        | 15      | 17            | 95                             | Brass    |

## ■ AIR TERMINAL BASE



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 620        | 35~70                        |
| KRL 621        | 95~120                       |



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 623        | 35~70                        |
| KRL 624        | 95~120                       |



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 625        | 35~70                        |
| KRL 626        | 95~120                       |



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 627        | 35~70                        |
| KRL 628        | 95~120                       |

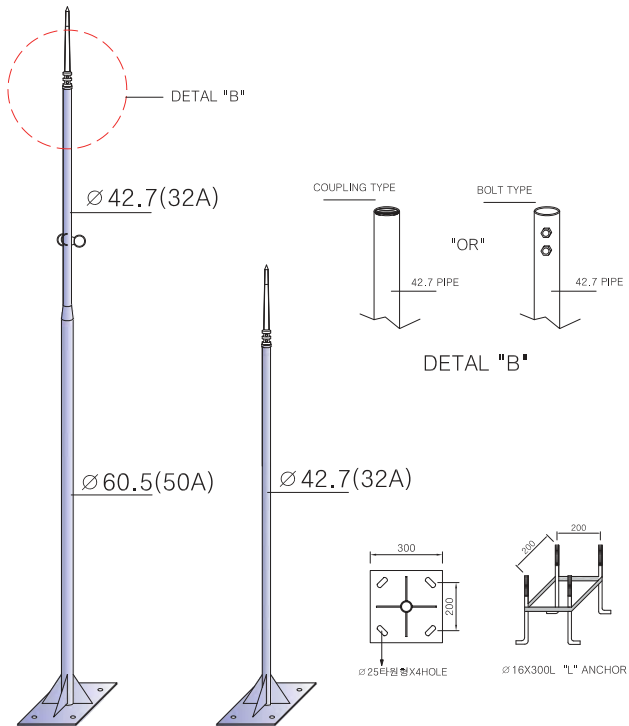


| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 629        | 35~70                        |
| KRL 630        | 95~120                       |



| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 631        | 35~70                        |
| KRL 632        | 95~120                       |

## ■ LIGHTNING ROD W/SUPPORT



| Catalog Number | Type            |             |
|----------------|-----------------|-------------|
|                | Stainless Steel | H.D.G Steel |
| KRL 653        | 1M              | 1M          |
| KRL 654        | 3M              | 3M          |
| KRL 655        | 5M              | 5M          |
| KRL 656        | 7M              | 7M          |

※ 주문제작 사양 가능

## ■ WIRE BAND (지선밴드)



| Catalog Number  | Conductor Size | Material |
|-----------------|----------------|----------|
| KRL 658(TYPE-A) | D12~D20mm      | Brass    |
| KRL 658(TYPE-B) | D34~D44mm      | Brass    |
| KRL 658(TYPE-C) | D45~D51mm      | Brass    |

## ■ WIRE SET(STEEL OR SUS)



| Catalog Number | Conductor Size | Remark                                  |
|----------------|----------------|-----------------------------------------|
| KRL 659        | 5mm            | Wire-20M<br>Clip-24EA<br>Turnbuckle-3EA |

### ■ BARE COPPER ROD · ALUMINUM ROD · STAINLESS STEEL ROD



TYPE A



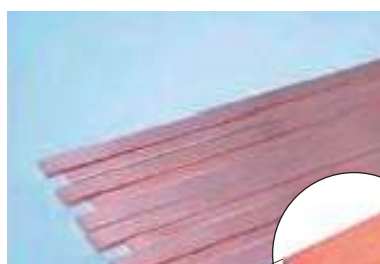
TYPE B



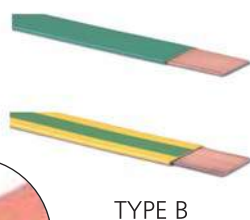
TYPE C

| Catalog Number  | Conductor Size | Material        |
|-----------------|----------------|-----------------|
| KRL 763(TYPE-A) | D8~D15mm       | Copper          |
| KRL 763(TYPE-B) | D8~D15mm       | Aluminum        |
| KRL 763(TYPE-C) | D8~D15mm       | Stainless Steel |

### ■ BARE COPPER TAPE · PVC COVERED COPPER TAPE



TYPE A



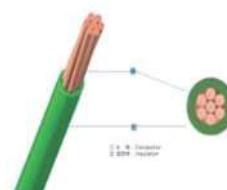
TYPE B

| Catalog Number |           | Dimension(mm) |   |
|----------------|-----------|---------------|---|
| TYPE A         | TYPE B    | A             | B |
| KRL 764        | KRL 764-1 | 10            | 3 |
| KRL 765        | KRL 765-1 | 25            | 3 |
| KRL 766        | KRL 766-1 | 25            | 4 |
| KRL 767        | KRL 767-1 | 30            | 3 |
| KRL 768        | KRL 768-1 | 30            | 4 |

### ■ BARE COPPER WIRE · PVC INSULATED GROUND CABLE F-GV



TYPE A



TYPE B

| Catalog Number |           | Size(mm <sup>2</sup> ) | Catalog Number |           | Size(mm <sup>2</sup> ) |
|----------------|-----------|------------------------|----------------|-----------|------------------------|
| TYPE A         | TYPE B    |                        | TYPE A         | TYPE B    |                        |
| KRL 769        | KRL 769-1 | 16                     | KRL 773        | KRL 773-1 | 70                     |
| KRL 770        | KRL 770-1 | 25                     | KRL 774        | KRL 774-1 | 95                     |
| KRL 771        | KRL 771-1 | 35                     | KRL 775        | KRL 775-1 | 120                    |
| KRL 772        | KRL 772-1 | 50                     | KRL 776        | KRL 776-1 | 150                    |

## ■ MULTI SUPPORT M-3



TYPE B

| Catalog Number      | Conductor Size           | Material      |
|---------------------|--------------------------|---------------|
| KRL 660<br>(TYPE-A) | D8~D15mm<br>BUS BAR 25mm | Polycarbonate |
| KRL 660<br>(TYPE-B) | D8~D10mm                 | Polycarbonate |

※ M-3 BASE, 고무패킹은 별도 주문 (색상: 흑색, 회색)



TYPE A



M-3 BASE



M-3 고무패킹

## ■ MULTI SUPPORT M-5 / LIGHTNING ROD M-5 TYPE



| Catalog Number | Conductor Size | Material |
|----------------|----------------|----------|
| KRL 661        | D8~D10mm       | Aluminum |
| KRL 662        | D12~D500mm     | Aluminum |

## ■ CABLE SUPPORT



| Catalog Number | Cable Size (mm <sup>2</sup> ) |
|----------------|-------------------------------|
| KRL 684        | 35~70                         |
| KRL 685        | 95                            |



| Catalog Number | Cable Size (mm <sup>2</sup> ) |
|----------------|-------------------------------|
| KRL 686        | 35~70                         |
| KRL 687        | 95                            |



| Catalog Number | Cable Size (mm <sup>2</sup> ) |
|----------------|-------------------------------|
| KRL 688        | 35~70                         |
| KRL 689        | 95                            |

## ■ CABLE SUPPORT BASE TYPE



TYPE A



TYPE B



| Catalog Number | Rod  | Material |
|----------------|------|----------|
| KRL 700-1 A    | 8~10 | Copper   |
| KRL 700-2 B    |      |          |

| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 700        | 35~70                        |
| KRL 701        | 95                           |

| Catalog Number | Cable Size(mm <sup>2</sup> ) |
|----------------|------------------------------|
| KRL 702        | 35~70                        |
| KRL 703        | 95                           |

## ■ TAPE CLIP



| Catalog Number | Tape Size(mm <sup>2</sup> ) |
|----------------|-----------------------------|
| KRL 666        | 10×3                        |
| KRL 667        | 25×3                        |
| KRL 668        | 25×4                        |
| KRL 669        | 30×3                        |
| KRL 670        | 30×4                        |
| KRL 671        | 50×3                        |

| Catalog Number | Tape Size(mm <sup>2</sup> ) |
|----------------|-----------------------------|
| KRL 672        | 10×3                        |
| KRL 673        | 25×3                        |
| KRL 674        | 25×4                        |
| KRL 675        | 30×3                        |
| KRL 676        | 30×4                        |
| KRL 677        | 50×3                        |

| Catalog Number | Tape Size(mm <sup>2</sup> ) |
|----------------|-----------------------------|
| KRL 678        | 10×3                        |
| KRL 679        | 25×3                        |
| KRL 680        | 25×4                        |
| KRL 681        | 30×3                        |
| KRL 682        | 30×4                        |
| KRL 683        | 50×3                        |

## ■ TAPE CLIP BASE TYPE

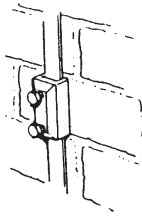


| Catalog Number | Tape Size(mm <sup>2</sup> ) |
|----------------|-----------------------------|
| KRL 704        | 10×3                        |
| KRL 705        | 25×3                        |
| KRL 706        | 25×4                        |
| KRL 707        | 30×3                        |
| KRL 708        | 30×4                        |
| KRL 709        | 50×3                        |

| Catalog Number | Tape Size(mm <sup>2</sup> ) |
|----------------|-----------------------------|
| KRL 710        | 10×3                        |
| KRL 711        | 25×3                        |
| KRL 712        | 25×4                        |
| KRL 713        | 30×3                        |
| KRL 714        | 30×4                        |
| KRL 715        | 50×3                        |

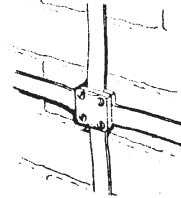
| Catalog Number | Tape Size(mm <sup>2</sup> ) |
|----------------|-----------------------------|
| KRL 716        | 10×3                        |
| KRL 717        | 25×3                        |
| KRL 718        | 25×4                        |
| KRL 719        | 30×3                        |
| KRL 720        | 30×4                        |
| KRL 721        | 50×3                        |

## ■ JUNCTION CLAMP



| Catalog Number | Tape Size (mm) | Conductor Material |
|----------------|----------------|--------------------|
| KRL 730        | 25×3           | Brass              |

## ■ SQUARE TAPE CLAMP



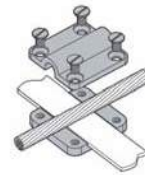
| Catalog Number | Tape Size (mm) | Conductor Material |
|----------------|----------------|--------------------|
| KRL 731        | 25×3           | Brass              |
| KRL 732        | 25×4           | Brass              |
| KRL 733        | 30×3           | Brass              |

## ■ CABLE TO TAPE CLAMP



| Catalog Number | Cable Size (mm <sup>2</sup> ) | Tape Size (mm) |
|----------------|-------------------------------|----------------|
| KRL 744        | 35                            | 10×3           |
| KRL 745        | 35~70                         | 25×3           |
| KRL 746        | 35~70                         | 25×4           |
| KRL 747        | 95                            | 30×3           |
| KRL 748        | 95                            | 30×4           |
| KRL 749        | 95                            | 50×3           |

## ■ CABLE TO TAPE SQUARE CLAMP



| Catalog Number | Conductor Size              | Conductor material |
|----------------|-----------------------------|--------------------|
| KRL 750        | 25×3mm to 70mm <sup>2</sup> | Copper             |

## ■ STRAIGHT CONNECTOR



TYPE A



TYPE B



TYPE C

| Catalog Number   | Rod Size (mm <sup>2</sup> ) | Conductor Material |
|------------------|-----------------------------|--------------------|
| KRL 755 (TYPE-A) | D8~10mm                     | Brass              |
| KRL 755 (TYPE-B) |                             | Aluminum           |
| KRL 755 (TYPE-C) |                             | Stainless Steel    |

## ■ TEE CLAMP



TYPE A



TYPE B

| Catalog Number | Rod Size (mm) | Conductor Material |
|----------------|---------------|--------------------|
| KRL 756 A      | D8~10mm       | Brass              |
| KRL 756 B      |               | Aluminum           |

## ■ FLEXIBLE CONNECTOR



TYPE A

TYPE B

TYPE C

| Catalog Number  | Rod Size (mm) | Conductor Material |
|-----------------|---------------|--------------------|
| KRL 757(TYPE A) | D8~10mm       | Brass              |
| KRL 757(TYPE B) |               | Aluminum           |
| KRL 757(TYPE C) |               | Stainless Steel    |

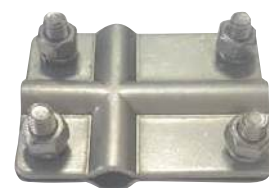
## ■ CROSS AND TEE CONNECTOR



TYPE A



TYPE B



TYPE C

| Catalog Number  | Rod Size | Material        |
|-----------------|----------|-----------------|
| KRL 761(TYPE-A) | D8~D10mm | Copper          |
| KRL 761(TYPE-B) | D8~D10mm | Aluminum        |
| KRL 761(TYPE-C) | D8~D10mm | Stainless Steel |

## ■ BI-METALLIC CONNECTOR(이질슬리브)



TYPE A



TYPE B



TYPE C

| Catalog Number | Rod Size | Material                 |
|----------------|----------|--------------------------|
| KRL 759(A, B)  | D8~D10mm | Aluminum + Copper        |
| KRL 759(C)     | D8mm     | Stainless Steel + Copper |

## ■ BIPOLOR CONVENTIONAL AIR TERMINAL (쌍극자 피뢰침)

### ▶ 3세대 쌍극자피뢰침 OMNI B-140S



#### ●특징

- 코로나 방전량 증가
- 하부 폴리머애자를 추가하여 절연성능 증대로수명 연장
- 상부 흡인부 구조를 변경하여 이탈을 방지
- 전위 완화부 도체 : 황동제를 스테인리스스틸로 교체하여 염해지역, 가스지역의 부식 문제 해결

#### ●시방(베이스 별도)

- 총길이 : 400mm
- 중량 : 약2kg

#### ●인증내용

- 국내발명특허

### ▶ 2세대 쌍극자피뢰침 OMNI B-140H



#### ●특징

- 1세대 쌍극자피뢰침의 방전성능을 극대화시킨 제품
- 보호건물이나 구조물에 설치되어 뇌격을 흡인하는 기존의 피뢰침을 교체함으로써 대지전하의 방전분산 효과를 높일 수 있음.
- 표준낙뢰방호 시스템 설비에 적합하도록 다양한 크기를 제공.
- 일반적인 사용조건에 적합.

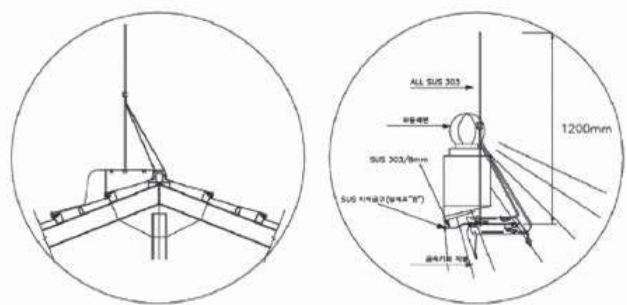
#### ●시방(베이스 별도)

- 총길이 : 500mm
- 중량 : 약1.95kg

#### ●인증내용

- 국내발명특허 + 전력신기술 인증 + 조달우수제품 인증

■ 금속기외용 보조피뢰침(SUS)



| Catalog Number | Type    |
|----------------|---------|
| 주공 사양          | 경사지붕피뢰침 |

■ 금속기외용 지지대(SUS)



| Catalog Number | Type    |
|----------------|---------|
| 주공 사양          | 평지붕용지지대 |



| Catalog Number | Type     |
|----------------|----------|
| 주공 사양          | 중간경사면지지대 |



| Catalog Number | Type   |
|----------------|--------|
| 주공 사양          | 용마루지지대 |



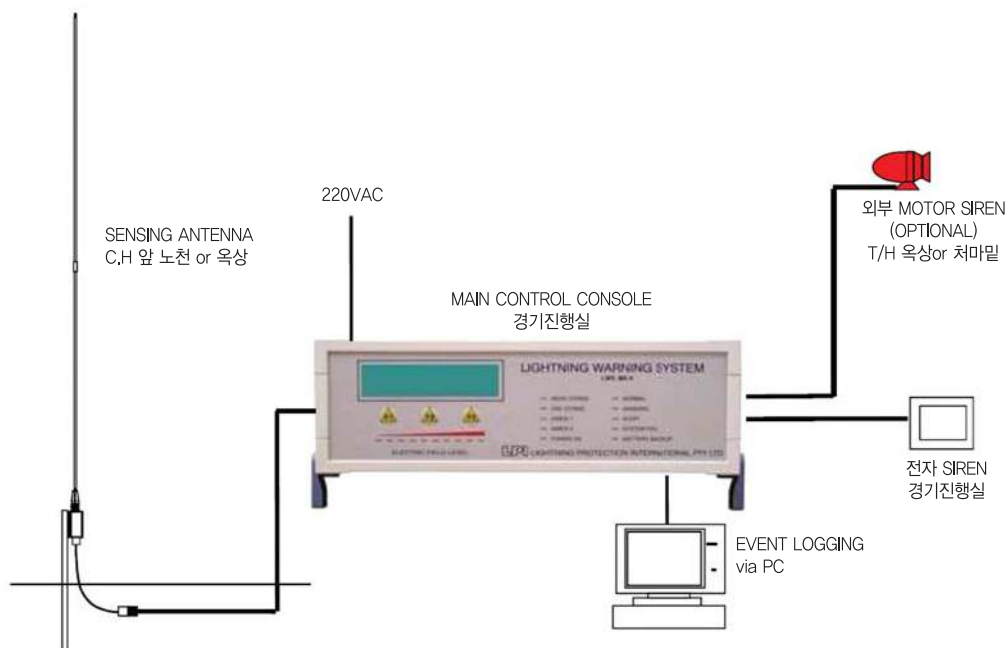
| Catalog Number | Type     |
|----------------|----------|
| 주공 사양          | 말단경사면지지대 |

## ■ LIGHTNING WARNING SYSTEM(낙뢰경보기 LWS MK-II)



LWS MK-II 낙뢰경보장치는 설치위치 주변의 뇌운을 조기에 감지하여 위험, 경계경보를 발령하여 낙뢰로 인한 피해를 방지할 수 있는 시스템입니다.

### LWS MK-II 구성도



# Ground & Lightning System

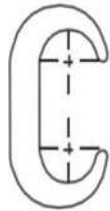
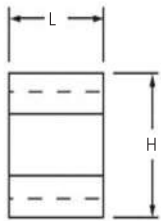
## (NUCLEAR POWER PLANT)

D

### Ground & Lightning System (NUCLEAR POWER PLANT)

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GROUND SLEEVE / C-TAP GROUND SLEEVE .....                         | 92  |
| GROUND CONNECTOR / GROUND CONNECTOR .....                         | 93  |
| GROUND CONNECTOR .....                                            | 94  |
| GROUND CONNECTOR / CABLE TO ROD · TUBE GROUND CONNECTOR .....     | 95  |
| GROUND CONNECTOR .....                                            | 96  |
| GROUND FLUSH PLATE / CABLE TRAY GROUND CLAMP / GROUND CLAMP ..... | 97  |
| POWER CONNECTOR, ONE HOLE .....                                   | 98  |
| POWER CONNECTOR, TWO HOLE .....                                   | 99  |
| SILICON BRONZE HEX HEAD BOLT .....                                | 100 |
| SILICON BRONZE CAPSCREW ROUND HEAD BOLT .....                     | 101 |
| SILICON BRONZE U-BOLT .....                                       | 102 |
| SILICON BRONZE HEX NUT / SILICON BRONZE FLAT WASHER /             |     |
| SILICON BRONZE SPLIT LOCK WASHER / BI-METALLIC WASHER .....       | 103 |
| BOLT · NUT · SCREW .....                                          | 104 |
| ADHESIVE REQUIREMENT .....                                        | 105 |
| SOLID COPPER AIR TERMINAL / AIR TERMINAL ADAPTER .....            | 106 |
| AIR TERMINAL BASE .....                                           | 107 |
| AIR TERMINAL BRACE .....                                          | 108 |
| CONNECTOR AND BONDING MATERIAL .....                              | 109 |
| ANCHOR TYPE FASTENER .....                                        | 110 |

## ■ GROUND SLEEVE

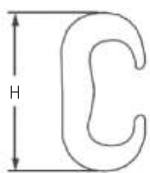


- Material : High Conductivity Copper
- Surface : Copper Finish

| Part Number | Copper Conductor Size(mm <sup>2</sup> ) |                  | Dimension (mm) |    |
|-------------|-----------------------------------------|------------------|----------------|----|
|             | RUN                                     | TAP              | H              | L  |
| SGW-22      | 22(25)                                  | 22(25)           | 20             | 30 |
| SGW-44      | 38(35)                                  | 38~22(35~25)     | 24             | 30 |
| SGW-62      | 60(70)                                  | 22(25)           | 27             | 30 |
| SGW-66      | 60(70)                                  | 60~38(70~35)     | 30             | 30 |
| SGW-1002    | 100(95)                                 | 22(25)           | 30             | 40 |
| SGW-1006    | 100(95)                                 | 60~38(70~35)     | 34             | 40 |
| SGW-1010    | 100(95)                                 | 100(95)          | 38             | 40 |
| SGW-1212    | 120                                     | 120              | 42             | 40 |
| SGW-1506    | 150                                     | 60~38(70~35)     | 47             | 55 |
| SGW-1515    | 150(240)                                | 150~100(95~70)   | 60             | 55 |
| SGW-2004    | 200(185)                                | 38(35)           | 47             | 55 |
| SGW-2010    | 200(185)                                | 100~60(95~70)    | 46             | 60 |
| SGW-2020    | 200(185)                                | 200~150(185~150) | 60             | 60 |
| SGW-2515    | 250(240)                                | 150~100(150~95)  | 60             | 60 |
| SGW-2525    | 250(240)                                | 250~200(240~185) | 62             | 65 |
| SGW-3030    | 300                                     | 300              | 65             | 65 |

## ■ C-TAP GROUND SLEEVE

- Material : High Conductivity Copper
- Surface : Copper Finish



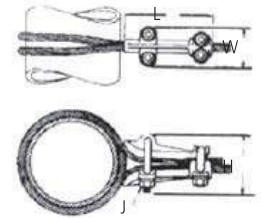
| Part Number | Standard Copper Cable Range(mm <sup>2</sup> ) |         | Dimension (mm) |    | Installation Data |       | No. of Crimps |
|-------------|-----------------------------------------------|---------|----------------|----|-------------------|-------|---------------|
|             | Run                                           | Tap     | H              | L  | Tool              | Die.  |               |
| KGHC2C2     | 10-35                                         | 10-35   | 30             | 19 | Y35               | U-C   | 1             |
| KGHC26C2    | 35-70                                         | 10-35   | 36             | 19 |                   | U-O   | 1             |
| KGHC26C26   | 35-70                                         | 35-70   | 39             | 19 |                   | U-O   | 1             |
| KGHC29C26   | 95-120                                        | 10-70   | 50             | 19 |                   | U997  | 1             |
| KGHC29C29   | 95-120                                        | 95-120  | 52             | 22 |                   | U997  | 1             |
| KGHC34C26   | 150-240                                       | 10-70   | 62             | 22 |                   | U1011 | 2             |
| KGHC34C29   | 150-240                                       | 95-120  | 66             | 22 |                   | U1011 | 2             |
| KGHC34C34   | 150-240                                       | 150-240 | 74             | 28 |                   | U1011 | 3             |

## ■ GROUND CONNECTOR

### FOR COPPER CABLE TO TUBE

High copper alloy ground connector for cross connecting a wide range of cable. High copper alloy, cast body, SILICON BRONZE U-bolts, nuts, and lockwasher make the KGQ suitable for burial in soil or concrete.

One-wrench installation.



| Part Number | Conductor  |                                       | Dimension(mm) |     |   |       |
|-------------|------------|---------------------------------------|---------------|-----|---|-------|
|             | Tube I.P.S | Cable                                 | H             | J   | L | W     |
| KGQ-26-26   | 6" Max     | 35mm <sup>2</sup> ~70mm <sup>2</sup>  | 4-1/2         | 3/8 | 5 | 2-1/2 |
| KGQ-26-1    | Above 6"   |                                       | 7-1/8         |     |   |       |
| KGQ-29-29   | 6" Max     | 95mm <sup>2</sup> ~120mm <sup>2</sup> | 4-1/8         |     | 6 | 2-3/4 |
| KGQ-29-1    | Above 6"   |                                       | 7-1/2         |     |   |       |

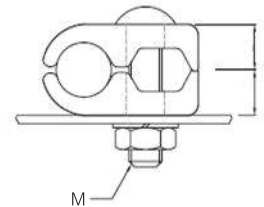
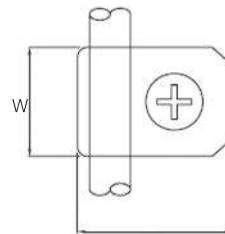
## ■ GROUND CONNECTOR



TYPE GB



TYPE GBM

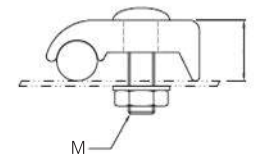
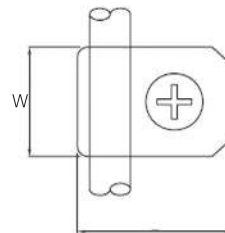


### FOR COPPER CABLE TO BAR

High Copper alloy ground connector for joining a range of cable to 1/4" thick bar. Type GB separates cable from bar, GBM clamp cable directly on bar surface. One-wrench installation.

The high copper alloy cast body and SILICON BRONZE bolts, nuts, and lockwashers make the GB and GBM suitable for direct burial in concrete or ground.

※ Bolt and Nut to be ordered separately.



| Part Number |          | Copper Conductor<br>size<br>mm <sup>2</sup> | Dimension(mm) |    |    |     |      |     |
|-------------|----------|---------------------------------------------|---------------|----|----|-----|------|-----|
| Type GB     | Type GBM |                                             | W             | L  | B  |     | C    | M   |
|             |          |                                             |               |    | GB | GBM |      |     |
| GB-26       | GBM-26   | 35~70                                       | 28            | 39 | 13 | 15  | 10.5 | 3/8 |
| GB-29       | GBM-29   | 70~120                                      | 37            | 51 | 17 | 21  | 13   | 1/2 |
| GB-34       | GBM-34   | 150~240                                     | 38            | 60 | 21 | 27  | 18   | 1/2 |

## ■ GROUND CONNECTOR

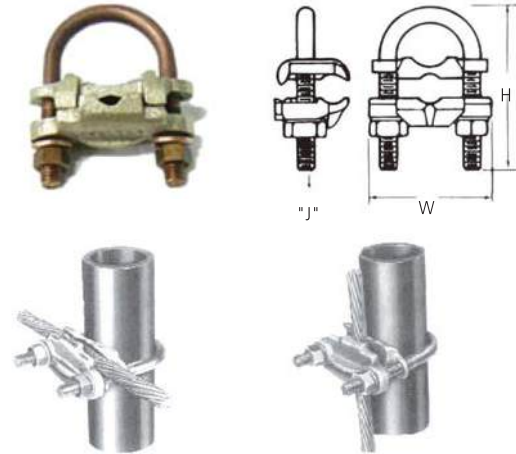


For Parallel 90°  
Copper Cable  
Connection

To Rod or Pipe with the Same Connector

High copper alloy ground connector for joining a range of cable, parallel or at right angles to rod or tube. Especially good for fence posts. High copper alloy cast body with SILICON BRONZE U-bolts, nuts, and lockwashers permit entire connection to be buried in ground or concrete without danger of corrosion.

- One-wrench installation.



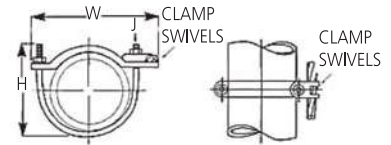
| Part Number | Conductor   |                        |            | Dimension |     |       |
|-------------|-------------|------------------------|------------|-----------|-----|-------|
|             | Tube I.P.S. | Rod Size or O.D. Range | Cable(mm²) | H         | J   | W     |
| GAR-1103    | 1/4         | 1/2                    | 10~25      | 2-1/2     | 3/8 | 1-7/8 |
| GAR-1107    |             |                        | 25~70      |           |     |       |
| GAR-1110    |             |                        | 70~120     |           |     |       |
| GAR-6403    | 3/8         | 5/8-3/4                | 10~25      | 2-7/8     |     | 2-1/8 |
| GAR-6407    |             |                        | 25~70      |           |     |       |
| GAR-6410    |             |                        | 70~120     |           |     |       |
| GAR-6414    |             |                        | 150~250    | 3-1/2     | 1/2 |       |
| GAR-1403    | 1/2-3/4     | 7/8-1                  | 10~25      | 2-3/4     | 3/8 | 2-3/8 |
| GAR-1407    |             |                        | 25~70      | 3         |     |       |
| GAR-1410    |             |                        | 70~120     |           |     |       |
| GAR-1414    |             |                        | 150~250    | 3-3/4     |     |       |
| GAR-1503    | 1           | 1-1/8-1-1/4            | 10~25      | 2-7/8     | 3/8 | 2-5/8 |
| GAR-1507    |             |                        | 25~70      |           |     |       |
| GAR-1510    |             |                        | 70~120     |           |     |       |
| GAR-1514    |             |                        | 150~250    | 4-1/2     |     |       |
| GAR-1603    | 1-1/4       | 1-3/8-1-1/2            | 10~25      | 3-1/2     | 3/8 | 3     |
| GAR-1607    |             |                        | 25~70      |           |     |       |
| GAR-1610    |             |                        | 70~120     |           |     |       |
| GAR-1614    |             |                        | 150~250    | 4-1/4     |     |       |
| GAR-1703    | 1-1/2       | 1-5/8-1-7/8            | 10~25      | 4         | 3/8 | 3-1/4 |
| GAR-1707    |             |                        | 25~70      |           |     |       |
| GAR-1710    |             |                        | 70~120     |           |     |       |
| GAR-1714    |             |                        | 150~250    | 4-5/8     |     |       |
| GAR-1803    | 2           | 2-2-3/8                | 10~25      | 4-1/4     | 3/8 | 3-3/4 |
| GAR-1807    |             |                        | 25~70      |           |     |       |
| GAR-1810    |             |                        | 70~120     |           |     |       |
| GAR-1814    |             |                        | 150~250    | 5-1/4     |     |       |
| GAR-1903    | 2-1/2       | 2-1/2-7/8              | 10~25      | 5         | 3/8 | 4-1/4 |
| GAR-1907    |             |                        | 25~70      |           |     |       |
| GAR-1910    |             |                        | 70~120     |           |     |       |
| GAR-1914    |             |                        | 150~250    | 5-5/8     |     |       |
| GAR-2003    | 3           | 3-3-1/2                | 10~25      | 5-5/8     | 3/8 | 4-3/4 |
| GAR-2007    |             |                        | 25~70      |           |     |       |
| GAR-2010    |             |                        | 70~120     |           |     |       |
| GAR-2014    |             |                        | 150~250    | 6-3/8     |     |       |
| GAR-2103    | 3-1/2       | 3-1/2-4                | 10~25      | 6-1/4     | 3/8 | 5-3/8 |
| GAR-2107    |             |                        | 25~70      |           |     |       |
| GAR-2110    |             |                        | 70~120     |           |     |       |
| GAR-2114    |             |                        | 150~250    | 6-3/4     |     |       |
| GAR-2203    | 4           | 4-4-1/2                | 10~25      | 6-3/8     | 3/8 | 5-7/8 |
| GAR-2207    |             |                        | 25~70      |           |     |       |
| GAR-2210    |             |                        | 70~120     |           |     |       |
| GAR-2214    |             |                        | 150~250    | 6-7/8     |     |       |
| GAR-2403    | 5           | -                      | 10~25      | 7-3/4     | 3/8 | 6-7/8 |
| GAR-2407    |             |                        | 25~70      |           |     |       |
| GAR-2410    |             |                        | 70~120     |           |     |       |
| GAR-2414    |             |                        | 150~250    | 8-5/8     |     |       |
| GAR-8610    | 6           | -                      | 70~120     | 8-13/16   | 1/2 | 8-3/8 |

## ■ GROUND CONNECTOR



### Features and Benefits

- Cable clamp swivels at 90°  
- Permits parallel grounding of one pipe or a 90° cable run for grounding several parallel pipes.
- One-wrench installation.  
- Simplified installation.

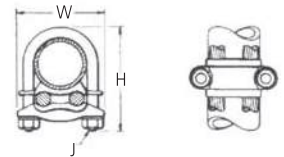


(In.)

| Part Number | Cable Range | IPS Size      | O.D. Range | H    | J       | W     | Recommended Tightening Torque |
|-------------|-------------|---------------|------------|------|---------|-------|-------------------------------|
| GAR-3902-BU | #4-4/0 AWG  | 1/2"-1"       | 0.840-1.32 | 3.50 | 3/8"-16 | 3.25  | 240 in.-lbs.                  |
| GAR-3903-BU |             | 1-1/4"-2"     | 1.66-2.38  | 4.00 |         | 4.25  |                               |
| GAR-3904-BU |             | 2-1/2"-3-1/2" | 2.88-4.00  | 6.50 |         | 6.0   |                               |
| GAR-3905-BU |             | 4"-5"         | 4.50-5.56  | 7.50 |         | 1.50  |                               |
| GAR-3906-BU |             | 6"            | 6.62       | 8.50 |         | 8.62  |                               |
| GAR-3907-BU |             | 8"            | 8.62       | 10   |         | 10.62 |                               |
| GAR-3908-BU |             | 10"           | 10.75      | 12   |         | 12.75 |                               |
| GAR-3909-BU |             | 12"           | 12.75      | 14   |         | 14.75 |                               |

## ■ CABLE TO ROD · TUBE GROUND CONNECTOR

High copper alloy ground connector for joining a range of two parallel cables to rod or pipe. Especially good for grounding fence posts. High copper alloy cast body with SILICON BRONZE U-bolts, nuts, and lockwashers make the GD suitable for burial in ground or concrete. One-wrench installation.

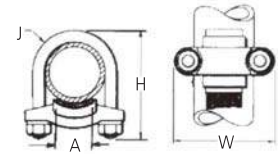


| Part Number | Conductor   |                        |            | Dimension |       |       |
|-------------|-------------|------------------------|------------|-----------|-------|-------|
|             | Tube I.P.S. | Rod Size or O.D. Range | Cable(mm²) | H         | J     | W     |
| GD1506      | 1           | 1-1/8-1-1/4            | 25~70      | 3-3/8     | 3-3/8 | 2-5/8 |
| GD1510      |             |                        | 70~120     |           |       | 3     |
| GD1606      | 1-1/4       | 1-3/8-1-1/2            | 25~70      | 3-1/2     |       |       |
| GD1610      |             |                        | 70~120     |           |       |       |
| GD1703C     | 1-1/2       | 1-5/8-1-7/8            | 10~25      | 4         |       |       |
| GD1706      |             |                        | 25~70      |           |       |       |
| GD1710      |             |                        | 70~120     |           |       |       |
| GD1714      |             |                        | 150~250    | 4-5/8     |       | 1/2   |
| GD1803C     | 2           | 2-2-3/8                | 10~25      | 4-3/8     | 3/8   | 3-3/4 |
| GD1806      |             |                        | 25~70      |           |       |       |
| GD1810      |             |                        | 70~120     |           |       |       |
| GD1814      |             |                        | 150~250    | 5-3/8     | 1/2   | 4-1/8 |
| GD1903C     | 2-1/2       | 2-1/2-2-7/8            | 10~25      | 5         | 3/8   | 4-1/4 |
| GD1906      |             |                        | 25~70      |           |       |       |
| GD1910      |             |                        | 70~120     |           |       |       |
| GD1914      |             |                        | 150~250    |           |       |       |
| GD2003C     | 3           | 3-3-1/2                | 10~25      | 5-5/8     | 3/8   | 4-7/8 |
| GD2006      |             |                        | 25~70      |           |       |       |
| GD2010      |             |                        | 70~120     |           |       |       |
| GD2014      |             |                        | 150~250    |           |       |       |
| GD2103C     | 3-1/2       | 3-1/2-4                | 10~25      | 6-1/4     | 3/8   | 5-3/8 |
| GD2106      |             |                        | 25~70      |           |       |       |
| GD2110      |             |                        | 70~120     |           |       |       |
| GD2114      |             |                        | 150~250    | 6-7/8     | 1/2   | 5-3/4 |
| GD2203C     | 4           | 4-4-1/2                | 10~25      | 6-3/8     | 3/8   | 5-7/8 |
| GD2206      |             |                        | 25~70      |           |       |       |
| GD2210      |             |                        | 70~120     |           |       |       |
| GD2214      |             |                        | 150~250    |           |       |       |

## ■ GROUND CONNECTOR

### For Copper Bar, Strap, Braid or Cable to Rod or Tube

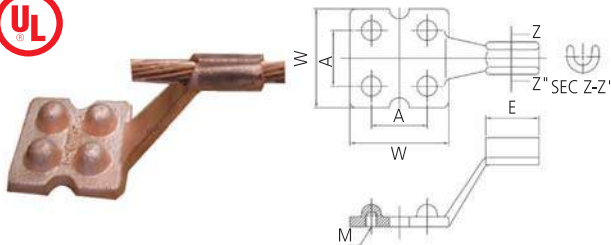
High copper alloy ground connector for joining bar, strap, braid or cable to rod or tube. High copper alloy cast body, SILICON BRONZE U-bolts, nuts and lockwashers make the GG particularly effective for use with braid for ground rods, switch handles, fence posts and gates. One-wrench installation.



(In.)

| Part Number | Conductor   |             | Dimension(In.) |             |       |       |     |
|-------------|-------------|-------------|----------------|-------------|-------|-------|-----|
|             | Tube I.P.S. | Rod         | A              | H           | J     | W     |     |
| GG_15_1     | 1           | 1-1/8-1-1/4 | 1              | 3-3/8       | 3/8   | 1-5/8 |     |
| GG-16-1     | 1-1/4       | 1-3/8-1-1/2 |                | 3-1/2       |       | 3     |     |
| GG-17-1     | 1-1/2       | 1-5/8-1-7/8 |                |             |       | 3-1/4 |     |
| GG-17-15    |             |             | 1-1/2          |             |       |       |     |
| GG-18-1     | 2           | 2-2-3/8     | 1              | 4-1/4       |       | 3-3/4 |     |
| GG-18-15    |             |             | 1-1/2          |             |       |       |     |
| GG-18-2     |             |             | 2-1/2          | 2-1/2-2-7/8 | 2     | 4-3/8 | 1/2 |
| GG-19-2     | 2-1/2       | 5           |                |             |       |       |     |
| GG-19-25    |             |             |                |             |       |       |     |
| GG-20-2     | 3           | 3-3-1/2     | 2              | 6-3/8       | 5-1/4 |       |     |
| GG-20-25    |             |             | 2-1/2          |             |       |       |     |
| GG-20-3     |             |             | 3              |             |       |       |     |
| GG-21-2     | 3-1/2       | 3-1/2-4     | 2              | 5-7/8       | 5-3/4 |       |     |
| GG-21-25    |             |             | 2-1/2          |             |       |       |     |
| GG-21-3     |             |             | 3              |             |       |       |     |
| GG-21-35    |             |             | 3-1/2          |             |       |       |     |
| GG-22-2     | 4           | 4-4-1/2     | 2              | 6-1/2       | 6-1/4 |       |     |
| GG-22-25    |             |             | 2-1/2          |             |       |       |     |
| GG-22-3     |             |             | 3              |             |       |       |     |
| GG-22-35    |             |             | 3-1/2          |             |       |       |     |
| GG-22-4     |             |             | 4              |             |       |       |     |
| GG-24-2     | 5           | -           | 2              | 7-5/8       |       | 7-1/4 |     |

## ■ GROUND FLUSH PLATE

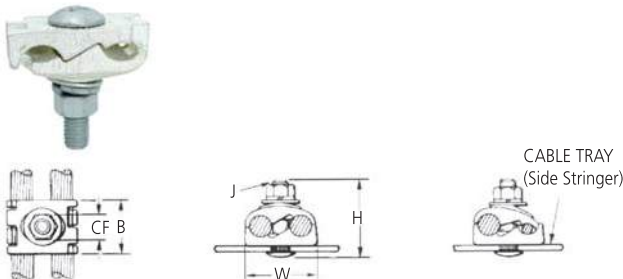


- Material: High Conductivity Copper
- Surface: Copper Finish

| Part Number | Copper Conductor Size (mm²) | Dimension (mm) |    |    |     |
|-------------|-----------------------------|----------------|----|----|-----|
|             |                             | W              | A  | E  | M   |
| GP-70       | 70                          | 60             | 25 | 30 | 3/8 |
| GP-95       | 95                          | 84             | 45 | 32 |     |
| GP-120      | 120                         |                |    | 40 |     |
| GP-150      | 150                         | 96             |    | 50 | 1/2 |
| GP-185      | 185                         |                |    |    |     |
| GP-240      | 240                         |                |    |    |     |
| GP-300      | 300                         | 100            |    | 56 |     |

## ■ CABLE TRAY GROUND CLAMP

This unique connector incorporates features which are unmatched. Made of tin-plated cast copper alloy, it accommodates either one or two conductors, copper or aluminum cable. In addition to a low profile head with a deep Phillips recess, the galvanized steel bolt has a ribbed neck which prevents rotation during installation when installed in a .44 diameter hole.

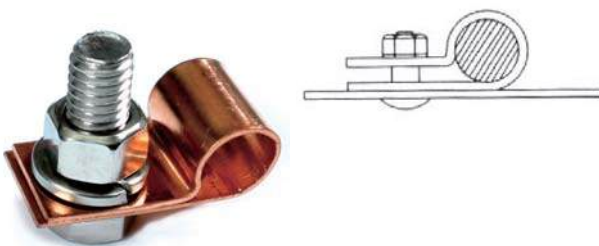


| Part Number | Accommodates Copper or Aluminum Conductor in Either Groove | Dimension (mm) |     |      |             |      |
|-------------|------------------------------------------------------------|----------------|-----|------|-------------|------|
|             |                                                            | B              | CF  | H    | J           | W    |
| GC-2506CT   | #6 Sol.(.162 Dia.)<br>-1/0 Str.(.372 Dia.)                 | 1.12           | .56 | 1.95 | 3/8"<br>-16 | 1.45 |
| GC-2607CT   | #2 Sol.(.258 Dia.)<br>-2/0 Str.(.419 Dia.)                 | 1.12           | .56 | 1.95 | 3/8"<br>-16 | 1.70 |
| GC-2910CT   | 2/0 Str.(.414 Dia.)<br>-250 kcmil (.575 Dia.)              | 1.12           | .56 | 2.20 | 3/8"<br>-16 | 1.98 |

※NOTE : The bolt head is mounted on the inside wall of cabletray to avoid damage to the cable insulation. May be used with aluminum or galvanized steel cable tray.

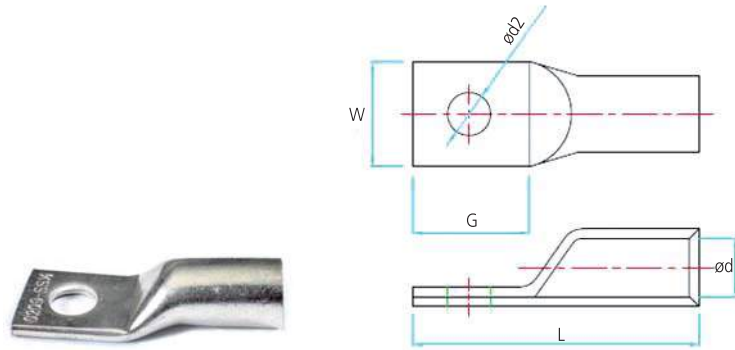
## ■ GROUND CLAMP

- Material : Electrolytic Copper
- Basic Hole Size : 3/8"



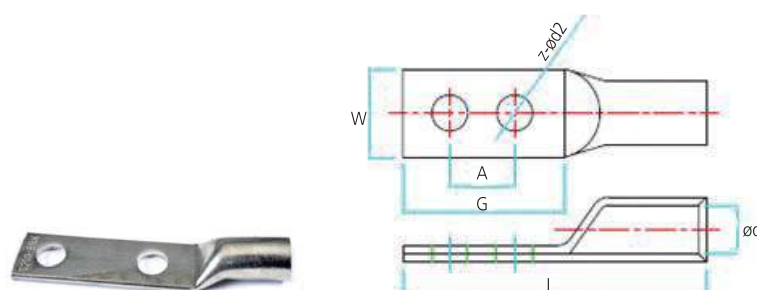
| Part Number | Conductor (mm <sup>2</sup> ) |
|-------------|------------------------------|
| GC-16       | 16                           |
| GC-25       | 25                           |
| GC-35       | 35                           |
| GC-60       | 60                           |
| GC-70       | 70                           |
| GC-100      | 95                           |
| GC-120      | 120                          |
| GC-150      | 150                          |
| GC-185      | 185                          |
| GC-240      | 240                          |
| GC-300      | 300                          |

## ■ POWER CONNECTOR, ONE HOLE



| Catalog Number   | Wire Range<br>(mm <sup>2</sup> ) | Stud<br>Size(in.) | Dimension (mm) |     |    |      |      |
|------------------|----------------------------------|-------------------|----------------|-----|----|------|------|
|                  |                                  |                   | W              | L   | G  | ød   | ød2  |
| KPCO 0101-SS1/4  | 10                               | 1/4               | 10             | 33  | 14 | 4.5  | 6.5  |
| KPCO 0102-SS1/4  | 16                               | 1/4               | 12             | 36  | 14 | 5.4  | 6.5  |
| KPCO 0102-SS5/16 |                                  | 5/16              | 15.5           | 42  | 20 | 5.4  | 8.5  |
| KPCO 0102-SS3/8  |                                  | 3/8               |                |     |    |      | 10.5 |
| KPCO 0103-SS1/4  | 25                               | 1/4               | 14             | 41  | 17 | 6.7  | 6.5  |
| KPCO 0103-SS5/16 |                                  | 5/16              |                |     |    |      | 8.5  |
| KPCO 0103-SS3/8  |                                  | 3/8               |                |     |    |      | 10.5 |
| KPCO 0104-SS1/4  | 35                               | 1/4               | 16             | 48  | 20 | 8.1  | 6.5  |
| KPCO 0104-SS5/16 |                                  | 5/16              |                |     |    |      | 8.5  |
| KPCO 0104-SS3/8  |                                  | 3/8               |                |     |    |      | 10.5 |
| KPCO 0105-SS5/16 | 50                               | 5/16              | 18             | 52  | 22 | 9.5  | 8.5  |
| KPCO 0105-SS3/8  |                                  | 3/8               |                |     |    |      | 10.5 |
| KPCO 0105-SS1/2  |                                  | 1/2               |                |     |    |      | 13   |
| KPCO 0107-SS5/16 | 70                               | 5/16              | 22             | 56  | 25 | 11.3 | 8.5  |
| KPCO 0107-SS3/8  |                                  | 3/8               |                |     |    |      | 10.5 |
| KPCO 0107-SS1/2  |                                  | 1/2               |                |     |    |      | 13   |
| KPCO 0108-SS5/16 | 95                               | 5/16              | 25             | 67  | 31 | 13.5 | 8.5  |
| KPCO 0108-SS3/8  |                                  | 3/8               |                |     |    |      | 10.5 |
| KPCO 0108-SS1/2  |                                  | 1/2               |                |     |    |      | 13   |
| KPCO 0108-SS5/8  |                                  | 5/8               |                |     |    |      | 17   |
| KPCO 0110-SS3/8  | 120                              | 3/8               | 28             | 71  | 31 | 15.2 | 10.5 |
| KPCO 0110-SS1/2  |                                  | 1/2               |                |     |    |      | 13   |
| KPCO 0110-SS5/8  |                                  | 5/8               |                |     |    |      | 17   |
| KPCO 0111-SS3/8  | 150                              | 3/8               | 32             | 78  | 33 | 17   | 10.5 |
| KPCO 0111-SS1/2  |                                  | 1/2               |                |     |    |      | 13   |
| KPCO 0111-SS5/8  |                                  | 5/8               |                |     |    |      | 17   |
| KPCO 0112-SS3/8  | 185                              | 3/8               | 35             | 78  | 33 | 19   | 10.5 |
| KPCO 0112-SS1/2  |                                  | 1/2               |                |     |    |      | 13   |
| KPCO 0112-SS5/8  |                                  | 5/8               |                |     |    |      | 17   |
| KPCO 0114-SS3/8  | 240                              | 3/8               | 41             | 97  | 34 | 22   | 10.5 |
| KPCO 0114-SS1/2  |                                  | 1/2               |                |     |    |      | 13   |
| KPCO 0114-SS5/8  |                                  | 5/8               |                |     |    |      | 17   |
| KPCO 0115-SS3/8  | 300                              | 3/8               | 45             | 101 | 41 | 24   | 10.5 |
| KPCO 0115-SS1/2  |                                  | 1/2               |                |     |    |      | 13   |
| KPCO 0115-SS5/8  |                                  | 5/8               |                |     |    |      | 17   |

## ■ POWER CONNECTOR, TWO HOLE



| Catalog Number   | Wire Range<br>(mm <sup>2</sup> ) | Stud<br>Size(in.) | Dimension (mm) |     |      |      |      |      |
|------------------|----------------------------------|-------------------|----------------|-----|------|------|------|------|
|                  |                                  |                   | W              | L   | G    | A    | ød   | ød2  |
| KPCT 0201-SS1/4  | 10                               | 1/4               | 10             | 67  | 48   | 19   | 4.5  | 6.5  |
| KPCT 0202-SS5/16 | 16                               | 5/16              | 15.5           | 70  | 48   | 19   | 5.4  | 8.5  |
| KPCT 0202-SS3/8  |                                  | 3/8               |                |     |      |      |      | 10.5 |
| KPCT 0203-SS5/16 | 25                               | 5/16              | 15.5           | 71  | 48   | 19   | 6.7  | 8.5  |
| KPCT 0203-SS3/8  |                                  | 3/8               |                |     |      |      |      | 10.5 |
| KPCT 0204-SS5/16 | 35                               | 5/16              | 16             | 74  | 47   | 19   | 8.1  | 8.5  |
| KPCT 0204-SS3/8  |                                  | 3/8               |                |     |      |      |      | 10.5 |
| KPCT 0205-SS5/16 | 50                               | 5/16              | 18             | 100 | 72.5 | 44.5 | 9.5  | 8.5  |
| KPCT 0205-SS3/8  |                                  | 3/8               |                |     |      |      |      | 10.5 |
| KPCT 0205-SS1/2  |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0207-SS3/8S | 70                               | 3/8               | 22             | 87  | 56   | 24.5 | 11.3 | 10.5 |
| KPCT 0207-SS1/2S |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0207-SS3/8  |                                  | 3/8               | 22             | 107 | 76   | 44.5 | 11.3 | 10.5 |
| KPCT 0207-SS1/2  |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0208-SS3/8S | 95                               | 3/8               | 25             | 89  | 56   | 24.5 | 13.5 | 10.5 |
| KPCT 0208-SS1/2S |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0208-SS3/8  |                                  | 3/8               | 25             | 109 | 76   | 44.5 | 13.5 | 10.5 |
| KPCT 0208-SS1/2  |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0208-SS5/8  |                                  | 5/8               | 25             | 115 | 82   | 44.5 | 13.5 | 17   |
| KPCT 0210-SS3/8  | 120                              | 3/8               | 28             | 118 | 78   | 44.5 | 15.2 | 10.5 |
| KPCT 0210-SS1/2  |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0210-SS5/8  |                                  | 5/8               |                |     |      |      |      | 17   |
| KPCT 0211-SS3/8  | 150                              | 3/8               | 32             | 125 | 80   | 44.5 | 17   | 10.5 |
| KPCT 0211-SS1/2  |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0211-SS5/8  |                                  | 5/8               |                |     |      |      |      | 17   |
| KPCT 0212-SS3/8  | 185                              | 3/8               | 35             | 129 | 84   | 44.5 | 19   | 10.5 |
| KPCT 0212-SS1/2  |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0212-SS5/8  |                                  | 5/8               |                |     |      |      |      | 17   |
| KPCT 0214-SS3/8  | 240                              | 3/8               | 41             | 147 | 84   | 44.5 | 22   | 10.5 |
| KPCT 0214-SS1/2  |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0214-SS5/8  |                                  | 5/8               |                |     |      |      |      | 17   |
| KPCT 0215-SS3/8  | 300                              | 3/8               | 45             | 147 | 87   | 44.5 | 24   | 10.5 |
| KPCT 0215-SS1/2  |                                  | 1/2               |                |     |      |      |      | 13   |
| KPCT 0215-SS5/8  |                                  | 5/8               |                |     |      |      |      | 17   |

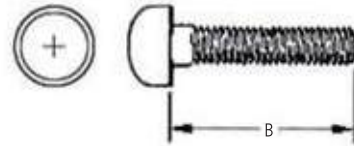
## ■ SILICON BRONZE HEX HEAD BOLT

SILICON BRONZE bolts combine high strength with corrosion resistance. Bolts up to 2 inches long are fully threaded; longer bolts are threaded for two inches. Heads have American Standard dimension, and the threads are per American National coarse Series, Class #2 fit. The silicon bronze is per ASTM B99



| Catalog Number | Thread Size (in.) | B Length | Catalog Number | Thread Size (in.) | B Length |
|----------------|-------------------|----------|----------------|-------------------|----------|
| KBB-25X50      | 1/4~20            | 1/2 "    | KBB-38X500     | 3/8~16            | 5 "      |
| KBB-25X62      | 1/4~20            | 5/8 "    | KBB-44X150     | 7/16~14           | 1-1/2 "  |
| KBB-25X75      | 1/4~20            | 3/4 "    | KBB-44X200     | 7/16~14           | 2 "      |
| KBB-25X100     | 1/4~20            | 1 "      | KBB-50X75      | 1/2~13            | 3/4 "    |
| KBB-25X125     | 1/4~20            | 1-1/4 "  | KBB-50X100     | 1/2~13            | 1 "      |
| KBB-25X150     | 1/4~20            | 1-1/2 "  | KBB-50X125     | 1/2~13            | 1-1/4 "  |
| KBB-25X200     | 1/4~20            | 2 "      | KBB-50X150     | 1/2~13            | 1-1/2 "  |
| KBB-25X250     | 1/4~20            | 2-1/2 "  | KBB-50X175     | 1/2~13            | 1-3/4 "  |
| KBB-25X300     | 1/4~20            | 3 "      | KBB-50X200     | 1/2~13            | 2 "      |
| KBB-31X50      | 5/16~18           | 1/2 "    | KBB-50X225     | 1/2~13            | 2-1/4 "  |
| KBB-31X62      | 5/16~18           | 5/8 "    | KBB-50X250     | 1/2~13            | 2-1/2 "  |
| KBB-31X75      | 5/16~18           | 3/4 "    | KBB-50X275     | 1/2~13            | 2-3/4 "  |
| KBB-31X100     | 5/16~18           | 1 "      | KBB-50X300     | 1/2~13            | 3 "      |
| KBB-31X125     | 5/16~18           | 1-1/4 "  | KBB-50X325     | 1/2~13            | 3-1/4 "  |
| KBB-31X150     | 5/16~18           | 1-1/2 "  | KBB-50X350     | 1/2~13            | 3-1/2 "  |
| KBB-31X175     | 5/16~18           | 1-3/4 "  | KBB-50X375     | 1/2~13            | 3-3/4 "  |
| KBB-31X200     | 5/16~18           | 2 "      | KBB-50X400     | 1/2~13            | 4 "      |
| KBB-31X250     | 5/16~18           | 2-1/2 "  | KBB-50X450     | 1/2~13            | 4-1/2 "  |
| KBB-31X300     | 5/16~18           | 3 "      | KBB-50X500     | 1/2~13            | 5 "      |
| KBB-38X50      | 3/8~16            | 1/2 "    | KBB-50X550     | 1/2~13            | 5-1/2 "  |
| KBB-38X62      | 3/8~16            | 5/8 "    | KBB-50X600     | 1/2~13            | 6 "      |
| KBB-38X75      | 3/8~16            | 3/4 "    | KBB-62X100     | 5/8~11            | 1 "      |
| KBB-38X88      | 3/8~16            | 7/8 "    | KBB-62X125     | 5/8~11            | 1-1/4 "  |
| KBB-38X100     | 3/8~16            | 1 "      | KBB-62X150     | 5/8~11            | 1-1/2 "  |
| KBB-38X125     | 3/8~16            | 1-1/4 "  | KBB-62X175     | 5/8~11            | 1-3/4 "  |
| KBB-38X150     | 3/8~16            | 1-1/2 "  | KBB-62X200     | 5/8~11            | 2 "      |
| KBB-38X175     | 3/8~16            | 1-3/4 "  | KBB-62X225     | 5/8~11            | 2-1/4 "  |
| KBB-38X200     | 3/8~16            | 2 "      | KBB-62X250     | 5/8~11            | 2-1/2 "  |
| KBB-38X225     | 3/8~16            | 2-1/4 "  | KBB-62X275     | 5/8~11            | 2-3/4 "  |
| KBB-38X250     | 3/8~16            | 2-1/2 "  | KBB-62X300     | 5/8~11            | 3 "      |
| KBB-38X275     | 3/8~16            | 2-3/4 "  | KBB-62X325     | 5/8~11            | 3-1/4 "  |
| KBB-38X300     | 3/8~16            | 3 "      | KBB-62X350     | 5/8~11            | 3-1/2 "  |
| KBB-38X325     | 3/8~16            | 3-1/4 "  | KBB-62X400     | 5/8~11            | 4 "      |
| KBB-38X350     | 3/8~16            | 3-1/2 "  | KBB-62X450     | 5/8~11            | 4-1/2 "  |
| KBB-38X400     | 3/8~16            | 4 "      | KBB-62X500     | 5/8~11            | 5 "      |
| KBB-38X450     | 3/8~16            | 4-1/2 "  | KBB-62X600     | 5/8~11            | 6 "      |

## ■ SILICON BRONZE CAPSCREW ROUND HEAD BOLT

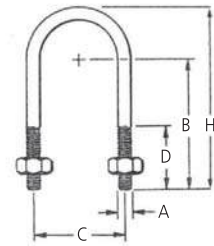


| Catalog Number | Thread Size (in.) | B Length | Catalog Number | Thread Size (in.) | B Length |
|----------------|-------------------|----------|----------------|-------------------|----------|
| KRB-25X50      | 1/4~20            | 1/2 "    | KRB-38X500     | 3/8~16            | 5 "      |
| KRB-25X62      | 1/4~20            | 5/8 "    | KRB-44X150     | 7/16~14           | 1-1/2 "  |
| KRB-25X75      | 1/4~20            | 3/4 "    | KRB-44X200     | 7/16~14           | 2 "      |
| KRB-25X100     | 1/4~20            | 1 "      | KRB-50X75      | 1/2~13            | 3/4 "    |
| KRB-25X125     | 1/4~20            | 1-1/4 "  | KRB-50X100     | 1/2~13            | 1 "      |
| KRB-25X150     | 1/4~20            | 1-1/2 "  | KRB-50X125     | 1/2~13            | 1-1/4 "  |
| KRB-25X200     | 1/4~20            | 2 "      | KRB-50X150     | 1/2~13            | 1-1/2 "  |
| KRB-25X250     | 1/4~20            | 2-1/2 "  | KRB-50X175     | 1/2~13            | 1-3/4 "  |
| KRB-25X300     | 1/4~20            | 3 "      | KRB-50X200     | 1/2~13            | 2 "      |
| KRB-31X50      | 5/16~18           | 1/2 "    | KRB-50X225     | 1/2~13            | 2-1/4 "  |
| KRB-31X62      | 5/16~18           | 5/8 "    | KRB-50X250     | 1/2~13            | 2-1/2 "  |
| KRB-31X75      | 5/16~18           | 3/4 "    | KRB-50X275     | 1/2~13            | 2-3/4 "  |
| KRB-31X100     | 5/16~18           | 1 "      | KRB-50X300     | 1/2~13            | 3 "      |
| KRB-31X125     | 5/16~18           | 1-1/4 "  | KRB-50X325     | 1/2~13            | 3-1/4 "  |
| KRB-31X150     | 5/16~18           | 1-1/2 "  | KRB-50X350     | 1/2~13            | 3-1/2 "  |
| KRB-31X175     | 5/16~18           | 1-3/4 "  | KRB-50X375     | 1/2~13            | 3-3/4 "  |
| KRB-31X200     | 5/16~18           | 2 "      | KRB-50X400     | 1/2~13            | 4 "      |
| KRB-31X250     | 5/16~18           | 2-1/2 "  | KRB-50X450     | 1/2~13            | 4-1/2 "  |
| KRB-31X300     | 5/16~18           | 3 "      | KRB-50X500     | 1/2~13            | 5 "      |
| KRB-38X50      | 3/8~16            | 1/2 "    | KRB-50X550     | 1/2~13            | 5-1/2 "  |
| KRB-38X62      | 3/8~16            | 5/8 "    | KRB-50X600     | 1/2~13            | 6 "      |
| KRB-38X75      | 3/8~16            | 3/4 "    | KRB-62X100     | 5/8~11            | 1 "      |
| KRB-38X88      | 3/8~16            | 7/8 "    | KRB-62X125     | 5/8~11            | 1-1/4 "  |
| KRB-38X100     | 3/8~16            | 1 "      | KRB-62X150     | 5/8~11            | 1-1/2 "  |
| KRB-38X125     | 3/8~16            | 1-1/4 "  | KRB-62X175     | 5/8~11            | 1-3/4 "  |
| KRB-38X150     | 3/8~16            | 1-1/2 "  | KRB-62X200     | 5/8~11            | 2 "      |
| KRB-38X175     | 3/8~16            | 1-3/4 "  | KRB-62X225     | 5/8~11            | 2-1/4 "  |
| KRB-38X200     | 3/8~16            | 2 "      | KRB-62X250     | 5/8~11            | 2-1/2 "  |
| KRB-38X225     | 3/8~16            | 2-1/4 "  | KRB-62X275     | 5/8~11            | 2-3/4 "  |
| KRB-38X250     | 3/8~16            | 2-1/2 "  | KRB-62X300     | 5/8~11            | 3 "      |
| KRB-38X275     | 3/8~16            | 2-3/4 "  | KRB-62X325     | 5/8~11            | 3-1/4 "  |
| KRB-38X300     | 3/8~16            | 3 "      | KRB-62X350     | 5/8~11            | 3-1/2 "  |
| KRB-38X325     | 3/8~16            | 3-1/4 "  | KRB-62X400     | 5/8~11            | 4 "      |
| KRB-38X350     | 3/8~16            | 3-1/2 "  | KRB-62X450     | 5/8~11            | 4-1/2 "  |
| KRB-38X400     | 3/8~16            | 4 "      | KRB-62X500     | 5/8~11            | 5 "      |
| KRB-38X450     | 3/8~16            | 4-1/2 "  | KRB-62X600     | 5/8~11            | 6 "      |

D

## ■ SILICON BRONZE U-BOLT

SILICON BRONZE U-BOLTS are specifically designed for electrical connections to pipe and rod. The U-BOLTS are threaded on the straight portion of the legs only allowing for more contact surface on the pipe or rod. American National Coarse Threads Class #2 fit. The silicon bronze is per ASTM B99.



| Part Number | Thread Size(A) | Dimension (In.) |       |      |      |
|-------------|----------------|-----------------|-------|------|------|
|             |                | F               | C     | D    | B    |
| UB-101      | 1/4-20         | 1.38            | 0.75  | 0.75 | 0.88 |
| UB-104      |                | 1.81            | 1.12  | 0.88 | 1.12 |
| UB-105      |                | 2.03            | 1.31  | 1.00 | 1.25 |
| UB-106      |                | 2.31            | 1.62  | 1.12 | 1.38 |
| UB-107      |                | 2.66            | 1.94  | 1.31 | 1.56 |
| UB-336      |                | 1.50            | 0.88  | 0.62 | 0.88 |
| UB-337      | 3/8-16         | 1.94            | 1.12  | 0.75 | 1.19 |
| UB-178      |                | 2.00            | 0.88  | 0.75 | 1.38 |
| UB-354      |                | 2.44            | 1.25  | 1.00 | 1.62 |
| UB-187      |                | 2.47            | 1.16  | 1.06 | 1.69 |
| UB-271      |                | 2.50            | 1.00  | 1.19 | 1.81 |
| UB-222      |                | 2.69            | 1.50  | 1.12 | 1.75 |
| UB-242      |                | 2.72            | 1.16  | 1.31 | 1.94 |
| UB-383      |                | 2.75            | 0.94  | 1.47 | 2.09 |
| UB-269      |                | 2.78            | 1.19  | 1.38 | 2.00 |
| UB-357      |                | 2.78            | 1.69  | 1.12 | 1.75 |
| UB-384      |                | 2.91            | 1.44  | 1.38 | 2.00 |
| UB-249      |                | 3.00            | 1.50  | 1.44 | 2.06 |
| UB-1031     |                | 3.31            | 1.75  | 1.90 | 2.25 |
| UB-244      |                | 3.31            | 1.75  | 1.62 | 2.25 |
| UB-199      |                | 3.41            | 2.34  | 1.44 | 2.05 |
| UB-204      |                | 3.47            | 2.06  | 1.62 | 2.25 |
| UB-124      |                | 3.50            | 2.75  | 1.31 | 1.94 |
| UB-268      |                | 3.97            | 2.34  | 2.00 | 2.62 |
| UB-257      |                | 4.16            | 2.81  | 1.94 | 2.56 |
| UB-1032     |                | 4.41            | 2.81  | 2.56 | 2.81 |
| UB-310      |                | 4.41            | 2.81  | 2.19 | 2.81 |
| UB-266      |                | 4.97            | 3.31  | 2.50 | 3.12 |
| UB-275      |                | 5.09            | 3.31  | 3.62 | 4.25 |
| UB-267      |                | 5.53            | 3.94  | 2.75 | 3.38 |
| UB-258      |                | 5.56            | 4.00  | 2.75 | 3.38 |
| UB-264      |                | 6.16            | 4.44  | 3.12 | 3.75 |
| UB-1033     |                | 6.16            | 4.44  | 3.50 | 3.75 |
| UB-261      |                | 6.34            | 4.94  | 3.06 | 3.69 |
| UB-422      |                | 7.69            | 6.00  | 3.88 | 4.50 |
| UB-1027     |                | 8.12            | 7.12  | 2.88 | 4.38 |
| UB-1028     |                | 9.62            | 9.12  | 2.88 | 4.38 |
| UB-1029     |                | 11.20           | 11.25 | 2.88 | 5.38 |
| UB-1030     |                | 12.70           | 13.25 | 2.88 | 5.88 |
| UB-224      | 1/2-13         | 2.44            | 1.12  | 0.88 | 1.62 |
| UB-358      |                | 2.66            | 1.31  | 1.00 | 1.75 |

(In.)

| Part Number | Thread Size(A) | Dimension (In.) |      |      |      |
|-------------|----------------|-----------------|------|------|------|
|             |                | F               | C    | D    | B    |
| UB-226      | 1/2-13         | 2.75            | 1.25 | 1.12 | 1.88 |
| UB-291      |                | 2.81            | 1.19 | 1.22 | 1.97 |
| UB-293      |                | 2.81            | 1.75 | 1.19 | 1.69 |
| UB-464      |                | 3.12            | 1.81 | 1.31 | 1.96 |
| UB-540      |                | 3.19            | 1.38 | 1.75 | 2.25 |
| UB-254      |                | 3.41            | 1.31 | 1.75 | 2.50 |
| UB-328      |                | 3.41            | 2.94 | 0.94 | 1.69 |
| UB-400      |                | 4.03            | 1.31 | 2.38 | 3.12 |
| UB-256      |                | 4.16            | 2.22 | 2.06 | 2.81 |
| UB-230      |                | 4.34            | 2.94 | 1.88 | 2.62 |
| UB-311      |                | 4.44            | 1.88 | 2.50 | 3.25 |
| UB-302      |                | 4.62            | 2.47 | 2.38 | 3.12 |
| UB-232      |                | 4.97            | 3.44 | 2.25 | 3.00 |
| UB-260      |                | 5.34            | 2.94 | 2.88 | 3.62 |
| UB-390      |                | 5.38            | 2.50 | 3.12 | 3.88 |
| UB-263      |                | 5.78            | 4.56 | 2.50 | 3.25 |
| UB-282      |                | 6.31            | 4.12 | 3.25 | 4.00 |
| UB-236      |                | 6.41            | 5.06 | 2.88 | 3.62 |
| UB-339      |                | 6.66            | 1.31 | 5.00 | 5.75 |
| UB-436      |                | 6.66            | 4.56 | 3.62 | 4.12 |
| UB-262      |                | 6.78            | 5.06 | 3.25 | 4.00 |
| UB-392      | 5/8-11         | 7.06            | 1.62 | 5.25 | 6.00 |
| UB-416      |                | 7.53            | 5.06 | 4.00 | 4.75 |
| UB-300      |                | 7.62            | 6.12 | 3.56 | 4.31 |
| UB-306      |                | 7.88            | 6.12 | 3.81 | 4.56 |
| UB-437      | 3/4-10         | 8.56            | 6.12 | 4.50 | 5.25 |
| UB-294      |                | 3.50            | 1.38 | 1.75 | 2.50 |
| UB-314      |                | 3.66            | 2.09 | 1.56 | 2.31 |
| UB-425      |                | 3.72            | 2.31 | 1.50 | 2.25 |
| UB-317      |                | 4.97            | 1.81 | 3.00 | 3.75 |
| UB-315      |                | 5.56            | 2.09 | 3.44 | 4.19 |
| UB-318      |                | 4.22            | 2.44 | 1.87 | 2.62 |
| UB-344      | 3/4-10         | 4.72            | 1.94 | 2.63 | 3.38 |
| UB-319      |                | 6.34            | 2.44 | 4.00 | 4.75 |

(In.)

## ■ SILICON BRONZE HEX NUT

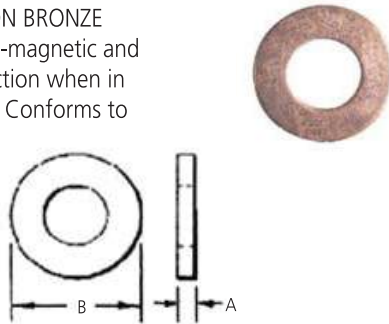
SILICON BRONZE hexagon regular nuts are non-magnetic and are made to American Standard dimensions. American National Coarse Series threads, #2 fit.



| Catalog Number | Thread Size (in.) |
|----------------|-------------------|
| KHN-25         | 1/4~20            |
| KHN-31         | 5/16~18           |
| KHN-38         | 3/8~16            |
| KHN-44         | 7/16~14           |
| KHN-50         | 1/2~13            |
| KHN-62         | 5/8~11            |

## ■ SILICON BRONZE FLAT WASHER

High strength SILICON BRONZE Flat Washers are non-magnetic and free from galvanic action when in contact with copper. Conforms to SAE standards.



| Catalog Number | For Bolt Size (in.) | Nominal Dimensions in Inches |        |
|----------------|---------------------|------------------------------|--------|
|                |                     | A                            | B      |
| KFW-25         | 1/4                 | 1/16                         | 5/8    |
| KFW-31         | 5/16                | 1/16                         | 11/16  |
| KFW-38         | 3/8                 | 1/16                         | 13/16  |
| KFW-44         | 7/16                | 1/16                         | 15/16  |
| KFW-50         | 1/2                 | 1/16                         | 1-1/16 |
| KFW-62         | 5/8                 | 3/32                         | 1-5/16 |

## ■ SILICON BRONZE SPLIT LOCK WASHER

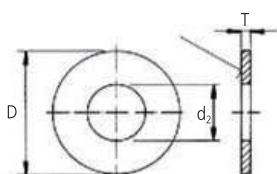
SILICON BRONZE spring type lockwasher are high resiliency and exerts constant pressure on the face of the nut, preventing vibration from loosening the nut.



| Catalog Number | Thread Size (in.) |
|----------------|-------------------|
| KSLW-25        | 1/4               |
| KSLW-31        | 5/16              |
| KSLW-38        | 3/8               |
| KSLW-44        | 7/16              |
| KSLW-50        | 1/2               |
| KSLW-62        | 5/8               |

## ■ BI-METALLIC WASHER

- Material : Al 99.5 Sheet, One-side Copper plated



| Catalog Number | For Bolt Size (in.) | Dimensions (mm) |    |   |
|----------------|---------------------|-----------------|----|---|
|                |                     | d <sub>2</sub>  | D  | T |
| KBW-25         | 1/4                 | 6.5             | 15 | 1 |
| KBW-31         | 5/16                | 8.5             | 18 | 1 |
| KBW-38         | 3/8                 | 11              | 26 | 1 |
| KBW-44         | 7/16                | 15              | 28 | 1 |
| KBW-50         | 1/2                 | 13              | 30 | 1 |
| KBW-62         | 5/8                 | 17              | 35 | 1 |

## ■ BOLT · NUT · SCREW



### ▶ Stainless Round Head Machine Screw

| Part Number | Description                                             |
|-------------|---------------------------------------------------------|
| KRL-130L    | 1/4" x 1/2" Length. Approximate pieces per pound : 93   |
| KRL-131L    | 1/4" x 3/4" Length. Approximate pieces per pound : 80   |
| KRL-132L    | 1/4" x 1" Length. Approximate pieces per pound : 61     |
| KRL-133L    | 1/4" x 1-1/2" Length. Approximate pieces per pound : 51 |
| KRL-134L    | 1/4" x 2" Length. Approximate pieces per pound          |



### ▶ Stainless Steel Washers

| Part Number | Description                                               |
|-------------|-----------------------------------------------------------|
| KRL-249L    | 1/4" I.D. x 3/4" O.D. Approximate pieces per pound : 263  |
| KRL-249AL   | 5/16" I.D. x 7/8" O.D. Approximate pieces per pound : 219 |
| KRL-249BL   | 3/8" I.D. x 7/8" O.D. Approximate pieces per pound : 164  |
| KRL-249CL   | 1/2" I.D. x 1-1/4" O.D. Approximate pieces per pound : 60 |



### ▶ Sheet Metal or Wood Screws With Round Head

| Part Number | Description                                             |
|-------------|---------------------------------------------------------|
| KRL-224     | 1" x No.12 Screw. Approximate pieces per pound : 104    |
| KRL-225     | 1-1/2" x No.12 Screw. Approximate pieces per pound : 76 |

### ▶ Sheet Metal Screws

| Part Number | Description                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------|
| KRL-125A    | Stainless Steel Screw, binder head, 3/4" long with phillips head. Approximate pieces per pound : 174 |



### ▶ Copper U-Bolt Clamp

| Part Number | Description                                                   |
|-------------|---------------------------------------------------------------|
| KRL-182     | 3/8" Dia Complete Silicon Bronze two hex nuts and lockwashers |

## ■ ADHESIVE REQUIREMENT

### DESCRIPTION

Loctite® PL® Premium® Polyurethane Construction Adhesive is a one component, polyurethane based, moisture-curing adhesive. It is VOC compliant and contains no chlorinated solvents or water. Loctite® PL® Premium® Provides superior adhesion to most common construction materials. It can be used for interior or exterior projects and is three times as strong as conventional solvent based construction adhesives. It is also waterproof, paintable and cures even in cold temperatures. Ideal for sub floor installations.

### RECOMMENDED FOR:

Bonds most common construction materials such as wood, treated wood, hardwood flooring, concrete, stone, marble, slate, masonry, brick, foam insulation of all sorts, carpets, metal, lead, cement-based products, ceramic, fiberglass, drywall and mirrors.

### NOT RECOMMENDED FOR:

- Plastic Tub Surrounds
- Water submersion applications
- Polystyrene, polyethylene or polypropylene.
- Certain materials such as rubbers and plastics may have bonding difficulties. Test before use.

### FEATURES \$ BENEFITS:

| Feature                                  | Benefits                                                                                              |
|------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Low VOC content .....                    | Meets stringent state & federal regulatory requirements                                               |
| Waterproof .....                         | Great for interior or exterior applications                                                           |
| Meets and exceeds APA AFG-01 specs ..... | Can be applied directly to dry, wet or frozen lumber                                                  |
| Low odor .....                           | No strong solvent odor; Great for interior use                                                        |
| Strong and versatile .....               | Permanently bonds together almost any substrate                                                       |
| High strength .....                      | Stronger than many substrates it joins together; Up to 3 times the strength of conventional adhesives |
| Broad Service Temperature .....          | Suitable for use in hot and cold environments                                                         |

| Catalog Number | Size           |
|----------------|----------------|
| KRL-172X       | 10fl.OZ(295ml) |



D

## ■ SOLID COPPER AIR TERMINAL



Solid copper stack with nickel tip for lightning air terminals

### ► Class II Solid Copper 1/2 " Diameter Air Terminals

| Catalog Number | Dia(In.) | Length(mm) |
|----------------|----------|------------|
| KRL-331A       | 1/2 "    | 420        |
| KRL-331B       |          | 610        |
| KRL-331C       |          | 920        |
| KRL-331D       |          | 1220       |
| KRL-331E       |          | 2440       |

### ► Class III Solid Copper 5/8 " Diameter Air Terminals

| Catalog Number | Dia(In.) | Length(mm) |
|----------------|----------|------------|
| KRL-332A       | 5/8 "    | 420        |
| KRL-332B       |          | 610        |
| KRL-332C       |          | 920        |
| KRL-332D       |          | 1220       |
| KRL-510        |          | 2440       |

## ■ AIR TERMINAL ADAPTER



### ► Adapter Material : Copper Alloy

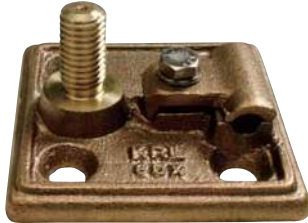
| Catalog Number | I.D Top | I.D Bottom |
|----------------|---------|------------|
| KRL-63C        | 1/2 "   | 5/8 "      |
| KRL-63X        | 1/2 "   | 1/2 "      |
| KRL-63W        | 5/8 "   | 5/8 "      |

### ► Adjustable Adapter Material : Cast Copper Alloy



| Catalog Number | Top   |       | Bottom |
|----------------|-------|-------|--------|
|                | O.D   | I.D   | I.D    |
| KRL-63A        | 5/8 " | 3/8 " | 5/8 "  |
| KRL-63D        | 5/8 " | 3/8 " | 1/2 "  |
| KRL-63F        | -     | 1/2 " | 5/8 "  |

## AIR TERMINAL BASE



- **KRL-60X**  
Adhesive Cast Copper Alloy Point Base  
With Bolt Pressure Cable Clamp  
For All Adapter Type  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)  
Outside Thread : 5/8"



- **KRL-336**  
Adjustable Cast Copper Alloy Point Base  
With Bolt Pressure Cable Clamp  
For All Adapter Type  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)  
Outside Thread : 5/8"



- **KRL-688C**  
Cast Copper Alloy Cross Run Point Base  
For All Adapter Type  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)  
Outside Thread : 5/8"

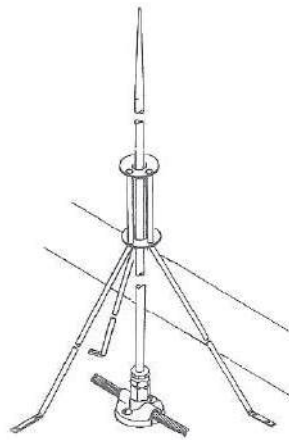


- **KRL-61B**  
Cast Copper Alloy Heavy Duty Flat  
Surface Point Base  
For All Adapter Type  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)  
Outside Thread : 5/8"



- **KRL-267**  
3" Diameter Cast Copper Alloy Paste  
Down Cable Fastener  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)

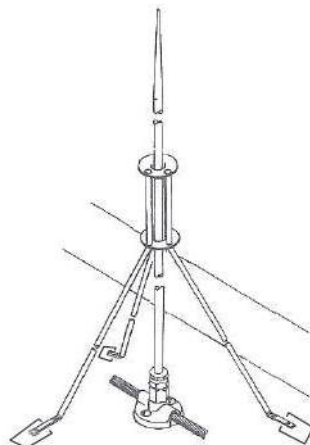
## ■ AIR TERMINAL BRACE



- ▶ **KRL-A110**  
Plated Steel Tripod Brace  
18" length for 30" Air Terminal

- ▶ **KRL-A111**  
Plated Steel Tripod Brace  
24" length for 36" Air Terminal

- ▶ **KRL-A112**  
Plated Steel Tripod Brace  
36" length for 48" Air Terminal



- ▶ **KRL-A110F**  
Plated Steel Tripod Brace  
18" length for 30" Air Terminal

- ▶ **KRL-A111F**  
Plated Steel Tripod Brace  
24" length for 36" Air Terminal

- ▶ **KRL-A112F**  
Plated Steel Tripod Brace  
36" length for 48" Air Terminal

(Flat Feet Tyhpe "F")

Three leg tripod braces are furnished in copper and used with our tube point air terminals. For proper length, see the description below. Braces are made of 1/4" rod and are pliable to permit shaping to roof. Other lengths are available upon request.

## ■ CONNECTOR AND BONDING MATERIAL



- ▶ **KRL-119**  
Cast Copper Alloy Heavy Duty  
Cross Run Clamp  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)



- ▶ **KRL-304**  
A Heavy Duty Cast Copper Alloy Pressure Type.  
"TEE" Splicer For Splicing Cable Through  
AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)



- ▶ **KRL-G28**  
Cast Copper Alloy 2" All Purpose Clamp  
Used For Connecting Two Cable or Rod  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)



- ▶ **KRL-28U**  
Cast Copper Alloy 2" All Purpose Silicon  
Bronze U-Bolt Clamp Used in Conjunction  
With Ground Rod Clamps For Connecting to  
Counterpoise Ground Systems  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)  
Ground Rod up to 3/4" diameter



- ▶ **KRL-121A**  
Cables Holder Stamped copper  
5/8" Wide with hole for 1/4" bolt  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)

## ■ ANCHOR TYPE FASTENER



- ▶ **KRL-294**  
Expansion Anchor For 1/4" screws  
1-1/4" long, drill Size 1/2"
- ▶ **KRL-294A**  
Expansion Anchor For 5/16" screws  
1-1/2" long, drill Size 9/16"
- ▶ **KRL-561**  
Expansion Anchor For 3/8" screws  
2" long, drill Size 3/4"



- ▶ **KRL-295**  
Lead Anchor For 1/4" screws  
3/4" long, drill Size 1/2"
- ▶ **KRL-295A**  
Lead Anchor For 5/16" screws  
1" long, drill Size 5/8"
- ▶ **KRL-562**  
Lead Anchor For 3/8" bolt  
1-1/4" long, drill Size 3/4"



- ▶ **KRL-552**  
Bronze Two Screw Cable Fastener available  
With 3/8" Anchor(KRL-561)  
Cable Through AWG #2~2/0(35mm<sup>2</sup>~70mm<sup>2</sup>)



- ▶ **KRL-574**  
Bronze Point Holder, 5/8"  
With 3/8" Screw



### ▶ ANCHOR BOLTS

| Part Number | Size | Length |
|-------------|------|--------|
| KRL-B294    | 1/4" | 1-1/2" |
| KRL-B561    | 3/8" |        |

# SURGE PROTECTIVE DEVICE

E

## SURGE PROTECTIVE DEVICE

|                                                          |     |
|----------------------------------------------------------|-----|
| Class I Power System(Din-rail, Box, Counter Type) .....  | 112 |
| Class II Power System(Din-rail, Box, Counter Type) ..... | 113 |
| Class I Power System(Box, Din-rail Type) .....           | 114 |
| Class II Power System(Din-rail, Box, Counter Type) ..... | 115 |
| DC Power System(Din-rail Type) .....                     | 116 |

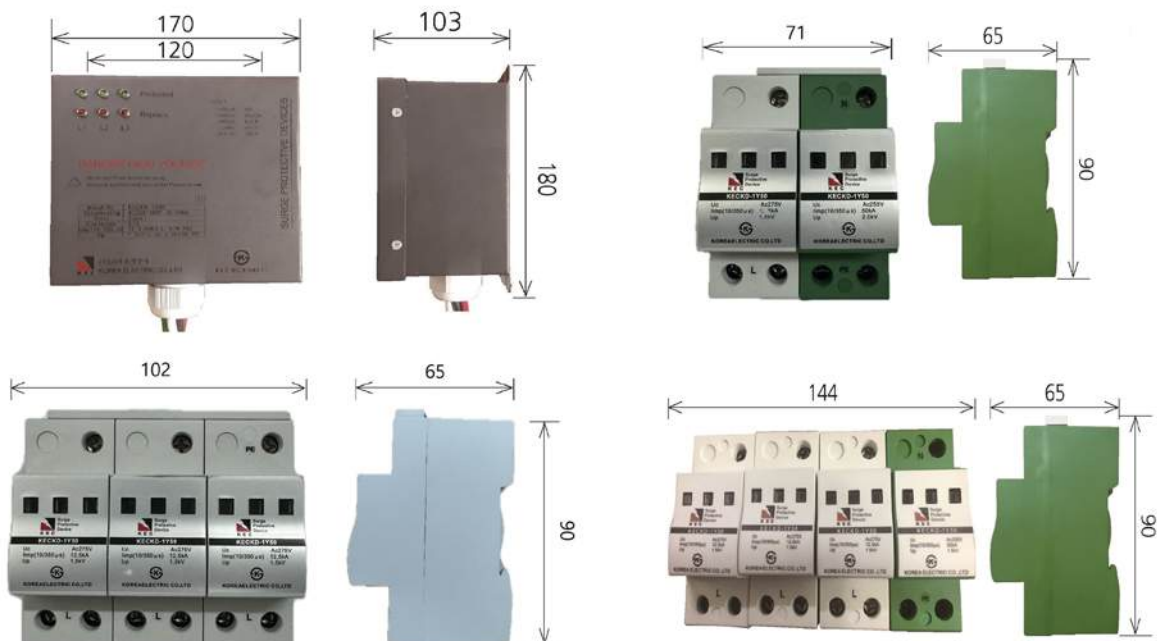
## ■ Class I Power System (Din-rail, Box , Counter Type)

KS인증



- 전압 : 220V~380V
- 등급 : Class I
- 동작 : 상대 표시 기능
- 간편 : 세련된 곡면디자인(Design)  
설치 및 교체 편리한 Size
- 적용(Application)  
수, 배전반 (ACB), 주 분전반 (LM, PM Panel), 산업용 건물, 아파트, 화학 공장, 군부대, 자동차 공장 등, 직격뢰(Direct stroke) 위험이 있는 장소
- 옵션 : RS485

| Model No.      | KECKD-1Y50(Box)                                             | KECKD-1Y50 |             |
|----------------|-------------------------------------------------------------|------------|-------------|
| 극수             | 3Φ4W                                                        | 1Φ2W, 3Φ4W | 3Φ3W        |
| 정격전압           | AC 380/220V                                                 |            |             |
| 최대연속사용전압(Uc)   | 275/255V (L-N / N-PE)                                       |            | 275V        |
| 등급(Class)      | Class I                                                     |            |             |
| limp(10/350μs) | 12.5/50kA/Mode                                              |            | 12.5kA/Mode |
| 전압보호레벨(Up)     | 1.5/2.0 kV (L-N / N-PE)                                     |            | 1.5kV       |
| 보호모드           | L-N, N-PE                                                   |            | L-PE        |
| 접속도체 단면적       | L, N : $\geq 10 \text{ mm}^2$ , PE : $\geq 16 \text{ mm}^2$ |            |             |



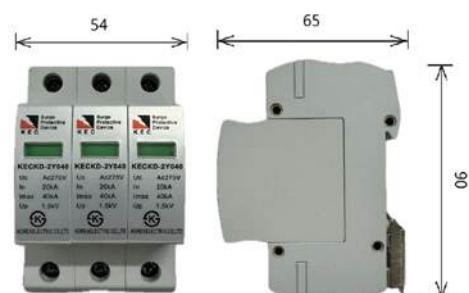
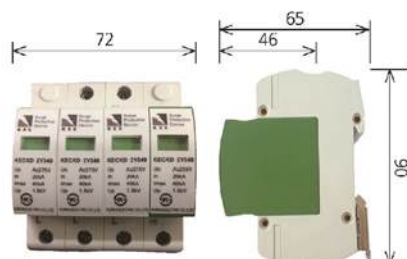
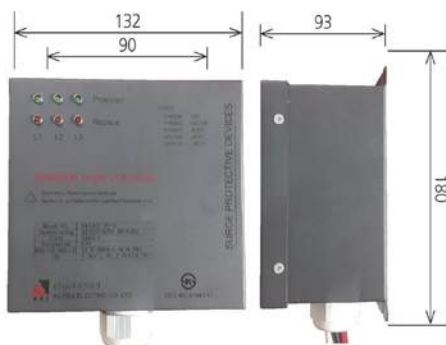
■ Class II Power System (Din-rail, Box , Direct Type)

KS인증



- 전압 : 220V~380V
- 등급 : Class II
- 동작 : 상대 표시 기능
- 간편 : 세련된 곡면디자인(Design)  
설치 및 교체 편리한 Size  
접지(Green color)
- 적용(Application)  
수, 배전반 (ACB), 주 분전반(LM, PM Panel), 산업용 건물, 아파트,  
화학 공장, 군부대, 자동차, 공장 등, 직격뢰의 위험이 있는 장소

| Model No.                 | KECKD-2Y040(Direct)                                  | KECKD-2Y040(Box) | KECKD-2Y040(Din-rail) |
|---------------------------|------------------------------------------------------|------------------|-----------------------|
| 극수                        | 3Φ4W                                                 |                  | 3Φ4W 3Φ3W             |
| 정격전압                      | AC 380/220V                                          |                  |                       |
| 최대연속사용전압(Uc)              | 275/255V (L-N / N-PE)                                |                  | 275V                  |
| 등급(Class)                 | Class II                                             |                  |                       |
| In(8/20μs)                | 20kA/Mode                                            |                  |                       |
| I <sub>max</sub> (8/20μs) | 40kA/Mode                                            |                  |                       |
| 전압보호레벨(U <sub>p</sub> )   | 1.5kV                                                |                  |                       |
| 보호모드                      | L-N, N-PE                                            |                  | L-PE                  |
| 접속도체 단면적                  | L, N : ≥6 mm <sup>2</sup> , PE : ≥10 mm <sup>2</sup> |                  |                       |



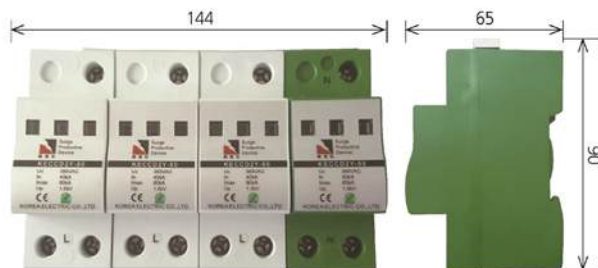
## ■ Class I, II Power System (Box, Din-rail Type)

CE인증



- 전압 : 220V~380V
- 등급 : Class I, Class II
- 동작 : 상대 표시 가능
- 간편 : 세련된 곡면디자인(Design)  
설치 및 교체 편리한 Size  
접지(Green color)
- 적용(Application)  
수, 배전반 (ACB), 주 분전반(LM, PM Panel), 산업용 건물, 아파트,  
화학 공장, 군부대, 자동차, 공장 등, 직격뢰의 위험이 있는 장소

| Model No.                 | KECCBY-1Y160(BOX)                                   | KECCBY-2Y80(BOX)                                   | KECCBY-2Y80 |
|---------------------------|-----------------------------------------------------|----------------------------------------------------|-------------|
| 극수                        | 3Φ4W                                                |                                                    |             |
| 정격전압                      | AC 380/220V                                         |                                                    |             |
| 최대연속사용전압(Uc)              | 385V                                                |                                                    |             |
| 등급(Class)                 | Class I                                             | Class II                                           |             |
| In(8/20μs)                | 80kA/Mode                                           | 40kA/Mode                                          |             |
| I <sub>max</sub> (8/20μs) | 160kA/Mode                                          | 80kA/Mode                                          |             |
| 전압보호레벨(U <sub>p</sub> )   | 1.5kV                                               |                                                    |             |
| 보호모드                      | L-N, N-PE                                           |                                                    |             |
| 접속도체 단면적                  | L, N : ≥10mm <sup>2</sup> ,PE : ≥16 mm <sup>2</sup> | L, N : ≥6mm <sup>2</sup> , PE : ≥10mm <sup>2</sup> |             |



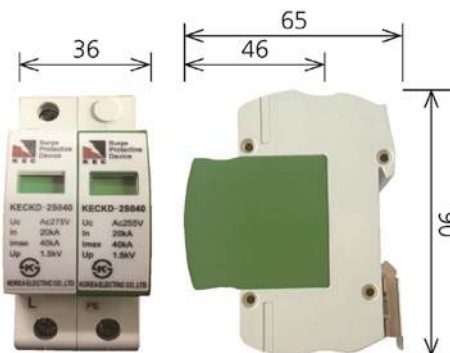
## ■ Class II Power System (Din-rail Type)

KS인증



- 전압 : 220V~380V
- 등급 : Class II
- 동작 : 상대 표시 기능
- 간편 : 세련된 곡면디자인(Design)  
설치 및 교체 편리한 Size
- 적용(Application)  
산업용 건물, 아파트, 화학 공장, 군부대, 자동차 공장등,  
유도뢰 (Induced Lightning), 간접뢰(Indirect Lightning)  
위험이 있는 장소

| Model No.    | KECKD-2S040                                          |
|--------------|------------------------------------------------------|
| 극수           | 1Φ2W                                                 |
| 정격전압         | AC 380/220V                                          |
| 최대연속사용전압(Uc) | 275/255V (L-N / N-PE)                                |
| 등급(Class)    | Class II                                             |
| In(8/20μs)   | 20kA/Mode                                            |
| Imax(8/20μs) | 40kA/Mode                                            |
| 전압보호레벨(Up)   | 1.5kV                                                |
| 보호모드         | L-N ,N-PE                                            |
| 접속도체 단면적     | L, N : ≥6 mm <sup>2</sup> , PE : ≥10 mm <sup>2</sup> |



## ■ DC Power System (Din-rail Type)

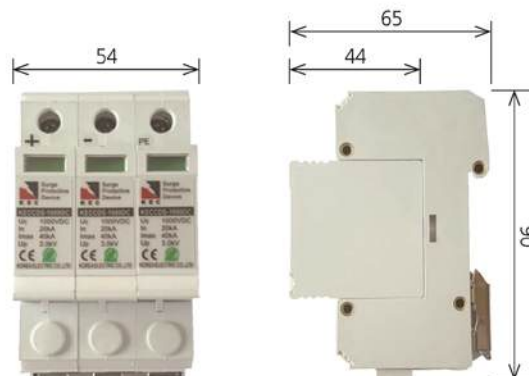
CE인증



- 전압 : 1000V
- 등급 : Class II
- 적용(Application)  
태양광 발전 설비 인버터 및 DC 전압 사용 기기

- 전압 : 220V~380V
- 등급 : Class II
- 적용(Application)  
산업용 건물, 아파트, 화학 공장, 군부대, 자동차 공장등,  
유도뢰 (Induced Lightning), 간접뢰(Indirect Lightning)  
위험이 있는 장소

| Model No.                       | KECCDS-1000DC                                              |
|---------------------------------|------------------------------------------------------------|
| 사용전압 및 특성                       | DC 1000V                                                   |
| 등급(Class)                       | Class II                                                   |
| In(8/20 $\mu$ s)                | 20kA/Mode                                                  |
| I <sub>max</sub> (8/20 $\mu$ s) | 40kA/Mode                                                  |
| 전압보호레벨(U <sub>p</sub> )         | 3.0kV                                                      |
| 응답속도                            | 25ns                                                       |
| 접속도체 단면적                        | L, N : $\geq 6 \text{ mm}^2$ , PE : $\geq 10 \text{ mm}^2$ |
| 보호모드                            | + / PE                                                     |



# CABLE ACCESSORIES

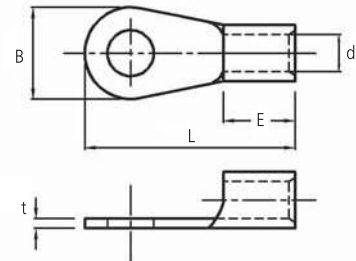
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## CABLE ACCESSORIES

|                                                                                                                               |     |
|-------------------------------------------------------------------------------------------------------------------------------|-----|
| NON-INSULATED TERMINALS TYPE-JOR(R) .....                                                                                     | 118 |
| NON-INSULATED TERMINALS TYPE-JOR(R) .....                                                                                     | 119 |
| NON-INSULATED TERMINALS TYPE-JOR(R) .....                                                                                     | 120 |
| NON-INSULATED TERMINALS TYPE-RD / NON-INSULATED TERMINALS TYPE-CB<br>(FOR LOW-VOLTAGE SWITCHING DEVICES) .....                | 121 |
| INSULATED TERMINALS TYPE-RBV(R) .....                                                                                         | 122 |
| PIN TERMINALS TYPE-BLADE / PIN TERMINALS TYPE-PIN .....                                                                       | 124 |
| NON-INSULATED TERMINALS TYPE-JOR(R) / INSULATED TERMINALS TYPE-RBV(F) /<br>INSULATED TERMINALS-FUNNEL ENTRY TYPE-RBP(F) ..... | 125 |
| TUBULAR BUTT-CONNECTOR TYPE-SP, SB, S-L / NON-INSULATED BUTT SPLICE-FUNNEL<br>ENTRY TYPE-JSFE .....                           | 127 |
| TUBULAR BUTT-CONNECTORS, SHORT BARREL TYPE-S /<br>TUBULAR BUTT-CONNECTORS, STANDARD BARREL TYPE-SS .....                      | 128 |
| TUBULAR CABLE LUGS, ONE-HOLE, ROUND COMPRESSED TYPE-CP .....                                                                  | 129 |
| TUBULAR CABLE LUGS, ONE-HOLE, ROUND COMPRESSED TYPE-CP .....                                                                  | 132 |
| TUBULAR CABLE LUGS, TWO-HOLE, ROUND COMPRESSED .....                                                                          | 134 |
| THERMO COMPRESSION TERMINAL LUG (온도변화용 동관단자) .....                                                                            | 135 |
| CABLE TIES-NYLON 6,6 TYPE-JJV .....                                                                                           | 136 |
| STAINLESS STEEL CABLE TIES-SELF-LOCKING .....                                                                                 | 137 |
| STAINLESS STEEL CABLE TIES-FULLY COATED .....                                                                                 | 138 |
| STAINLESS STEEL CABLE TIES-SEMI-COATED .....                                                                                  | 139 |
| PUSH-IN WIRE CONNECTORS FOR USE WITH SOLID CONDUCTORS .....                                                                   | 140 |
| TERMINAL CAPS / THERMO TERMINAL CAPS .....                                                                                    | 141 |
| PVC SCREW-ON WIRE CONNECTORS / WIRE JOINT-NYLON 6,6 INSULATED .....                                                           | 142 |
| CABLE TAGS / MARKER PLATES-PVC / STAINLESS STEEL MARKER PLATE /<br>COVER BUSHING .....                                        | 143 |
| ELECTRONIC TUBE NUMBERING MAVHIBE (튜브넘버링기) .....                                                                              | 144 |
| HEAT SHRINKABLE TUBING .....                                                                                                  | 145 |

## ■ NON-INSULATED TERMINALS TYPE-JOR(R)

- Material: Oxygen Free Copper
- Surface : Tin plated
- Brazed Seam

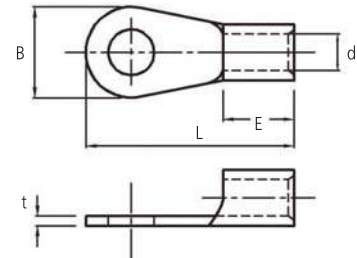


| Part Number   |  | Wire Range |               | Stud size (mm) | Dimension (mm) |      |      |     |      | Q' ty/ bag |      |     |       |
|---------------|-----------------------------------------------------------------------------------|------------|---------------|----------------|----------------|------|------|-----|------|------------|------|-----|-------|
|               |                                                                                   | AWG        | Stranded(mm²) |                | B              | L    | E    | d   | t    |            |      |     |       |
| KJOR 1.5-3    | ○                                                                                 | 22~16      | 1.5           | 3              | 5.5            | 12.5 | 5.0  | 1.7 | 0.7  | 1,000      |      |     |       |
| KJOR 1.5-S3.5 |                                                                                   |            |               | 3.5            |                | 12.5 |      |     |      |            |      |     |       |
| KJOR 1.5-3.5  | ○                                                                                 |            |               | 3.5            | 6.6            | 15.5 |      |     |      |            |      |     |       |
| KJOR 1.5-K4   | ○                                                                                 |            |               | 4              |                |      |      |     |      |            |      |     |       |
| KJOR 1.5-4    | ○                                                                                 |            |               | 4              |                |      |      |     |      |            | 8    |     |       |
| KJOR 1.5-M4   |                                                                                   |            |               | 4              |                |      |      |     |      |            | 5.8  |     |       |
| KJOR 1.5-5    | ○                                                                                 |            |               | 5              | 8              | 11.4 |      |     |      |            | 20.8 |     |       |
| KJOR 1.5-6    |                                                                                   |            |               | 6              | 21.2           |      |      |     |      |            |      |     |       |
| KJOR 1.5-8    |                                                                                   |            |               | 8              | 22.5           |      |      |     |      |            |      |     |       |
| KJOR 1.5-10   |                                                                                   |            |               | 10             | 26             |      |      |     |      |            |      |     |       |
| KJOR 1.5-12   |                                                                                   |            |               | 12             | 17             | 5.0  |      |     |      |            | 2.3  | 0.8 | 1,000 |
| KJOR 2.5-M3   |                                                                                   |            |               | 3              | 6              |      |      |     |      |            |      |     |       |
| KJOR 2.5-3.5  | ○                                                                                 | 3.5        | 6.6           | 16.5           |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-K3.5 |                                                                                   | 3.5        | 7.9           | 17.4           |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-4    | ○                                                                                 | 4          | 8.5           | 16.5           |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-M4   | ○                                                                                 | 4          | 6.6           | 17.4           |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-K4   |                                                                                   | 4          | 7.9           |                |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-S5   |                                                                                   | 5          | 7.9           | 17.2           |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-5    | ○                                                                                 | 5          | 17.3          |                |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-M6   |                                                                                   | 6          | 9.5           | 17.3           |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-6    | ○                                                                                 | 6          |               |                |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-8    | ○                                                                                 | 8          | 12            | 21.5           |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-10   |                                                                                   | 10         | 14            | 22.5           |                |      |      |     |      |            |      |     |       |
| KJOR 2.5-12   |                                                                                   | 12         | 17            | 26             |                |      |      |     |      |            |      |     |       |
| KJOR 4-M4     |                                                                                   | 14~12      | 4             | 4              | 6.7            | 17.8 | 7.0  | 3.0 | 0.9  | 1,000      |      |     |       |
| KJOR 4-4      |                                                                                   |            |               | 4              | 8.3            | 17.5 |      |     |      |            |      |     |       |
| KJOR 4-5      |                                                                                   |            |               | 5              |                |      |      |     |      |            |      |     |       |
| KJOR 4-6      |                                                                                   |            |               | 6              | 11.4           | 23   |      |     |      |            |      |     |       |
| KJOR 4-8      |                                                                                   |            |               | 8              |                |      |      |     |      |            |      |     |       |
| KJOR 4-10     |                                                                                   |            |               | 10             | 14             | 24.5 |      |     |      |            |      |     |       |
| KJOR 4-12     |                                                                                   |            |               | 13             | 16             | 25.2 |      |     |      |            |      |     |       |
| KJOR 6-S3.5   |                                                                                   | 14~12      | 4.6           | 3.5            | 7.9            | 19   | 7.0  | 3.4 | 0.9  | 1,000      |      |     |       |
| KJOR 6-3.5    |                                                                                   |            |               | 3.5            | 9.5            | 20   |      |     |      |            |      |     |       |
| KJOR 6-M4     |                                                                                   |            |               | 4              | 7.0            | 18   |      |     |      |            |      |     |       |
| KJOR 6-4      | ○                                                                                 |            |               | 4              | 9.5            | 20   |      |     |      |            |      |     |       |
| KJOR 6-5      | ○                                                                                 |            |               | 5              |                |      |      |     |      |            |      |     |       |
| KJOR 6-6      | ○                                                                                 |            |               | 6              | 12             | 25.5 |      |     |      |            |      |     |       |
| KJOR 6-K6     |                                                                                   |            |               | 6              | 13.5           | 26.2 |      |     |      |            |      |     |       |
| KJOR 6-S8     |                                                                                   |            |               | 8              |                |      |      |     |      |            |      |     |       |
| KJOR 6-8      | ○                                                                                 |            |               | 8              | 15             | 28   |      |     |      |            |      |     |       |
| KJOR 6-10     | ○                                                                                 |            |               | 10             |                |      |      |     |      |            |      |     |       |
| KJOR 6-12     |                                                                                   |            |               | 12             | 16             | 25.5 |      |     |      |            |      |     |       |
| KJOR 10-M5    |                                                                                   |            |               | 8              | 10             | 5    |      |     |      |            | 10.9 | 25  | 8.5   |
| KJOR 10-S5    |                                                                                   | 5          | 9             |                |                |      |      |     |      |            |      |     |       |
| KJOR 10-5     | ○                                                                                 | 5          | 12            |                |                | 30   |      |     |      |            |      |     |       |
| KJOR 10-6     | ○                                                                                 | 6          |               |                |                |      |      |     |      |            |      |     |       |
| KJOR 10-8     | ○                                                                                 | 8          | 15            |                |                | 35   |      |     |      |            |      |     |       |
| KJOR 10-10    | ○                                                                                 | 10         |               |                |                |      |      |     |      |            |      |     |       |
| KJOR 10-12    |                                                                                   | 12         | 20            | 35             |                |      |      |     |      |            |      |     |       |
| KJOR 16-S5    |                                                                                   | 6          | 16            | 5              | 10             | 29.5 | 10.5 | 5.8 | 1.45 | 300        |      |     |       |
| KJOR 16-5     | ○                                                                                 |            |               | 5              | 12             |      |      |     |      |            |      |     |       |
| KJOR 16-6     | ○                                                                                 |            |               | 6              | 13.5           | 29.5 |      |     |      |            |      |     |       |
| KJOR 16-S8    |                                                                                   |            |               | 8              |                |      |      |     |      |            | 32.5 |     |       |
| KJOR 16-8     | ○                                                                                 |            |               | 8              | 16             | 38   |      |     |      |            |      |     |       |
| KJOR 16-10    | ○                                                                                 |            |               | 10             |                |      |      |     |      |            |      |     |       |
| KJOR 16-12    | ○                                                                                 |            |               | 12             | 22             | 50   |      |     |      |            |      |     |       |
| KJOR 16-14    | ○                                                                                 |            |               | 14             | 30             | 50   |      |     |      |            |      |     |       |
| KJOR 16-16    |                                                                                   |            |               | 16             |                |      |      |     |      |            |      |     |       |

※ Crimping Tool : See Chart Page C2~C12

## ■ NON-INSULATED TERMINALS TYPE-JOR(R)

- Material: Oxygen Free Copper
- Surface : Tin plated
- Brazed Seam

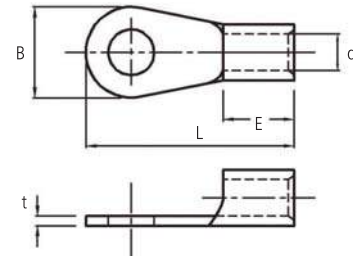


| Part Number |   | Wire Range |               | Stud size (mm) | Dimension (mm) |      |      |      |     | Q' ty/ bag |
|-------------|---|------------|---------------|----------------|----------------|------|------|------|-----|------------|
|             |   | AWG        | Stranded(mm²) |                | B              | L    | E    | d    | t   |            |
| KJOR 25-S6  | ○ | 3~4        | 25            | 6              | 12             | 33   | 11.5 | 7.7  | 1.7 | 300        |
| KJOR 25-6   | ○ |            |               | 6              | 16.5           | 34   |      |      |     |            |
| KJOR 25-S8  | ○ |            |               | 8              | 12             | 33.3 |      |      |     |            |
| KJOR 25-8   | ○ |            |               | 8              | 16.5           | 34   |      |      |     |            |
| KJOR 25-S10 | ○ |            |               | 10             | 17.5           | 39   |      |      |     |            |
| KJOR 25-10  | ○ |            |               | 10             | 22             | 43   |      |      |     |            |
| KJOR 25-12  | ○ |            |               | 12             | 22             | 43   |      |      |     |            |
| KJOR 25-14  | ○ |            |               | 14             | 30             | 52   |      |      |     |            |
| KJOR 25-16  | ○ |            |               | 16             | 30             | 52   |      |      |     |            |
| KJOR 25-20  | ○ |            |               | 20             | 30             | 52   |      |      |     |            |
| KJOR 35-S6  | ○ | 2          | 35            | 6              | 16             | 37   | 14   | 9.4  | 1.8 | 200        |
| KJOR 35-S8  | ○ |            |               | 8              | 16             | 37   |      |      |     |            |
| KJOR 35-6   | ○ |            |               | 6              | 22             | 42.5 |      |      |     |            |
| KJOR 35-8   | ○ |            |               | 8              | 22             | 42.5 |      |      |     |            |
| KJOR 35-S10 | ○ |            |               | 10             | 16             | 37   |      |      |     |            |
| KJOR 35-10  | ○ |            |               | 10             | 22             | 42.5 |      |      |     |            |
| KJOR 35-12  | ○ |            |               | 12             | 22             | 42.5 |      |      |     |            |
| KJOR 35-14  | ○ |            |               | 14             | 30             | 52.5 |      |      |     |            |
| KJOR 35-16  | ○ |            |               | 16             | 30             | 52.5 |      |      |     |            |
| KJOR 35-20  | ○ |            |               | 20             | 30             | 52.5 |      |      |     |            |
| KJOR 50-6   | ○ | 1~1/0      | 50            | 6              | 22             | 49.5 | 18   | 11.4 | 1.8 | 100        |
| KJOR 50-8   | ○ |            |               | 8              | 22             | 49.5 |      |      |     |            |
| KJOR 50-10  | ○ |            |               | 10             | 22             | 49.5 |      |      |     |            |
| KJOR 50-12  | ○ |            |               | 12             | 22             | 49.5 |      |      |     |            |
| KJOR 50-14  | ○ |            |               | 14             | 32             | 57   |      |      |     |            |
| KJOR 50-16  | ○ |            |               | 16             | 32             | 57   |      |      |     |            |
| KJOR 50-20  | ○ |            |               | 20             | 32             | 57   |      |      |     |            |
| KJOR 70-8   | ○ | 2/0        | 70            | 8.4            | 24             | 50.5 | 18.5 | 13.3 | 2.0 | 100        |
| KJOR 70-10  | ○ |            |               | 10.5           | 24             | 50.5 |      |      |     |            |
| KJOR 70-12  | ○ |            |               | 12             | 24             | 50.5 |      |      |     |            |
| KJOR 70-14  | ○ |            |               | 14             | 32             | 60.5 |      |      |     |            |
| KJOR 70-16  | ○ |            |               | 16             | 32             | 60.5 |      |      |     |            |
| KJOR 70-20  | ○ |            |               | 20             | 32             | 60.5 |      |      |     |            |
| KJOR 95-8   | ○ | 3/0        | 95            | 8.4            | 27             | 54   | 19   | 14.5 | 2.3 | 100        |
| KJOR 95-10  | ○ |            |               | 10.5           | 27             | 54   |      |      |     |            |
| KJOR 95-12  | ○ |            |               | 13             | 27             | 54   |      |      |     |            |
| KJOR 95-14  | ○ |            |               | 15             | 32             | 68   |      |      |     | 50         |
| KJOR 95-16  | ○ |            |               | 17             | 32             | 68   |      |      |     |            |
| KJOR 95-20  | ○ |            |               | 20             | 32             | 68   |      |      |     |            |
| KJOR 100-8  | ○ | 4/0        | 100           | 8.4            | 28.5           | 54.5 | 19   | 16.4 | 2.6 | 50         |
| KJOR 100-10 | ○ |            |               | 10.5           | 28.5           | 54.5 |      |      |     |            |
| KJOR 100-12 | ○ |            |               | 13             | 28.5           | 54.5 |      |      |     |            |
| KJOR 100-14 | ○ |            |               | 15             | 32             | 69   |      |      |     |            |
| KJOR 100-16 | ○ |            |               | 17             | 32             | 69   |      |      |     |            |
| KJOR 100-18 | ○ |            |               | 19             | 32             | 69   |      |      |     |            |
| KJOR 100-20 | ○ |            |               | 21             | 32             | 69   |      |      |     |            |
| KJOR 120-8  | ○ | 250 Kcmil  | 120           | 8.4            | 32.5           | 61.5 | 22   | 18   | 3.2 | 50         |
| KJOR 120-10 | ○ |            |               | 10.5           | 32.5           | 61.5 |      |      |     |            |
| KJOR 120-12 | ○ |            |               | 13             | 32.5           | 61.5 |      |      |     |            |
| KJOR 120-14 | ○ |            |               | 15             | 32.5           | 61.5 |      |      |     |            |
| KJOR 120-16 | ○ |            |               | 17             | 32.5           | 61.5 |      |      |     |            |
| KJOR 120-20 | ○ |            |               | 21             | 32.5           | 61.5 |      |      |     |            |

※ Crimping Tool : See Chart Page C2~C12

## ■ NON-INSULATED TERMINALS TYPE-JOR(R)

- Material: Oxygen Free Copper
- Surface : Tin plated
- Brazed Seam

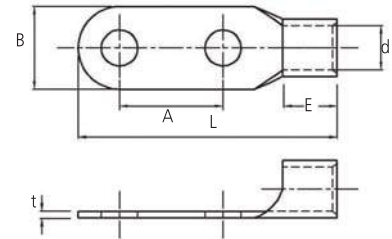


| Part Number  |   | Wire Range |                            | Stud size (mm) | Dimension (mm) |      |   |   |   | Q' ty/ bag |
|--------------|---|------------|----------------------------|----------------|----------------|------|---|---|---|------------|
|              |   | AWG        | Stranded(mm <sup>2</sup> ) |                | B              | L    | E | d | t |            |
| KJOR 150-8   |   |            |                            | 8              |                |      |   |   |   |            |
| KJOR 150-10  | ○ |            |                            | 10             |                | 67   |   |   |   |            |
| KJOR 150-12  | ○ |            |                            | 12             |                |      |   |   |   |            |
| KJOR 150-14  | ○ |            |                            | 14             |                |      |   |   |   |            |
| KJOR 150-16  | ○ |            |                            | 16             |                |      |   |   |   |            |
| KJOR 150-18  | ○ |            |                            | 18             |                |      |   |   |   |            |
| KJOR 150-20  | ○ |            |                            | 20             |                |      |   |   |   |            |
| KJOR 150-24  | ○ |            |                            | 24             |                |      |   |   |   |            |
| KJOR 185-10  | ○ |            |                            | 10.5           |                |      |   |   |   |            |
| KJOR 185-12  | ○ |            |                            | 12             |                | 68.5 |   |   |   |            |
| KJOR 185-14  | ○ |            |                            | 14             |                |      |   |   |   |            |
| KJOR 185-16  | ○ |            |                            | 16             |                |      |   |   |   |            |
| KJOR 185-18  | ○ |            |                            | 18             |                |      |   |   |   |            |
| KJOR 185-20  | ○ |            |                            | 20             |                |      |   |   |   |            |
| KJOR 185-22  | ○ |            |                            | 22             |                |      |   |   |   |            |
| KJOR 185-24  | ○ |            |                            | 24             |                |      |   |   |   |            |
| KJOR 240-S10 |   |            |                            | 10             |                | 77.5 |   |   |   |            |
| KJOR 240-S12 |   |            |                            | 12             |                |      |   |   |   |            |
| KJOR 240-10  | ○ |            |                            | 10             |                |      |   |   |   |            |
| KJOR 240-12  | ○ |            |                            | 12             |                |      |   |   |   |            |
| KJOR 240-14  | ○ |            |                            | 14             |                |      |   |   |   |            |
| KJOR 240-16  | ○ |            |                            | 16             |                |      |   |   |   |            |
| KJOR 240-18  | ○ |            |                            | 18             |                |      |   |   |   |            |
| KJOR 240-20  | ○ |            |                            | 20             |                |      |   |   |   |            |
| KJOR 240-22  | ○ |            |                            | 22             |                |      |   |   |   |            |
| KJOR 240-24  | ○ |            |                            | 24             |                |      |   |   |   |            |
| KJOR 240-27  | ○ |            |                            | 27             |                |      |   |   |   |            |
| KJOR 250-S10 |   |            |                            | 10             |                | 77.5 |   |   |   |            |
| KJOR 250-S12 |   |            |                            | 12             |                |      |   |   |   |            |
| KJOR 250-10  |   |            |                            | 10             |                |      |   |   |   |            |
| KJOR 250-12  |   |            |                            | 12             |                |      |   |   |   |            |
| KJOR 250-14  |   |            |                            | 14             |                |      |   |   |   |            |
| KJOR 250-16  |   |            |                            | 16             |                |      |   |   |   |            |
| KJOR 250-18  |   |            |                            | 18             |                |      |   |   |   |            |
| KJOR 250-20  |   |            |                            | 20             |                |      |   |   |   |            |
| KJOR 250-22  |   |            |                            | 22             |                |      |   |   |   |            |
| KJOR 250-24  |   |            |                            | 24             |                |      |   |   |   |            |
| KJOR 250-27  |   |            |                            | 27             |                |      |   |   |   |            |
| KJOR 300-10  | ○ |            |                            | 10             |                | 88   |   |   |   |            |
| KJOR 300-12  | ○ |            |                            | 12             |                |      |   |   |   |            |
| KJOR 300-14  | ○ |            |                            | 14             |                |      |   |   |   |            |
| KJOR 300-16  | ○ |            |                            | 16             |                |      |   |   |   |            |
| KJOR 300-18  | ○ |            |                            | 18             |                |      |   |   |   |            |
| KJOR 300-20  | ○ |            |                            | 20             |                |      |   |   |   |            |
| KJOR 300-22  | ○ |            |                            | 22             |                |      |   |   |   |            |
| KJOR 300-24  | ○ |            |                            | 24             |                |      |   |   |   |            |
| KJOR 300-27  | ○ |            |                            | 27             |                |      |   |   |   |            |

※ Crimping Tool : See Chart Page C2~C12

## ■ NON-INSULATED TERMINALS TYPE-RD

- Material: Oxygen Free Copper
- Surface : Tin plated
- Brazed Seam

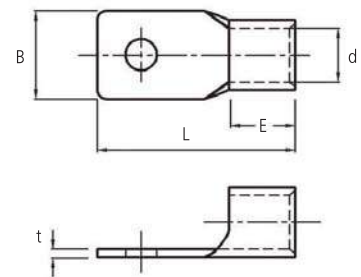


| Part Number  | Wire Range (mm <sup>2</sup> ) | Stud size (mm) | Dimension (mm) |      |      |      |     |    | Q' ty/ bag |
|--------------|-------------------------------|----------------|----------------|------|------|------|-----|----|------------|
|              |                               |                | B              | L    | E    | d    | t   | A  |            |
| KJORD 50-10  | 50                            | 10             | 22             | 82   | 17.5 | 11.4 | 1.8 | 32 | 50         |
| KJORD 50-12  |                               | 12             |                | 90   |      |      |     | 40 |            |
| KJORD 50-14  |                               | 14             | 32             | 98   |      |      |     | 40 |            |
| KJORD 95-10  | 95                            | 10             | 27             | 86   | 18.5 | 14.5 | 2.3 | 32 | 40         |
| KJORD 95-12  |                               | 12             |                | 95.5 |      |      |     | 40 |            |
| KJORD 95-14  |                               | 14             | 32             | 100  |      |      |     | 40 |            |
| KJORD 100-10 | 100                           | 10             | 28.5           | 88   | 18.5 | 16.4 | 2.6 | 32 | 30         |
| KJORD 100-12 |                               | 12             |                | 96   |      |      |     | 40 |            |
| KJORD 100-14 |                               | 14             | 32             | 100  |      |      |     | 40 |            |
| KJORD 120-10 | 120                           | 10             | 32.5           | 88   | 18.5 | 18.0 | 3.2 | 32 | 30         |
| KJORD 120-12 |                               | 12             |                | 96   |      |      |     | 40 |            |
| KJORD 120-14 |                               | 14             | 36             | 100  |      |      |     | 40 |            |
| KJORD 150-12 | 150                           | 12             | 36             | 106  | 26   | 19.5 | 3.2 | 40 | 25         |
| KJORD 150-14 |                               | 14             |                | 117  |      |      |     | 40 |            |
| KJORD 240-12 | 240                           | 12             | 44             | 117  | 30.5 | 24.0 | 3.9 | 40 | 20         |
| KJORD 240-14 |                               | 14             |                | 124  |      |      |     | 40 |            |
| KJORD 300-12 | 300                           | 12             | 50.5           | 124  | 34.5 | 28.0 | 4.2 | 40 | 10         |
| KJORD 300-14 |                               | 14             |                | 124  |      |      |     | 40 |            |

※ Crimping Tool : See Chart Page C2~C12

## ■ NON-INSULATED TERMINALS TYPE-CB (FOR LOW-VOLTAGE SWITCHING DEVICES)

- Material: Oxygen Free Copper
- Surface : Tin plated
- Brazed Seam

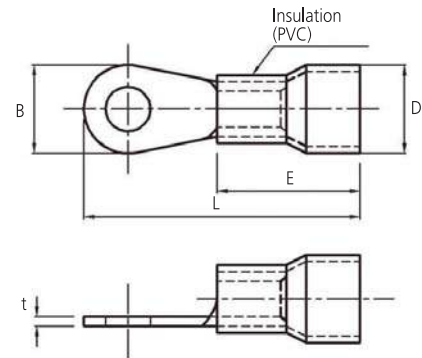


| Part Number  | Wire Range (mm <sup>2</sup> ) | Stud size (mm) | Dimension (mm) |      |      |      |     | Q' ty/ bag |
|--------------|-------------------------------|----------------|----------------|------|------|------|-----|------------|
|              |                               |                | B              | L    | E    | d    | t   |            |
| KJOCB 50-8   | 50                            | 8              | 16             | 48.5 | 18.5 | 11.4 | 1.8 | 100        |
| KJOCB 95-8   | 95                            | 8              | 22             | 54.5 | 19.0 | 16.4 | 2.6 | 50         |
| KJOCB 95-10  |                               | 10             | 22             | 54.5 | 19.0 | 16.4 | 2.6 | 50         |
| KJOCB 150-8  | 150                           | 8              | 22             | 63.5 | 26.5 | 19.5 | 3.2 | 30         |
| KJOCB 150-10 |                               | 10             | 25             | 64.5 | 27.0 | 19.5 | 3.2 | 30         |

※ Crimping Tool : See Chart Page C2~C12

## ■ INSULATED TERMINALS TYPE-RBV(R)

- Material: Oxygen Free Copper
- Surface : Tin plated
- Insulation : PVC
- Insulation Temperature Rated 105°C



| Part Number         |                 | Wire Range |                | Stud size (mm) | Dimension (mm) |      |     |      |     | Color                                            | Q' ty/ bag |
|---------------------|-----------------|------------|----------------|----------------|----------------|------|-----|------|-----|--------------------------------------------------|------------|
| Without Brazed Seam | Brazed Seam     | AWG        | Stranded (mm²) |                | B              | L    | E   | d    | t   |                                                  |            |
| KJOPR 1.5-3         | KJOPR 1.5-3W    | 22~16      | 1.25<br>1.5    | 3              | 5.5            | 17.5 | 10  | 6.1  | 0.7 | RED<br>BLUE<br>YELLOW<br>WHITE<br>BLACK          | 1,000      |
| KJOPR 1.5-S3.5      | KJOPR 1.5-S3.5W |            |                | 3.5            | 5.5            |      |     |      |     |                                                  |            |
| KJOPR 1.5-3.5       | KJOPR 1.5-3.5W  |            |                | 3.5            | 6.6            |      |     |      |     |                                                  |            |
| KJOPR 1.5-K4        | KJOPR 1.5-K4W   |            |                | 4              | 21             | 8.0  |     |      |     |                                                  |            |
| KJOPR 1.5-M4        | KJOPR 1.5-M4W   |            |                | 4              |                |      |     |      |     |                                                  |            |
| KJOPR 1.5-4         | KJOPR 1.5-4W    |            |                | 5              |                |      |     |      |     |                                                  |            |
| KJOPR 1.5-5         | KJOPR 1.5-5W    |            |                | 6              | 11.4           | 25.8 |     |      |     |                                                  |            |
| KJOPR 1.5-6         | KJOPR 1.5-6W    |            |                | 8              |                | 26.2 |     |      |     |                                                  |            |
| KJOPR 1.5-8         | KJOPR 1.5-8W    |            |                | 10             |                | 27.5 |     |      |     |                                                  |            |
| KJOPR 1.5-10        | KJOPR 1.5-10W   |            |                | 12             | 17             | 31   |     |      |     |                                                  |            |
| KJOPR 1.5-12        | KJOPR 1.5-12W   |            |                |                |                |      |     |      |     |                                                  |            |
| KJOPR 2.5-M3        | KJOPR 2.5-M3W   |            |                | 16~14          | 2.0<br>2.5     | 3    |     |      |     |                                                  |            |
| KJOPR 2.5-3.5       | KJOPR 2.5-3.5W  | 3.5        | 6.6            |                |                | 22   |     |      |     |                                                  |            |
| KJOPR 2.5-K3.5      | KJOPR 2.5-K3.5W | 3.5        | 7.9            |                |                | 22.7 |     |      |     |                                                  |            |
| KJOPR 2.5-M4        | KJOPR 2.5-M4W   | 4          | 6.6            |                |                | 22   |     |      |     |                                                  |            |
| KJOPR 2.5-4         | KJOPR 2.5-4W    | 4          | 8.5            |                |                | 22   |     |      |     |                                                  |            |
| KJOPR 2.5-K4        | KJOPR 2.5-K4W   | 4          | 7.9            |                |                | 23.9 |     |      |     |                                                  |            |
| KJOPR 2.5-S5        | KJOPR 2.5-S5W   | 5          |                |                |                |      |     |      |     |                                                  |            |
| KJOPR 2.5-5         | KJOPR 2.5-5W    | 5          |                |                |                |      | 9.5 | 23.5 |     |                                                  |            |
| KJOPR 2.5-M6        | KJOPR 2.5-M6W   | 6          |                |                |                |      |     |      |     |                                                  |            |
| KJOPR 2.5-6         | KJOPR 2.5-6W    | 6          | 12             |                |                | 26.5 |     |      |     |                                                  |            |
| KJOPR 2.5-8         | KJOPR 2.5-8W    | 8          |                |                |                |      |     |      |     |                                                  |            |
| KJOPR 2.5-10        | KJOPR 2.5-10W   | 10         |                |                |                |      | 14  | 29.5 |     |                                                  |            |
| KJOPR 2.5-12        | KJOPR 2.5-12W   |            |                | 12             | 17             | 30.8 |     |      |     |                                                  |            |
| KJOPR 4-M4          | KJOPR 4-4W      | 14~12      | 3.5<br>4       | 4              | 6.7            | 25   | 14  | 8.1  | 0.9 | YELLOW<br>RED<br>BLUE<br>WHITE<br>BLACK          | 1,000      |
| KJOPR 4-4           | KJOPR 4-4W      |            |                | 4              | 8.3            |      |     |      |     |                                                  |            |
| KJOPR 4-5           | KJOPR 4-5W      |            |                | 5              | 8.3            |      |     |      |     |                                                  |            |
| KJOPR 4-6           | KJOPR 4-6W      |            |                | 6              | 11.4           | 30   |     |      |     |                                                  |            |
| KJOPR 4-8           | KJOPR 4-8W      |            |                | 8              |                |      |     |      |     |                                                  |            |
| KJOPR 4-10          | KJOPR 4-10W     |            |                | 10             |                |      |     |      |     |                                                  |            |
| KJOPR 4-12          | KJOPR 4-12W     |            |                | 12             | 16             | 32.5 |     |      |     |                                                  |            |
| KJOPR 6-S3.5        | KJOPR 6-S3.5W   | 12~10      | 5.5<br>6       | 3.5            | 7.9            | 26   | 14  | 8.1  | 0.9 | YELLOW<br>RED<br>BLUE<br>WHITE<br>BLACK<br>GREEN | 1,000      |
| KJOPR 6-3.5         | KJOPR 6-3.5W    |            |                | 3.5            | 9.5            | 26.5 |     |      |     |                                                  |            |
| KJOPR 6-M4          | KJOPR 6-M4W     |            |                | 4              | 7              | 25   |     |      |     |                                                  |            |
| KJOPR 6-4           | KJOPR 6-4W      |            |                | 4              | 9.5            | 26.5 |     |      |     |                                                  |            |
| KJOPR 6-5           | KJOPR 6-5W      |            |                | 5              | 9.5            | 34.7 |     |      |     |                                                  |            |
| KJOPR 6-6           | KJOPR 6-6W      |            |                | 6              | 12             | 34.7 |     |      |     |                                                  |            |
| KJOPR 6-K6          | KJOPR 6-K6W     |            |                | 6              | 13.5           | 26.5 |     |      |     |                                                  |            |
| KJOPR 6-S8          | KJOPR 6-S8W     |            |                | 8              | 13.5           | 34   |     |      |     |                                                  |            |
| KJOPR 6-8           | KJOPR 6-8W      |            |                | 8              | 15             | 37   |     |      |     |                                                  |            |
| KJOPR 6-10          | KJOPR 6-10W     |            |                | 10             |                |      |     |      |     |                                                  |            |
| KJOPR 6-12          | KJOPR 6-12W     |            |                | 12             |                |      |     |      |     |                                                  |            |

※when ordering products and postfix "collor & Insulation type" to the partnumber (ex JOPR 1.5-3 Black Straight)



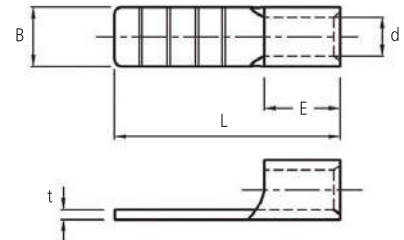
## ■ INSULATED TERMINALS TYPE-RBV(R) (Continued)

| Part Number<br>(Brazed Seam) | Wire Range |                   | 1Stud size<br>(mm) | Dimension (mm) |      |      |      |    | Color  | Q' ty/ bag |
|------------------------------|------------|-------------------|--------------------|----------------|------|------|------|----|--------|------------|
|                              | AWG        | Stranded<br>(mm²) |                    | B              | L    | E    | d    | t  |        |            |
| KJOPR 10-M5W                 | 8          | 10                | 5                  | 10.9           | 32.5 | 11.0 | 1.15 | 16 | RED    | 500        |
| KJOPR 10-S5W                 |            |                   | 5                  | 9.0            |      |      |      |    |        |            |
| KJOPR 10-5W                  |            |                   | 5                  | 12             | 32   |      |      |    |        |            |
| KJOPR 10-6W                  |            |                   | 6                  |                |      |      |      |    |        |            |
| KJOPR 10-8W                  |            |                   | 8                  | 15             | 38.5 |      |      |    |        |            |
| KJOPR 10-10W                 |            |                   | 10                 |                |      |      |      |    |        |            |
| KJOPR 10-12W                 |            |                   | 12                 | 20             | 44   |      |      |    |        |            |
| KJOPR 16-S5W                 | 6          | 16                | 5                  | 9.0            | 41   | 12.9 | 1.45 | 21 | BLUE   | 300        |
| KJOPR 16-5W                  |            |                   | 5                  | 12             |      |      |      |    |        |            |
| KJOPR 16-6W                  |            |                   | 6                  |                | 13.5 |      |      |    |        |            |
| KJOPR 16-S8W                 |            |                   | 8                  | 16             |      |      |      |    |        |            |
| KJOPR 16-8W                  |            |                   | 8                  |                |      |      |      |    |        |            |
| KJOPR 16-10W                 |            |                   | 10                 |                |      |      |      |    |        |            |
| KJOPR 16-12W                 |            |                   | 12                 | 22             | 50.5 |      |      |    |        |            |
| KJOPR 25-S6W                 | 4          | 25                | 6                  | 12             | 46   | 16.2 | 1.7  | 25 | YELLOW | 300        |
| KJOPR 25-6W                  |            |                   | 6                  | 16.5           | 46.2 |      |      |    |        |            |
| KJOPR 25-S8W                 |            |                   | 8                  | 12             | 46   |      |      |    |        |            |
| KJOPR 25-8W                  |            |                   | 8                  | 16.5           | 46.2 |      |      |    |        |            |
| KJOPR 25-S10W                |            |                   | 10                 |                |      |      |      |    |        |            |
| KJOPR 25-10W                 |            |                   | 10                 | 17.5           | 51.5 |      |      |    |        |            |
| KJOPR 25-12W                 |            |                   | 12                 | 22             | 55.5 |      |      |    |        |            |
| KJOPR 35-S6W                 | 2          | 35                | 6                  | 16             | 48   | 18.1 | 1.8  | 28 | RED    | 200        |
| KJOPR 35-6W                  |            |                   | 6                  | 22             | 54.3 |      |      |    |        |            |
| KJOPR 35-S8W                 |            |                   | 8                  | 16             | 48   |      |      |    |        |            |
| KJOPR 35-8W                  |            |                   | 8                  | 22             | 54.3 |      |      |    |        |            |
| KJOPR 35-S10W                |            |                   | 10                 | 16             | 48   |      |      |    |        |            |
| KJOPR 35-10W                 |            |                   | 10                 | 22             | 54.3 |      |      |    |        |            |
| KJOPR 35-12W                 |            |                   | 12                 |                |      |      |      |    |        |            |

※when ordering products and postfx "collor & Insulation type" to the partnumber (ex JOPR 1.5-3 Black Straight)

## ■ NON-INSULATED TYPE-BLADE TERMINALS

- Material: Electrolytic Copper
- Surface : Tin plated
- With or Without Brazed Seam

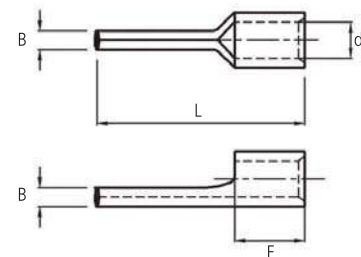


| Part Number | Wire Range |                 | Dimension (mm) |      |      |      |      |
|-------------|------------|-----------------|----------------|------|------|------|------|
|             | AWG        | mm <sup>2</sup> | B              | L    | E    | d    | t    |
| KJOBN 152   | 20~16      | 1.5             | 1.8            | 22.0 | 5.0  | 2.0  | 0.65 |
| KJOBN 153   |            |                 | 2.3            | 15.0 | 5.0  | 2.0  |      |
| KJOBN 154   |            |                 | 2.3            | 23.5 | 5.0  | 2.0  |      |
| KJOBN 252   | 16~14      | 2.5             | 1.8            | 22.0 | 5.0  | 2.4  | 0.65 |
| KJOBN 253   |            |                 | 3.2            | 17.0 | 5.0  | 2.4  |      |
| KJOBN 254   |            |                 | 2.3            | 23.5 | 5.0  | 2.4  |      |
| KJOBN 4     | 14~12      | 4               | 4.0            | 20.0 | 6.0  | 3.0  | 0.75 |
| KJOBN 4-2   |            |                 | 2.8            | 16.5 | 6.0  | 3.0  |      |
| KJOBN 4-3   |            |                 | 3.0            | 20.5 | 6.0  | 3.0  |      |
| KJOBN 6     | 12~10      | 6               | 5.0            | 21.4 | 7.0  | 3.6  | 0.8  |
| KJOBN 10    | 8          | 10              | 5.8            | 26.5 | 8.5  | 5.2  | 0.9  |
| KJOBN 16    | 6          | 16              | 7.3            | 32.5 | 12.5 | 6.0  | 1.1  |
| KJOBN 25    | 4          | 25              | 8.0            | 32.5 | 12.5 | 9.0  | 1.2  |
| KJOBN 35    | 2          | 35              | 8.0            | 34.5 | 14.5 | 10.0 | 1.4  |

※When ordering products with a brazed seam 1.5mm<sup>2</sup>~6mm<sup>2</sup>, add the postfix "B" to the part Number (ex JOBN152 → JOBN152B)

## ■ NON-INSULATED PIN TERMINALS

- Material: Electrolytic Copper
- Surface : Tin plated
- With or Without Brazed Seam

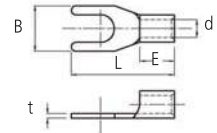


| Part Number | Wire Range |                 | Dimension (mm) |      |     |     |
|-------------|------------|-----------------|----------------|------|-----|-----|
|             | AMG        | mm <sup>2</sup> | B              | L    | E   | d   |
| KJOPN 15    | 20~16      | 1.5             | 2.0            | 19.0 | 5.0 | 2.0 |
| KJOPN 252   | 16~14      | 2.5             | 2.0            | 19.0 | 5.0 | 2.4 |
| KJOPN 253   |            |                 | 2.0            | 22.0 | 5.0 |     |
| KJOPN 6     | 12~10      | 6               | 2.5            | 20.0 | 6.0 | 3.6 |

※When ordering products with a brazed seam 1.5mm<sup>2</sup>~6mm<sup>2</sup>, add the postfix "B" to the part Number (JOPN15 → JOPN15B)

## ■ NON-INSULATED TERMINALS TYPE-JOF(F)

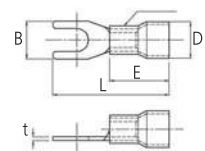
- Material: Electrolytic Copper
- Surface : Tin plated
- Brazed Seam



| Catalog Number | Wire Range |                 | Stud size (mm) | Dimension (mm) |      |     |     |      | Q' ty/ bag |
|----------------|------------|-----------------|----------------|----------------|------|-----|-----|------|------------|
|                | AWG        | mm <sup>2</sup> |                | B              | L    | E   | d   | t    |            |
| JOF 0513       | 22~16      | 1.5             | 3.2            | 6.0            | 14.5 | 5.0 | 1.7 | 0.65 | 1,000      |
| JOF 0514       |            |                 | 4.3            | 6.8            | 16   |     |     |      |            |
| JOF 0515       |            |                 | 5.3            | 10             | 17.5 |     |     |      |            |
| JOF 15253      | 16~14      | 2.5             | 3.2            | 6.0            | 15   | 5.0 | 2.3 | 0.8  | 1,000      |
| JOF 15254      |            |                 | 4.3            | 6.8            | 15.5 |     |     |      |            |
| JOF 15255      |            |                 | 5.3            | 10             | 18.5 |     |     |      |            |
| JOF 464        | 14~10      | 4               | 4.3            | 8.0            | 18.5 | 6.0 | 3.6 | 0.9  | 1,000      |
| JOF 465        |            | 6               | 5.3            | 10             | 19.5 |     |     |      |            |
| JOF 105        | 8          | 10              | 5.3            | 10             | 23   | 8.0 | 4.5 | 1.0  | 500        |
| JOF 106        |            |                 | 6.5            | 11             | 24   |     |     |      |            |

## ■ INSULATED TERMINALS TYPE-RBV(F)

- Material: Electrolytic Copper
- Surface : Tin plated
- Insulation : PVC



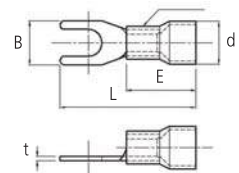
| Part Number         |             | Wire Range |                 | Stud size (mm) | Dimension (mm) |      |      |      |      | Color  | Q' ty/ bag |
|---------------------|-------------|------------|-----------------|----------------|----------------|------|------|------|------|--------|------------|
| Without Brazed Seam | Brazed Seam | AWG        | mm <sup>2</sup> |                | B              | L    | E    | d    | t    |        |            |
| JOPF 0513           | JOPF 0513W  | 22~16      | 1.5             | 3.2            | 6.0            | 20.5 | 10   | 5.4  | 0.65 | RED    | 1,000      |
| JOPF 0514           | JOPF 0514W  |            |                 | 4.3            | 6.8            | 22   |      |      |      |        |            |
| JOPF 0515           | JOPF 0515W  |            |                 | 5.3            | 10             | 23.5 |      |      |      |        |            |
| JOPF 15253          | JOPF 15253W | 16~14      | 2.5             | 3.2            | 6.0            | 21   | 10   | 6.3  | 0.8  | BLUE   | 1,000      |
| JOPF 15254          | JOPF 15254W |            |                 | 4.3            | 6.8            | 21.5 |      |      |      |        |            |
| JOPF 15255          | JOPF 15255W |            |                 | 5.3            | 10             | 24.5 |      |      |      |        |            |
| JOPF 464            | JOPF 464W   | 14~10      | 4               | 4.3            | 8.0            | 25.5 | 14   | 8.3  | 0.9  | YELLOW | 1,000      |
| JOPF 465            | JOPF 465W   |            | 6               | 5.3            | 10             | 26.5 |      |      |      |        |            |
| JOPF 105            | JOPF 105W   | 8          | 10              | 5.3            | 10             | 32   | 15.6 | 11.0 | 1.0  | RED    | 500        |
| JOPF 106            | JOPF 106W   |            |                 | 6.5            | 11             | 33   |      |      |      |        |            |

※when ordering products and postfix "collor & Insulation type" to the partnumber (ex JOPR 1.5-3 Black Straight)



## ■ INSULATED TERMINALS-FUNNEL ENTRY TYPE-RBP(F)

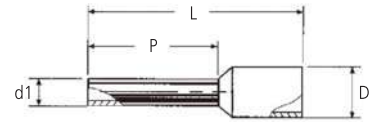
- Material: Electrolytic Copper
- Surface : Tin plated
- Insulation : Nylon
- High Temperature (to 125°C) Applications



| Part Number         |             | Wire Range |                 | Stud size (mm) | Dimension (mm) |      |      |      |      | Color  | Q' ty/ bag |
|---------------------|-------------|------------|-----------------|----------------|----------------|------|------|------|------|--------|------------|
| Without Brazed Seam | Brazed Seam | AWG        | mm <sup>2</sup> |                | B              | L    | E    | d    | t    |        |            |
| JONF 0513           | JONF 0513W  | 22~16      | 1.5             | 3.2            | 6.0            | 20.5 | 11   | 6.1  | 0.65 | RED    | 1,000      |
| JONF 0514           | JONF 0514W  |            |                 | 4.3            | 6.8            | 22   |      |      |      |        |            |
| JONF 0515           | JONF 0515W  |            |                 | 5.3            | 10             | 23.5 |      |      |      |        |            |
| JONF 15253          | JONF 15253W | 16~14      | 2.5             | 3.2            | 6.0            | 21   | 11   | 6.3  | 0.8  | BLUE   | 1,000      |
| JONF 15254          | JONF 15254W |            |                 | 4.3            | 6.8            | 21.5 |      |      |      |        |            |
| JONF 15255          | JONF 15255W |            |                 | 5.3            | 10             | 24.5 |      |      |      |        |            |
| JONF 464            | JONF 464W   | 14~10      | 4               | 4.3            | 8.0            | 25.5 | 14.5 | 6.3  | 0.9  | YELLOW | 1,000      |
| JONF 465            | JONF 465W   |            | 6               | 5.3            | 10             | 26.5 |      |      |      |        |            |
| JONF 105            | JONF 105W   | 8          | 10              | 5.3            | 10             | 32   | 17   | 10.8 | 1.0  | RED    | 500        |
| JONF 106            | JONF 106W   |            |                 | 6.5            | 11             | 33   |      |      |      |        |            |

## ■ INSULATED FERRULES TYPE-SINGLE

- Material: Electrolytic Copper
- Surface : Tin plated
- Insulation : Nylon
- Temperature : -55°C up to +105°C
- Insulation housing conforms to German color code requirements
- DIN or FRENCH color requirements can be ordered.

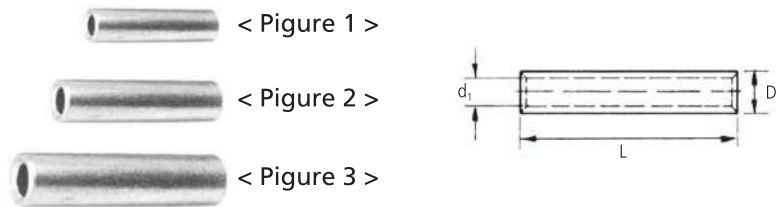


| Part Number                                  | Wire Range |                 | Dimension (mm)               |                             |      |      | Color                                                                                 |            | Q' ty/<br>bag |
|----------------------------------------------|------------|-----------------|------------------------------|-----------------------------|------|------|---------------------------------------------------------------------------------------|------------|---------------|
|                                              | AWG        | mm <sup>2</sup> | L                            | P                           | d1   | D    |                                                                                       |            |               |
| CE002506<br>CE002508                         | #26        | 0.25            | 10.4<br>12.4                 | 6.0<br>8.0                  | 1.1  | 2.5  |    | LIGHT BLUE | 1,000         |
| CE005006<br>CE005008<br>CE005010             | #22        | 0.50            | 12.0<br>14.0<br>16.0         | 6.0<br>8.0<br>10.0          | 1.3  | 3.2  |    | ORANGE     | 1,000         |
| CE007506<br>CE007508<br>CE007510<br>CE007512 | #20        | 0.75            | 12.0<br>14.0<br>16.0<br>18.0 | 6.0<br>8.0<br>10.0<br>12.0  | 1.5  | 3.4  |    | WHITE      | 1,000         |
| CE010006<br>CE010008<br>CE010010<br>CE010012 | #18        | 1.0             | 12.0<br>14.0<br>16.0<br>18.0 | 6.0<br>8.0<br>10.0<br>12.0  | 1.7  | 3.6  |   | YELLOW     | 1,000         |
| CE015008<br>CE015010<br>CE015012<br>CE015018 | #16        | 1.5             | 14.0<br>16.0<br>18.0<br>24.0 | 8.0<br>10.0<br>12.0<br>18.0 | 2.0  | 4.1  |  | RED        | 1,000         |
| CE025008<br>CE025010<br>CE025012<br>CE025018 | #14        | 2.5             | 14.0<br>16.0<br>18.0<br>24.0 | 8.0<br>10.0<br>12.0<br>18.0 | 2.5  | 4.8  |  | BLUE       | 1,000         |
| CE040010<br>CE040012<br>CE040018             | #12        | 4.0             | 17.0<br>20.0<br>26.0         | 10.0<br>12.0<br>18.0        | 3.2  | 5.4  |  | GRAY       | 1,000         |
| CE060012<br>CE060018                         | #10        | 6.0             | 20.0<br>26.0                 | 12.0<br>18.0                | 3.9  | 6.9  |  | BLACK      | 1,000         |
| CE100012<br>CE100018                         | #8         | 10              | 22.0<br>28.0                 | 12.0<br>18.0                | 4.9  | 8.4  |  | IVORY      | 1,000         |
| CE160012<br>CE160018                         | #6         | 16              | 24.0<br>28.0                 | 12.0<br>18.0                | 6.2  | 9.6  |  | GREEN      | 1,000         |
| CE250016<br>CE250018<br>CE250022<br>CE250025 | #4         | 25              | 30<br>33<br>36<br>36         | 16<br>18<br>22<br>25        | 7.7  | 12   |  | BROWN      | 500           |
| CE350016<br>CE350025                         | #2         | 35              | 30.0<br>39.0                 | 16.0<br>25.0                | 8.7  | 13.5 |  | IVORY      | 100           |
| CE500020<br>CE500025                         | 1/0        | 50              | 36.0<br>40.0                 | 20.0<br>25.0                | 10.7 | 16.0 |  | OLIVE      | 100           |
| CE700021                                     | 2/0        | 70              | 37.0                         | 21.0                        | 14.3 | 17.6 |  | YELLOW     | 100           |
| CE950025                                     | 3/0        | 95              | 44.0                         | 25.0                        | 15.6 | 19.5 |  | RED        | 100           |

※ Crimping Tool : See Chart Page A36~A37, C8~C13

## ■ TUBULAR BUTT-CONNECTOR TYPE-SP, SB, S-L

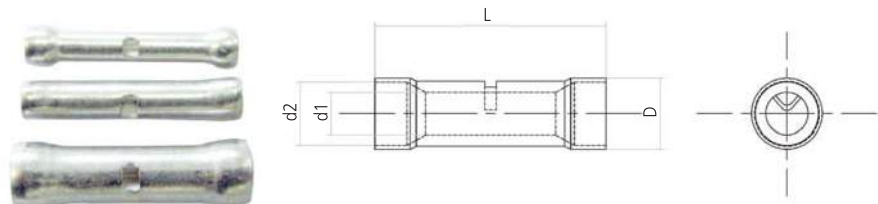
- Material : Electrolytic Copper
- Surface : Tin Plated



| Part Number<br>(Figure 1) | L    | Part Number<br>(Figure 2) | L    | Part Number<br>(Figure 3) | L   | Wire Range |                 | d <sub>1</sub> | D    |
|---------------------------|------|---------------------------|------|---------------------------|-----|------------|-----------------|----------------|------|
|                           |      |                           |      |                           |     | AWG        | mm <sup>2</sup> |                |      |
| JSP 007                   | 7.5  | JSB 007                   | 15   | JS 007L                   | 30  | 20~8       | 0.75            | 1.6            | 2.4  |
| JSP 015                   | 7.5  | JSB 015                   | 15   | JS 015L                   | 30  | 18~16      | 1.5             | 2.0            | 3.0  |
| JSP 025                   | 7.5  | JSB 025                   | 15   | JS 025L                   | 30  | 16~14      | 2.5             | 2.5            | 3.5  |
| JSP 04                    | 7.5  | JSB 04                    | 15   | JS 04L                    | 30  | 14~12      | 4               | 3.2            | 4.5  |
| JSP 06                    | 7.5  | JSB 06                    | 15   | JS 06L                    | 30  | 12~10      | 6               | 4.0            | 5.5  |
| JSP 10                    | 10   | JSB 10                    | 20   | JS 10L                    | 40  | 8          | 10              | 5.0            | 6.7  |
| JSP 16                    | 12   | JSB 16                    | 24   | JS 16L                    | 48  | 6          | 16              | 5.4            | 7.4  |
| JSP 25                    | 14   | JSB 25                    | 28   | JS 25L                    | 56  | 4~3        | 25              | 6.7            | 9.0  |
| JSP 35                    | 15   | JSB 35                    | 30   | JS 35L                    | 60  | 2          | 35              | 8.1            | 10.6 |
| JSP 50                    | 16   | JSB 50                    | 32   | JS 50L                    | 64  | 1~1/0      | 50              | 9.5            | 12   |
| JSP 70                    | 18   | JSB 70                    | 36   | JS 70L                    | 72  | 2/0        | 70              | 11.3           | 14.6 |
| JSP 95                    | 19.5 | JSB 95                    | 39.5 | JS 95L                    | 78  | 3/0~4/0    | 95              | 13.5           | 17   |
| JSP 120                   | 21   | JSB 120                   | 42   | JS 120L                   | 82  | 250Kcmil   | 120             | 15.2           | 19   |
| JSP 150                   | 27   | JSB 150                   | 54   | JS 150L                   | 108 | 300Kcmil   | 150             | 17             | 21   |
| JSP 185                   | 32.5 | JSB 185                   | 65   | JS 185L                   | 130 | 350Kcmil   | 185             | 19             | 23.5 |
| JSP 240                   | 34   | JSB 240                   | 68   | JS 240L                   | 136 | 500Kcmil   | 240             | 22             | 27.4 |
| JSP 300                   | 37   | JSB 300                   | 74   | JS 300L                   | 148 | 600Kcmil   | 300             | 24             | 30.5 |
| JSP 400                   | 44   | JSB 400                   | 88   | JS 400L                   | 176 | 750Kcmil   | 400             | 26             | 34   |
| JSP 500                   | 49   | JSB 500                   | 98   | JS 500L                   | 196 | 1000Kcmil  | 500             | 31             | 40   |
| JSP 630                   | 60   | JSB 630                   | 120  | JS 630L                   | 240 | 1250Kcmil  | 630             | 34             | 45   |

## ■ NON-INSULATED BUTT SPLICE-METRIC FUNNEL ENTRY TYPE-JSFE

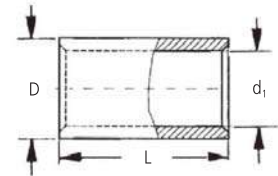
- Material: Electrolytic Copper
- Surface : Tin plated
- Internal wire stop to prevent Over-insertion of Conductor.



| Part Number | Wire Range |                             | Dimension (mm) |                |                |    |
|-------------|------------|-----------------------------|----------------|----------------|----------------|----|
|             | AWG        | Stranded (mm <sup>2</sup> ) | D              | d <sub>1</sub> | d <sub>2</sub> | L  |
| JSFE 15     | 20-16      | 1.5                         | 4.3            | 1.8            | 3.1            | 22 |
| JSFE 25     | 16-14      | 2.5                         | 4.6            | 2.4            | 3.6            | 22 |
| JSFE 6      | 12-10      | 4.6                         | 6.4            | 3.6            | 5.0            | 23 |

## ■ CODE CONDUCTOR BUTT-SPLICE, SHORT BARREL TYPE-S

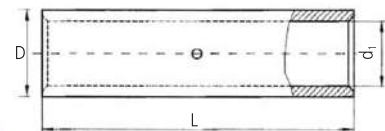
- Material: Electrolytic Copper (TPC)
- Surface : Tin Plated
- Color stripe to Identifi wire range
- To IEC 60228 Class 2 and IEC 60228 Class 5 and 6
- UL Listed 486A-486B up to 35KV



| Part Number | Wire Range |                 | Dimension (mm) |      |     |
|-------------|------------|-----------------|----------------|------|-----|
|             | Code       |                 | d <sub>1</sub> | D    | L   |
|             | AWG        | mm <sup>2</sup> |                |      |     |
| KJS 075     | 26~20      | 0.75            | 1.4            | 2.3  | 7.5 |
| KJS 015     | 20~16      | 1.5             | 1.8            | 3.0  | 7.5 |
| KJS 025     | 16~14      | 2.5             | 2.3            | 3.5  | 7.5 |
| KJS 4       | 14~12      | 4               | 3.0            | 4.5  | 7.5 |
| KJS 6       | 12~10      | 6               | 4.0            | 5.5  | 7.5 |
| KJS 101     | 8          | 10              | 4.5            | 6.7  | 15  |
| KJS 161     | 6          | 16              | 5.4            | 7.4  | 17  |
| KJS 25      | 4~3        | 25              | 6.7            | 9.0  | 20  |
| KJS 35      | 2          | 35              | 8.1            | 10.6 | 23  |
| KJS 50      | 1          | 50              | 9.5            | 12.0 | 25  |
| KJS 60      | 1/0        | 60              | 10.2           | 13.2 | 25  |
| KJS 70      | 2/0        | 70              | 11.3           | 14.6 | 30  |
| KJS 95      | 3/0        | 95              | 13.5           | 17   | 33  |
| KJS 100     | 4/0        | 100             | 14             | 18   | 33  |
| KJS 120     | 250Kcmil   | 120             | 15.2           | 19   | 35  |
| KJS 150     | 300Kcmil   | 150             | 17.0           | 21   | 35  |

## ■ CODE CONDUCTOR BUTT-SPLICE, STANDARD BARREL TYPE-SS

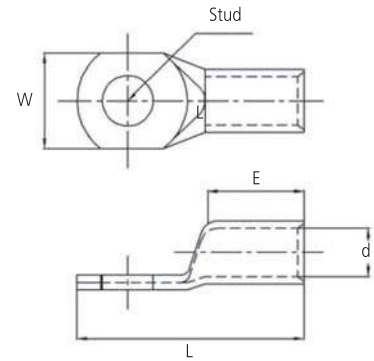
- Material: Electrolytic Copper (TPC)
- Surface : Tin Plated
- Internal Wirestop to Prevent Over Insertion of Cable
- Color Coded to Show Proper Die Number and Color 10mm<sup>2</sup>~630mm<sup>2</sup>
- To IEC 60228 Class 2 and IEC 60228 Class 5 and 6
- UL Listed 486A-486B up to 35KV



| Part Number | Wire Range |                 | Color Code & Die No | Dimension (mm) |      |     |
|-------------|------------|-----------------|---------------------|----------------|------|-----|
|             | Code       |                 |                     | d <sub>1</sub> | D    | L   |
|             | AMG        | mm <sup>2</sup> |                     |                |      |     |
| JSS 075     | 26~20      | 0.75            | Yellow              | 1.4            | 2.3  | 15  |
| JSS 015     | 20~16      | 1.5             | Red                 | 1.8            | 3.0  | 15  |
| JSS 025     | 16~14      | 2.5             | Blue                | 2.3            | 3.5  | 15  |
| JSS 4       | 14~12      | 4               | Brown               | 3.0            | 4.5  | 20  |
| JSS 6       | 12~10      | 6               | Yellow              | 4.0            | 5.5  | 20  |
| JSS 10      | 8          | 10              | Red 21              | 4.5            | 6.7  | 30  |
| JSS 16      | 6          | 16              | Blue 24             | 5.4            | 7.4  | 35  |
| JSS 25      | 4~3        | 25              | Gray 29             | 6.7            | 9.0  | 40  |
| JSS 35      | 2          | 35              | Brown 33            | 8.1            | 10.6 | 45  |
| JSS 50      | 1          | 50              | Green 37            | 9.5            | 12.0 | 50  |
| JSS 60      | 1/0        | 60              | Pink 42             | 10.2           | 13.2 | 50  |
| JSS 70      | 2/0        | 70              | Black 45            | 11.3           | 14.6 | 51  |
| JSS 95      | 3/0        | 95              | Orange 50           | 13.5           | 17   | 54  |
| JSS 100     | 4/0        | 100             | Orange 50           | 14             | 18   | 54  |
| JSS 120     | 250Kcmil   | 120             | Purple 54           | 15.2           | 19   | 57  |
| JSS 150     | 300Kcmil   | 150             | Yellow 62           | 17             | 21   | 57  |
| JSS 185     | 350Kcmil   | 185             | Red 71              | 19             | 23.5 | 60  |
| JSS 200     | 400Kcmil   | 200             | Blue 76             | 21             | 26   | 60  |
| JSS 240     | 500Kcmil   | 240             | Brown 87            | 22             | 27.4 | 73  |
| JSS 300     | 600Kcmil   | 300             | Green 94            | 24             | 30.5 | 73  |
| JSS 400     | 800Kcmil   | 400             | Black 106           | 26             | 34   | 86  |
| JSS 500     | 1000Kcmil  | 500             | White 125           | 31             | 40   | 98  |
| JSS 630     | 1250Kcmil  | 630             | Pink 142            | 34             | 45   | 108 |

## ■ TUBULAR CABLE LUGS, ONE-HOLE, ROUND COMPRESSED TYPE-CE

- Material: Electrolytic Copper (TPC)
- Surface : Tin Plated
- Without Inspection Hole
- To IEC 60228 Class 2

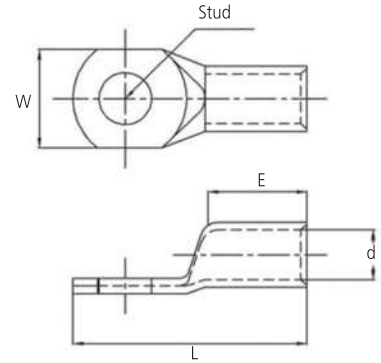


| Part Number | Wire Range |                 | Stud Size | Dimension (mm) |     |    |      | Q'ty/<br>bag |    |
|-------------|------------|-----------------|-----------|----------------|-----|----|------|--------------|----|
|             | Code       |                 |           | W              | E   | L  | D    |              |    |
|             | AWG        | mm <sup>2</sup> |           |                |     |    |      |              |    |
| KJOCE 1.5-3 | 20~16      | 1.5             | M3        | 6.5            | 6.0 | 16 | 1.8  | 1,000        |    |
| KJOCE 1.5-4 |            |                 | M4        |                |     | 17 |      |              |    |
| KJOCE 2.5-3 | 16~14      | 2.5             | M3        | 7.5            | 6.0 | 17 | 2.3  | 1,000        |    |
| KJOCE 2.5-4 |            |                 | M4        |                |     | 18 |      |              |    |
| KJOCE 4-4   | 14~12      | 4               | M4        | 8.5            | 7.0 | 21 | 3.0  | 1,000        |    |
| KJOCE 4-5   |            |                 | M5        |                |     | 22 |      |              |    |
| KJOCE 6-4   | 12~10      | 6               | M4        | 9.2            | 7.0 | 22 | 4.0  | 1,000        |    |
| KJOCE 6-5   |            |                 | M5        |                |     |    |      |              |    |
| KJOCE 10-5  | 8          | 10              | M5        | 11.3           | 11  | 29 | 4.7  | 500          |    |
| KJOCE 10-6  |            |                 | M6        |                |     |    |      |              |    |
| KJOCE 16-5  | 6          | 16              | M5        | 11             | 10  | 29 | 5.4  | 300          |    |
| KJOCE 16-6  |            |                 | M6        |                |     |    |      |              |    |
| KJOCE 16-8  |            |                 | M8        | 14             |     | 33 |      |              |    |
| KJOCE 25-6  | 4          | 25              | M6        | 13             | 11  | 32 | 6.7  | 300          |    |
| KJOCE 25-8  |            |                 | M8        |                |     |    |      |              |    |
| KJOCE 35-6  | 2          | 35              | M6        | 16             | 12  | 37 | 8.1  | 200          |    |
| KJOCE 35-8  |            |                 | M8        |                |     | 38 |      |              |    |
| KJOCE 35-10 |            |                 | M10       | 17             |     | 42 |      |              |    |
| KJOCE 50-6  | 1          | 50              | M6        | 18             | 17  | 44 | 9.5  | 200          |    |
| KJOCE 50-8  |            |                 | M8        |                |     |    |      |              |    |
| KJOCE 50-10 |            |                 | M10       |                |     | 49 |      |              |    |
| KJOCE 50-12 |            |                 | M12       | 20             |     | 53 |      |              |    |
| KJOCE 70-6  | 2/0        | 70              | M6        | 20             | 21  | 53 | 11.3 | 100          |    |
| KJOCE 70-8  |            |                 | M8        |                |     |    |      |              |    |
| KJOCE 70-10 |            |                 | M10       |                |     |    |      |              |    |
| KJOCE 70-12 |            |                 | M12       |                |     |    |      |              | 56 |

※Crimping Tool : See Chart Page C2~C18

## ■ TUBULAR CABLE LUGS, ONE-HOLE, ROUND COMPRESSED TYPE-CE

- Material: Electrolytic Copper (TPC)
- Surface : Tin Plated
- Without Inspection Hole
- To IEC 60228 Class 2

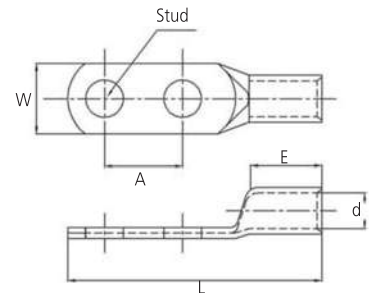


| Part Number   | Wire Range |      | Stud Size | Dimension (mm) |    |     |      | Q'ty/<br>bag |
|---------------|------------|------|-----------|----------------|----|-----|------|--------------|
|               | Code       |      |           | W              | E  | L   | D    |              |
|               | AWG        | mm²  |           |                |    |     |      |              |
| KJOCE 95-6    | 3/0        | 95   | M6        | 25             | 21 | 57  | 13.5 | 50           |
| KJOCE 95-8    |            |      | M8        |                |    |     |      |              |
| KJOCE 95-10   |            |      | M10       |                |    |     |      |              |
| KJOCE 95-12   |            |      | M12       |                |    |     |      |              |
| KJOCE 95-16   |            |      | M16       | 28             |    | 61  |      |              |
| KJOCE 120-8   | 250Kcmil   | 120  | M8        | 28             | 24 | 64  | 15.2 | 50           |
| KJOCE 120-10  |            |      | M10       |                |    |     |      |              |
| KJOCE 120-12  |            |      | M12       |                |    |     |      |              |
| KJOCE 120-16  |            |      | M16       |                |    | 70  |      |              |
| KJOCE 150-10  | 300Kcmil   | 150  | M10       | 32             | 31 | 76  | 17   | 30           |
| KJOCE 150-12  |            |      | M12       |                |    |     |      |              |
| KJOCE 150-16  |            |      | M16       |                |    |     |      |              |
| KJOCE 150-20  |            |      | M20       |                |    | 83  |      |              |
| KJOCE 185-12  | 350Kcmil   | 185  | M12       | 35             | 34 | 80  | 19   | 30           |
| KJOCE 185-16  |            |      | M16       |                |    |     |      |              |
| KJOCE 185-20  |            |      | M20       |                |    | 87  |      |              |
| KJOCE 240-12  | 500Kcmil   | 240  | M12       | 40             | 36 | 93  | 22   | 25           |
| KJOCE 240-16  |            |      | M16       |                |    |     |      |              |
| KJOCE 240-20  |            |      | M20       |                |    |     |      |              |
| KJOCE 300-12  | 600Kcmil   | 300  | M12       | 44             | 43 | 99  | 24   | 20           |
| KJOCE 300-16  |            |      | M16       |                |    |     |      |              |
| KJOCE 300-20  |            |      | M20       |                |    |     |      |              |
| KJOCE 400-12  | 750Kcmil   | 400  | M12       | 48             | 46 | 114 | 26   | 10           |
| KJOCE 400-16  |            |      | M16       |                |    |     |      |              |
| KJOCE 400-20  |            |      | M20       |                |    |     |      |              |
| KJOCE 400-24  |            |      | M24       |                |    |     |      |              |
| KJOCE 500-12  | 1000Kcmil  | 500  | M12       | 57             | 52 | 135 | 31   | 10           |
| KJOCE 500-16  |            |      | M16       |                |    |     |      |              |
| KJOCE 500-20  |            |      | M20       |                |    |     |      |              |
| KJOCE 500-24  |            |      | M24       |                |    |     |      |              |
| KJOCE 630-12  | 1250Kcmil  | 630  | M12       | 64             | 61 | 150 | 34   | 5            |
| KJOCE 630-16  |            |      | M16       |                |    |     |      |              |
| KJOCE 630-20  |            |      | M20       |                |    |     |      |              |
| KJOCE 630-24  |            |      | M24       |                |    |     |      |              |
| KJOCE 800-12  | 1500Kcmil  | 800  | M12       | 72             | 78 | 185 | 39   | 5            |
| KJOCE 800-16  |            |      | M16       |                |    |     |      |              |
| KJOCE 800-20  |            |      | M20       |                |    |     |      |              |
| KJOCE 800-24  |            |      | M24       |                |    |     |      |              |
| KJOCE 1000-16 | 2000Kcmil  | 1000 | M16       | 80             | 78 | 185 | 43   | 5            |
| KJOCE 1000-20 |            |      | M20       |                |    |     |      |              |
| KJOCE 1000-24 |            |      | M24       |                |    |     |      |              |

※Crimping Tool : See Chart Page C2~C18

## ■ TUBULAR CABLE LUGS, TWO-HOLE, ROUND COMPRESSED TYPE-CE

- Material: Electrolytic Copper (TPC)
- Surface : Tin Plated
- Without Inspection Hole
- To IEC 60228 Class 2

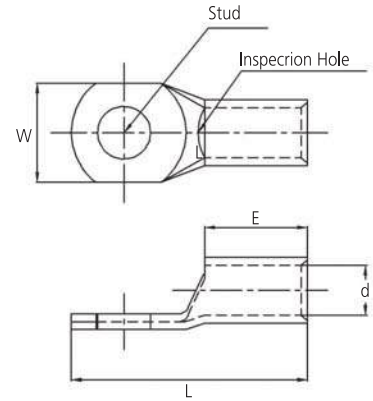


| Part Number  | Wire Range |      | Stud Size | Dimension (mm) |    |      |     |      | Q'ty/<br>bag |
|--------------|------------|------|-----------|----------------|----|------|-----|------|--------------|
|              | Code       |      |           | W              | A  | d    | E   | L    |              |
|              | AWG        | mm²  |           |                |    |      |     |      |              |
| KJOCE 6-2    | 12-10      | 6    | M5        | 9              | 22 | 4.0  | 12  | 53.5 | 1000         |
| KJOCE 10-2   | 8          | 10   | M6        | 10             | 22 | 4.5  | 13  | 58.5 | 500          |
| KJOCE 16-2   | 6          | 16   | M6        | 12             | 22 | 5.4  | 20  | 67.5 | 300          |
| KJOCE 25-2   | 4          | 25   | M8        | 14             | 22 | 6.7  | 20  | 71.5 | 200          |
| KJOCE 35-2   | 2          | 35   | M8        | 16             | 22 | 8.1  | 23  | 75.5 | 100          |
| KJOCE 50-2   | 1          | 50   | M10       | 18             | 22 | 9.5  | 27  | 85.5 | 100          |
| KJOCE 70-2   | 2/0        | 70   | M12       | 22             | 45 | 11.3 | 28  | 115  | 50           |
| KJOCE 95-2   | 3/0        | 95   | M12       | 25             | 45 | 13.5 | 35  | 125  | 50           |
| KJOCE 120-2  | 250Kcmil   | 120  | M12       | 28             | 45 | 15.2 | 40  | 130  | 50           |
| KJOCE 150-2  | 300Kcmil   | 150  | M12       | 31             | 45 | 17   | 43  | 134  | 30           |
| KJOCE 185-2  | 350Kcmil   | 185  | M12       | 34             | 45 | 19   | 45  | 141  | 25           |
| KJOCE 240-2  | 500Kcmil   | 240  | M12       | 40             | 45 | 22   | 53  | 147  | 15           |
| KJOCE 300-2  | 600Kcmil   | 300  | M12       | 45             | 45 | 24   | 63  | 162  | 10           |
| KJOCE 400-2  | 750Kcmil   | 400  | M14       | 48             | 45 | 26   | 66  | 176  | 8            |
| KJOCE 500-2  | 1000Kcmil  | 500  | M14       | 57             | 45 | 31   | 67  | 188  | 8            |
| KJOCE 630-2  | 1250Kcmil  | 630  | M16       | 64             | 45 | 34   | 70  | 211  | 5            |
| KJOCE 800-2  | 1500Kcmil  | 800  | M16       | 72             | 45 | 39   | 100 | 232  | 5            |
| KJOCE 1000-2 | 2000Kcmil  | 1000 | M16       | 80             | 45 | 43   | 102 | 235  | 5            |

※Crimping Tool : See Chart Page C2~C18

## ■ TUBULAR CABLE LUGS, ONE-HOLE, ROUND COMPRESSED TYPE-CP

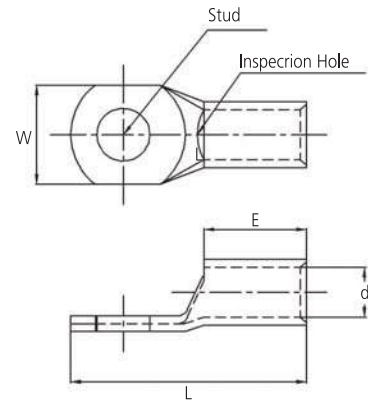
- Material: Electrolytic Copper (TPC)
- Surface : Tin Plated
- With Inspection Hole to visually assure full Conductor insertion.
- Color Coded to Show Proper Die Number and Color  
10mm<sup>2</sup>~70mm<sup>2</sup>
- To IEC 60228 Class 2
- UL Listed 486A-486B up to 35KV



| Part Number | Wire Range |                 | Stud Size | Dimension (mm) |      |    |      | Code Cable Die Color & No. | Q'ty/ bag |
|-------------|------------|-----------------|-----------|----------------|------|----|------|----------------------------|-----------|
|             | AWG        | mm <sup>2</sup> |           | W              | E    | L  | D    |                            |           |
| KJOCP 1.5-3 | 20~16      | 1.5             | M3        | 6.5            | 8.0  | 16 | 1.8  | Red 21                     | 1,000     |
| KJOCP 1.5-4 |            |                 | M4        |                |      | 17 |      |                            |           |
| KJOCP 2.5-3 | 16~14      | 2.5             | M3        | 7.5            | 8.5  | 17 | 2.3  | Blue 24                    | 1,000     |
| KJOCP 2.5-4 |            |                 | M4        |                |      | 18 |      |                            |           |
| KJOCP 4-4   | 14~12      | 4               | M4        | 8.5            | 9.5  | 21 | 3.0  | Brown 20                   | 1,000     |
| KJOCP 4-5   |            |                 | M5        |                |      | 22 |      |                            |           |
| KJOCP 6-4   | 12~10      | 6               | M4        | 9.5            | 9.5  | 22 | 4.0  | Yellow 62                  | 1,000     |
| KJOCP 6-5   |            |                 | M5        |                |      |    |      |                            |           |
| KJOCP 10-5  | 8          | 10              | M5        | 11.5           | 13   | 29 | 4.7  | Red 21                     | 500       |
| KJOCP 10-6  |            |                 | M6        |                |      |    |      |                            |           |
| KJOCP 16-5  | 6          | 16              | M5        | 12             | 13   | 29 | 5.4  | Blue 24                    | 300       |
| KJOCP 16-6  |            |                 | M6        |                |      |    |      |                            |           |
| KJOCP 16-8  |            |                 | M8        | 14             |      | 33 |      |                            |           |
| KJOCP 25-6  | 4          | 25              | M6        | 13             | 13   | 32 | 6.7  | Gray 29                    | 300       |
| KJOCP 25-8  |            |                 | M8        |                |      |    |      |                            |           |
| KJOCP 35-6  | 2          | 35              | M6        | 16             | 16.5 | 37 | 8.1  | Brown 33                   | 200       |
| KJOCP 35-8  |            |                 | M8        |                |      | 38 |      |                            |           |
| KJOCP 35-10 |            |                 | M10       | 17             |      | 42 |      |                            |           |
| KJOCP 50-6  | 1          | 50              | M6        | 18             | 23   | 44 | 9.5  | Green 37                   | 200       |
| KJOCP 50-8  |            |                 | M8        |                |      |    |      |                            |           |
| KJOCP 50-10 |            |                 | M10       |                |      | 49 |      |                            |           |
| KJOCP 50-12 |            |                 | M12       | 20             |      | 53 |      |                            |           |
| KJOCP 70-6  | 2/0        | 70              | M6        | 21             | 26   |    | 11.3 | Black 45                   | 100       |
| KJOCP 70-8  |            |                 | M8        |                |      | 53 |      |                            |           |
| KJOCP 70-10 |            |                 | M10       |                |      |    |      |                            |           |
| KJOCP 70-12 |            |                 | M12       |                |      | 57 |      |                            |           |

## ■ TUBULAR CABLE LUGS, ONE-HOLE, ROUND COMPRESSED TYPE-CP

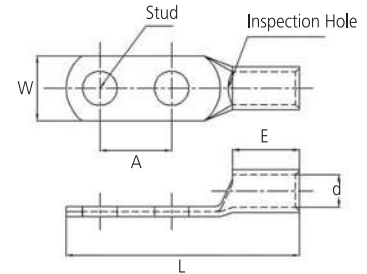
- Material: Electrolytic Copper (TPC)
- Surface : Tin Plated
- With Inspection Hole to visually assure full Conductor insertion.
- Color Coded to Show Proper Die Number and Color  
95mm<sup>2</sup>~1000mm<sup>2</sup>
- To IEC 60228 Class 2 and Class 5
- UL Listed 486A-486B up to 35KV



| Part Number   | Wire Range |                 | Stud Size | Dimension (mm) |    |     |      | Code Cable Die Color & No. | Q'ty/ bag |
|---------------|------------|-----------------|-----------|----------------|----|-----|------|----------------------------|-----------|
|               | Code       |                 |           | W              | E  | L   | D    |                            |           |
|               | AWG        | mm <sup>2</sup> |           |                |    |     |      |                            |           |
| KJOCP 95-6    | 3/0        | 95              | M6        | 25             | 27 | 58  | 13.5 | Orange 48                  | 50        |
| KJOCP 95-8    |            |                 | M8        |                |    |     |      |                            |           |
| KJOCP 95-10   |            |                 | M10       |                |    |     |      |                            |           |
| KJOCP 95-12   |            |                 | M12       |                |    | 61  |      |                            |           |
| KJOCP 95-16   |            |                 | M16       | 28             | 67 |     |      |                            |           |
| KJOCP 120-8   | 250Kcmil   | 120             | M8        | 28             | 28 | 63  | 15.2 | Purple 54                  | 50        |
| KJOCP 120-10  |            |                 | M10       |                |    |     |      |                            |           |
| KJOCP 120-12  |            |                 | M12       |                |    |     |      |                            |           |
| KJOCP 120-16  |            |                 | M16       |                |    | 70  |      |                            |           |
| KJOCP 150-10  | 300Kcmil   | 150             | M10       | 30             | 37 | 76  | 17   | Yellow 62                  | 30        |
| KJOCP 150-12  |            |                 | M12       |                |    |     |      |                            |           |
| KJOCP 150-16  |            |                 | M16       |                |    |     |      |                            |           |
| KJOCP 150-20  |            |                 | M20       |                |    | 83  |      |                            |           |
| KJOCP 185-12  | 350Kcmil   | 185             | M12       | 35             | 39 | 80  | 19   | Red 71                     | 30        |
| KJOCP 185-16  |            |                 | M16       |                |    | 87  |      |                            |           |
| KJOCP 185-20  |            |                 | M20       |                |    |     |      |                            |           |
| KJOCP 240-12  | 500Kcmil   | 240             | M12       | 40             | 45 | 93  | 22   | Brown 87                   | 25        |
| KJOCP 240-16  |            |                 | M16       |                |    |     |      |                            |           |
| KJOCP 240-20  |            |                 | M20       |                |    |     |      |                            |           |
| KJOCP 300-12  | 600Kcmil   | 300             | M12       | 45             | 50 | 100 | 24   | Green 94                   | 20        |
| KJOCP 300-16  |            |                 | M16       |                |    |     |      |                            |           |
| KJOCP 300-20  |            |                 | M20       |                |    |     |      |                            |           |
| KJOCP 400-12  | 750Kcmil   | 400             | M12       | 49             | 53 | 114 | 26   | Black 106                  | 10        |
| KJOCP 400-16  |            |                 | M16       |                |    |     |      |                            |           |
| KJOCP 400-20  |            |                 | M20       |                |    |     |      |                            |           |
| KJOCP 400-24  |            |                 | M24       |                |    |     |      |                            |           |
| KJOCP 500-12  | 1000Kcmil  | 500             | M12       | 57             | 60 | 136 | 31   | White 125                  | 10        |
| KJOCP 500-16  |            |                 | M16       |                |    |     |      |                            |           |
| KJOCP 500-20  |            |                 | M20       |                |    |     |      |                            |           |
| KJOCP 500-24  |            |                 | M24       |                |    |     |      |                            |           |
| KJOCP 630-12  | 1250Kcmil  | 630             | M12       | 64             | 68 | 150 | 34   | Pink 142                   | 5         |
| KJOCP 630-16  |            |                 | M16       |                |    |     |      |                            |           |
| KJOCP 630-20  |            |                 | M20       |                |    |     |      |                            |           |
| KJOCP 630-24  |            |                 | M24       |                |    |     |      |                            |           |
| KJOCP 800-12  | 1500Kcmil  | 800             | M12       | 72             | 84 | 185 | 39   | Orange 150                 | 5         |
| KJOCP 800-16  |            |                 | M16       |                |    |     |      |                            |           |
| KJOCP 800-20  |            |                 | M20       |                |    |     |      |                            |           |
| KJOCP 800-24  |            |                 | M24       |                |    |     |      |                            |           |
| KJOCP 1000-16 | 2000Kcmil  | 1000            | M16       | 80             | 84 | 185 | 43   | Green 194                  | 5         |
| KJOCP 1000-20 |            |                 | M20       |                |    |     |      |                            |           |
| KJOCP 1000-24 |            |                 | M24       |                |    |     |      |                            |           |

## ■ TUBULAR CABLE LUGS, TWO-HOLE, ROUND COMPRESSED

- Material : Electrolytic Copper (TPC)
- Surface : Tin Plated
- With Inspection Hole
- Color Coded to Show Proper Die Number and Color  
6mm<sup>2</sup>~1000mm<sup>2</sup>
- To IEC 60228 Class 2
- UL Listed 486A-486B up to 35KV



| Part Number  | Wire Range<br>Code |                 | Stud<br>Size | Dimension (mm) |    |      |     |      | Code Cable<br>Die Color &<br>No. | Q'ty/<br>bag |
|--------------|--------------------|-----------------|--------------|----------------|----|------|-----|------|----------------------------------|--------------|
|              | AWG                | mm <sup>2</sup> |              | W              | A  | d    | E   | L    |                                  |              |
| KJOCP 6-2    | 12-10              | 6               | M5           | 9              | 22 | 4.0  | 14  | 53.5 | Brown20                          | 1000         |
| KJOCP 10-2   | 8                  | 10              | M6           | 10             | 22 | 4.5  | 16  | 58.5 | Red21                            | 500          |
| KJOCP 16-2   | 6                  | 16              | M6           | 12             | 22 | 5.4  | 23  | 67.5 | Blue24                           | 300          |
| KJOCP 25-2   | 4                  | 25              | M8           | 14             | 22 | 6.7  | 23  | 71.5 | Gray29                           | 200          |
| KJOCP 35-2   | 2                  | 35              | M8           | 16             | 22 | 8.1  | 26  | 75.5 | Brown33                          | 100          |
| KJOCP 50-2   | 1                  | 50              | M10          | 19             | 22 | 9.5  | 31  | 85.5 | Green37                          | 100          |
| KJOCP 70-2   | 2/0                | 70              | M12          | 22             | 45 | 11.3 | 32  | 115  | Black45                          | 50           |
| KJOCP 95-2   | 3/0                | 95              | M12          | 25             | 45 | 13.5 | 38  | 125  | Orange50                         | 50           |
| KJOCP 120-2  | 250Kcmil           | 120             | M12          | 28             | 45 | 15.2 | 41  | 130  | Purple54                         | 50           |
| KJOCP 150-2  | 300Kcmil           | 150             | M12          | 32             | 45 | 17   | 45  | 135  | Yellow62                         | 30           |
| KJOCP 185-2  | 350Kcmil           | 185             | M12          | 35             | 45 | 19   | 48  | 142  | Red71                            | 25           |
| KJOCP 240-2  | 500Kcmil           | 240             | M12          | 41             | 45 | 22   | 56  | 148  | Brown87                          | 15           |
| KJOCP 300-2  | 600Kcmil           | 300             | M12          | 45             | 45 | 24   | 65  | 162  | Green94                          | 10           |
| KJOCP 400-2  | 750Kcmil           | 400             | M14          | 49             | 45 | 26   | 68  | 178  | Black106                         | 8            |
| KJOCP 500-2  | 1000Kcmil          | 500             | M14          | 57             | 45 | 31   | 72  | 188  | White125                         | 8            |
| KJOCP 630-2  | 1250Kcmil          | 630             | M16          | 64             | 45 | 34   | 81  | 212  | Pink142                          | 5            |
| KJOCP 800-2  | 1500Kcmil          | 800             | M16          | 72             | 45 | 39   | 100 | 232  | Orange150                        | 5            |
| KJOCP 1000-2 | 2000Kcmil          | 1000            | M16          | 80             | 45 | 43   | 102 | 235  | Green194                         | 5            |

## ■ THERMO COMPRESSION TERMINAL LUG (온도변화용 동관단자)



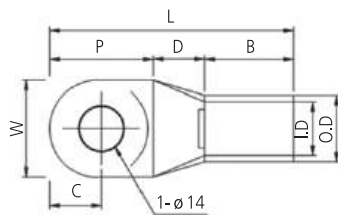
정상온도



온도상승 후

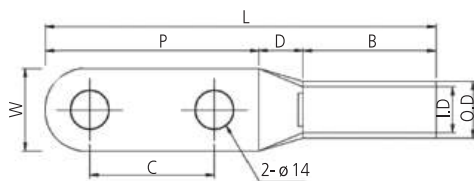


### < 1HOLE >



| SQ    | I.D  | O.D  | L   | B  | W    | P  | C    | D  | T   | Hole Size |
|-------|------|------|-----|----|------|----|------|----|-----|-----------|
| 25sq  | 6.7  | 9.0  | 45  | 20 | 13.0 | 21 | 10.5 | 4  | 2.3 |           |
| 35sq  | 8.1  | 10.6 | 51  | 22 | 15.0 | 24 | 11.0 | 5  | 2.5 |           |
| 50sq  | 9.5  | 12   | 52  | 22 | 17.0 | 24 | 12.0 | 6  | 2.5 |           |
| 70sq  | 11.4 | 14.6 | 55  | 23 | 21.0 | 26 | 12.5 | 6  | 3.2 |           |
| 95sq  | 13.5 | 17   | 61  | 25 | 24.5 | 28 | 14.0 | 8  | 3.5 |           |
| 120sq | 15.2 | 19   | 63  | 27 | 28.5 | 28 | 14.0 | 8  | 3.8 |           |
| 150sq | 17   | 21   | 70  | 30 | 30.5 | 28 | 14.0 | 10 | 4.0 |           |
| 185sq | 19   | 23.5 | 80  | 34 | 34.0 | 34 | 17.0 | 12 | 4.5 |           |
| 240sq | 22   | 28   | 87  | 40 | 40.0 | 35 | 17.0 | 12 | 6.0 |           |
| 300sq | 24   | 30.5 | 102 | 45 | 44.0 | 43 | 17.0 | 14 | 6.5 |           |
| 400sq | 26   | 34   | 109 | 50 | 48.0 | 45 | 17.0 | 14 | 8.0 |           |
| 500sq | 31   | 40   | 114 | 55 | 57.0 | 45 | 17.0 | 14 | 9.0 |           |

### < 2HOLE >



| SQ    | I.D  | O.D  | L   | B  | W    | P  | C  | D  | T   | Hole Size |
|-------|------|------|-----|----|------|----|----|----|-----|-----------|
| 25sq  | 6.7  | 9.0  | 95  | 27 | 13.0 | 64 | 45 | 4  | 2.3 |           |
| 35sq  | 8.1  | 10.6 | 99  | 30 | 15.0 | 64 | 45 | 5  | 2.5 |           |
| 50sq  | 9.5  | 12   | 109 | 35 | 17.0 | 68 | 45 | 6  | 2.5 |           |
| 70sq  | 11.4 | 14.6 | 119 | 37 | 21.0 | 76 | 45 | 6  | 3.2 |           |
| 95sq  | 13.5 | 17   | 132 | 46 | 24.5 | 78 | 45 | 8  | 3.5 |           |
| 120sq | 15.2 | 19   | 133 | 47 | 28.5 | 78 | 45 | 8  | 3.8 |           |
| 150sq | 17   | 21   | 143 | 55 | 30.5 | 78 | 45 | 10 | 4.0 |           |
| 185sq | 19   | 23.5 | 147 | 57 | 34.0 | 78 | 45 | 12 | 4.5 |           |
| 240sq | 22   | 28   | 150 | 58 | 40.0 | 80 | 45 | 12 | 6.0 |           |
| 300sq | 24   | 30.5 | 172 | 74 | 44.0 | 84 | 45 | 14 | 6.5 |           |
| 400sq | 26   | 34   | 172 | 74 | 48.0 | 84 | 45 | 14 | 8.0 |           |
| 500sq | 31   | 40   | 174 | 77 | 57.0 | 84 | 45 | 14 | 9.0 |           |

## ■ CABLE TIES-NYLON 6.6 TYPE-JJV

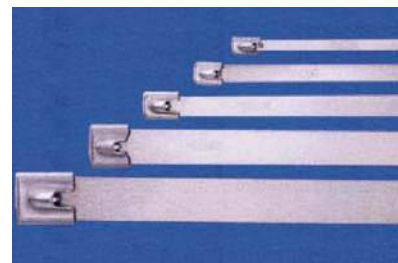
- Flammability : UL 94V-2(J) or UL94V-0(JV)
- JV-Type : Helongen free
- Color: Natural or All Colors
- For indor use



| Part Number             | Length<br>(mm) | Width<br>(mm) | Thickness<br>(mm) | Max.<br>Bundle Dia.<br>(mm) | Min.Loop<br>Tensile Strength |      | Installation<br>Tool No          | Package<br>Qty. |
|-------------------------|----------------|---------------|-------------------|-----------------------------|------------------------------|------|----------------------------------|-----------------|
|                         |                |               |                   |                             | Lbs                          | Kg   |                                  |                 |
| Miniature-Series 2.5    |                |               |                   |                             |                              |      |                                  |                 |
| J-100                   | 103            | 2.5           | 0.9               | 22                          | 18                           | 8.1  | JOT-702                          | 1000            |
| J-162                   | 162            |               | 1.0               | 40                          |                              |      | JOT-328                          |                 |
| J-202                   | 200            |               | 1.0               | 51                          |                              |      |                                  |                 |
| Miniature-Series 2.5    |                |               |                   |                             |                              |      |                                  |                 |
| J-140                   | 148            | 3.6           | 1.1               | 35                          | 40                           | 18.1 | JOT-702                          | 1000            |
| J-203                   | 200            |               | 1.3               | 51                          |                              |      | JOT-328                          |                 |
| J-303                   | 300            |               | 1.3               | 77                          |                              |      |                                  |                 |
| J-372                   | 368            |               | 1.3               | 102                         |                              |      |                                  |                 |
| Standard-Series 4.8     |                |               |                   |                             |                              |      |                                  |                 |
| J-200                   | 201            | 4.8           | 1.3               | 48                          | 50                           | 22.6 | JOT-702                          | 1000            |
| J-250                   | 249            |               | 1.3               | 64                          |                              |      | JOT-328                          |                 |
| J-300                   | 300            |               | 1.4               | 76                          |                              |      | 500                              |                 |
| J-373                   | 368            |               | 1.5               | 102                         |                              |      |                                  |                 |
| Light Heavy-Series 6.3  |                |               |                   |                             |                              |      |                                  |                 |
| J-270                   | 270            | 6.0           | 1.4               | 73                          | 10                           | 45.3 | JOT-519<br>JOT-600L<br>JOT-GS4EH | 500             |
| Duty Heavy-Series 7.6   |                |               |                   |                             |                              |      |                                  |                 |
| J-370                   | 370            | 7.6           | 1.6               | 102                         | 120                          | 54.4 | JOT-519<br>JOT-600L<br>JOT-GS4EH | 300             |
| Heavy-Series 9.0        |                |               |                   |                             |                              |      |                                  |                 |
| J-450                   | 450            | 9.0           | 1.9               | 127                         | 175                          | 79.3 | JOT-519                          | 100             |
| J-530                   | 530            |               |                   | 152                         |                              |      | JOT-600L                         |                 |
| J-780                   | 780            |               |                   | 229                         |                              |      | JOT-GS4EH                        |                 |
| J-1000                  | 1000           |               |                   | 305                         |                              |      |                                  |                 |
| Extra Heavy-Series 12.7 |                |               |                   |                             |                              |      |                                  |                 |
| J-540EH                 | 540            | 12.7          | 2.1               | 150                         | 250                          | 113  | JOT-600L<br>JOT-GS4EH            | 50              |

## ■ STAINLESS STEEL CABLE TIES-SELF-LOCKING

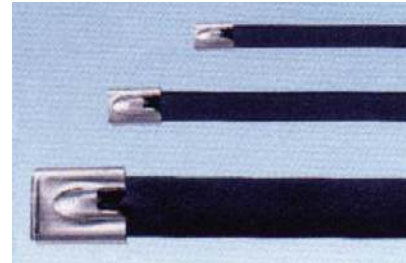
- Metal : AISI 304 or AISI 316 Grade stainless steel
- For indoor or outdoor use.
- High temperature applications ranging -80°C to 538°C



| Part Number    |                | Max. Bundle Dia. (mm) | Length (mm) | Min. Loop Tensile Strength |       | Min. Bundle Dia. (mm) | Width (mm) | Thickness (mm) | Package Qty. |
|----------------|----------------|-----------------------|-------------|----------------------------|-------|-----------------------|------------|----------------|--------------|
| AISI 304       | AISI 316       |                       |             | Lbs                        | Kg    |                       |            |                |              |
| JSST125S-304   | JSST125S-316   | 25                    | 125         | 200                        | 90.8  | 12.7                  | 4.6        | 0.25           | 100          |
| JSST150S-304   | JSST150S-316   | 35                    | 150         |                            |       |                       |            |                |              |
| JSST200S-304   | JSST200S-316   | 51                    | 200         |                            |       |                       |            |                |              |
| JSST260S-304   | JSST260S-316   | 69                    | 260         |                            |       |                       |            |                |              |
| JSST360S-304   | JSST360S-316   | 102                   | 360         |                            |       |                       |            |                |              |
| JSST520S-304   | JSST520S-316   | 152                   | 520         |                            |       |                       |            |                |              |
| JSST680S-304   | JSST680S-316   | 203                   | 680         |                            |       |                       |            |                |              |
| JSST840S-304   | JSST840S-316   | 254                   | 840         |                            |       |                       |            |                |              |
| JSST1000S-304  | JSST1000S-316  | 304                   | 1050        | 250                        | 113.4 | 12.7                  | 6.4        | 0.25           | 100          |
| JSST150LH-304  | JSST150LH-316  | 35                    | 150         |                            |       |                       |            |                |              |
| JSST200LH-304  | JSST200LH-316  | 51                    | 200         |                            |       |                       |            |                |              |
| JSST360LH-304  | JSST360LH-316  | 102                   | 360         |                            |       |                       |            |                |              |
| JSST520LH-304  | JSST520LH-316  | 152                   | 520         |                            |       |                       |            |                |              |
| JSST680LH-304  | JSST680LH-316  | 203                   | 680         |                            |       |                       |            |                |              |
| JSST840LH-304  | JSST840LH-316  | 254                   | 840         |                            |       |                       |            |                |              |
| JSST1000LH-304 | JSST1000LH-316 | 304                   | 1050        |                            |       |                       |            |                |              |
| JSST200H-304   | JSST200H-316   | 51                    | 200         | 450                        | 204   | 12.7                  | 7.9        | 0.25           | 50           |
| JSST260H-304   | JSST260H-316   | 69                    | 260         |                            |       |                       |            |                |              |
| JSST360H-304   | JSST360H-316   | 102                   | 360         |                            |       |                       |            |                |              |
| JSST520H-304   | JSST520H-316   | 152                   | 520         |                            |       |                       |            |                |              |
| JSST680H-304   | JSST680H-316   | 203                   | 680         |                            |       |                       |            |                |              |
| JSST840H-304   | JSST840H-316   | 254                   | 840         |                            |       |                       |            |                |              |
| JSST1000H-304  | JSST1000H-316  | 304                   | 1000        |                            |       |                       |            |                |              |
| JSST440EH-304  | JSST440EH-316  | 102                   | 434         | 600                        | 272   | 25.4                  | 12.7       | 0.25           | 50           |
| JSST600EH-304  | JSST600EH-316  | 152                   | 594         |                            |       |                       |            |                |              |
| JSST760EH-304  | JSST760EH-316  | 203                   | 754         |                            |       |                       |            |                |              |
| JSST920EH-304  | JSST920EH-316  | 254                   | 912         |                            |       |                       |            |                |              |
| JSST1100EH-304 | JSST1100EH-316 | 305                   | 1072        |                            |       |                       |            |                |              |
| JSST440UH-304  | JSST440UH-316  | 102                   | 434         | 900                        | 408   | 25.4                  | 15.9       | 0.38           | 10           |
| JSST600UH-304  | JSST600UH-316  | 152                   | 594         |                            |       |                       |            |                |              |
| JSST760UH-304  | JSST760UH-316  | 203                   | 754         |                            |       |                       |            |                |              |
| JSST920UH-304  | JSST920UH-316  | 254                   | 912         |                            |       |                       |            |                |              |
| JSST1100UH-304 | JSST1100UH-316 | 305                   | 1072        |                            |       |                       |            |                |              |

## ■ STAINLESS STEEL CABLE TIES-FULLY COATED

- Base metal: AISI 304 or 316 Grade stainless steel
- Coating : PVC, Polyester Black(Epoxy) Nylon
- Resistance to chemicals and salt spray
- Helongen free
- Temperature tolerance -40℃ to 160℃
- Coating thickness : 0.08mm/0.13mm
- For communication and electrical cables



| Part Number    |                | Max. Bundle Dia. (mm) | Length (mm) | Min. Loop Tensile Strength |      | Min. Bundle Dia. (mm) | Width (mm) | Thickness (mm) | Package Qty. |
|----------------|----------------|-----------------------|-------------|----------------------------|------|-----------------------|------------|----------------|--------------|
| AISI 304       | AISI 316       |                       |             | Lbs                        | Kg   |                       |            |                |              |
| JSFT125S-304   | JSFT125S-316   | 25                    | 125         | 100                        | 45.4 | 12.7                  | 4.6        | 0.25           | 100          |
| JSFT150S-304   | JSFT150S-316   | 35                    | 150         |                            |      |                       |            |                |              |
| JSFT200S-304   | JSFT200S-316   | 51                    | 200         |                            |      |                       |            |                |              |
| JSFT260S-304   | JSFT260S-316   | 69                    | 260         |                            |      |                       |            |                |              |
| JSFT360S-304   | JSFT360S-316   | 102                   | 360         |                            |      |                       |            |                |              |
| JSFT520S-304   | JSFT520S-316   | 152                   | 520         |                            |      |                       |            |                |              |
| JSFT680S-304   | JSFT680S-316   | 203                   | 680         |                            |      |                       |            |                |              |
| JSFT840S-304   | JSFT840S-316   | 254                   | 840         |                            |      |                       |            |                |              |
| JSFT1000S-304  | JSFT1000S-316  | 304                   | 1050        | 150                        | 67   | 12.7                  | 6.4        | 0.25           | 100          |
| JSFT150LH-304  | JSFT1500S-316  | 35                    | 150         |                            |      |                       |            |                |              |
| JSFT200LH-304  | JSFT200LH-316  | 51                    | 200         |                            |      |                       |            |                |              |
| JSFT360LH-304  | JSFT360LH-316  | 102                   | 360         |                            |      |                       |            |                |              |
| JSFT520LH-304  | JSFT520LH-316  | 152                   | 520         |                            |      |                       |            |                |              |
| JSFT680LH-304  | JSFT680LH-316  | 203                   | 680         |                            |      |                       |            |                |              |
| JSFT840LH-304  | JSFT840LH-316  | 254                   | 840         |                            |      |                       |            |                |              |
| JSFT1000LH-304 | JSFT1000LH-316 | 304                   | 1050        |                            |      |                       |            |                |              |
| JSFT200H-304   | JSFT200H-316   | 51                    | 200         | 250                        | 113  | 12.7                  | 7.9        | 0.25           | 50           |
| JSFT260H-304   | JSFT260H-316   | 69                    | 260         |                            |      |                       |            |                |              |
| JSFT360H-304   | JSFT360H-316   | 102                   | 360         |                            |      |                       |            |                |              |
| JSFT520H-304   | JSFT520H-316   | 152                   | 520         |                            |      |                       |            |                |              |
| JSFT680H-304   | JSFT680H-316   | 203                   | 680         |                            |      |                       |            |                |              |
| JSFT840H-304   | JSFT840H-316   | 254                   | 840         |                            |      |                       |            |                |              |
| JSFT1000H-304  | JSFT1000H-316  | 304                   | 1000        |                            |      |                       |            |                |              |
| JSFT440EH-304  | JSFT440EH-316  | 102                   | 434         | 300                        | 136  | 25.4                  | 12.7       | 0.25           | 50           |
| JSFT600EH-304  | JSFT600EH-316  | 152                   | 594         |                            |      |                       |            |                |              |
| JSFT760EH-304  | JSFT760EH-316  | 203                   | 754         |                            |      |                       |            |                |              |
| JSFT920EH-304  | JSFT920EH-316  | 254                   | 912         |                            |      |                       |            |                |              |
| JSFT1100EH-304 | JSFT1100EH-316 | 305                   | 1072        |                            |      |                       |            |                |              |
| JSFT440UH-304  | JSFT440UH-316  | 102                   | 434         | 450                        | 204  | 25.4                  | 15.9       | 0.38           | 10           |
| JSFT600UH-304  | JSFT600UH-316  | 152                   | 594         |                            |      |                       |            |                |              |
| JSFT760UH-304  | JSFT760UH-316  | 203                   | 754         |                            |      |                       |            |                |              |
| JSFT920UH-304  | JSFT920UH-316  | 254                   | 912         |                            |      |                       |            |                |              |
| JSFT1100UH-304 | JSFT1100UH-316 | 305                   | 1072        |                            |      |                       |            |                |              |

## ■ STAINLESS STEEL CABLE TIES-SEMI-COATED

- Base metal: AISI 304 or 316 Grade stainless steel
- Semi-Coated Stainless steel ties
- Coating : PVC, Polyester Black & Nylon
- Resistance to chemicals and salt spray
- Helongen free
- Temperature tolerance -40°C to 140°C
- Coating thickness : 0.08mm/0.13mm
- For communication and electrical cables

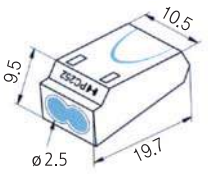
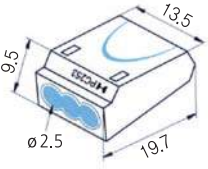
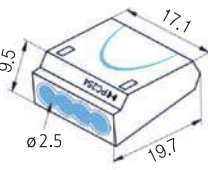
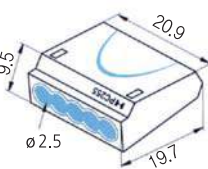
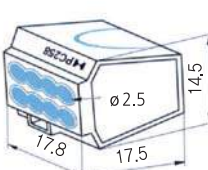


| Part Number    |                | Max. Bundle Dia. (mm) | Length (mm) | Min. Loop Tensile Strength |       | Min. Bundle Dia. (mm) | Width (mm) | Thickness (mm) | Package Qty. |
|----------------|----------------|-----------------------|-------------|----------------------------|-------|-----------------------|------------|----------------|--------------|
| AISI 304       | AISI 316       |                       |             | Lbs                        | Kg    |                       |            |                |              |
| JSHT125S-304   | JSHT125S-316   | 25                    | 125         | 200                        | 90.8  | 12.7                  | 4.6        | 0.25           | 100          |
| JSHT150S-304   | JSHT150S-316   | 35                    | 150         |                            |       |                       |            |                |              |
| JSHT200S-304   | JSHT200S-316   | 51                    | 200         |                            |       |                       |            |                |              |
| JSHT260S-304   | JSHT260S-316   | 69                    | 260         |                            |       |                       |            |                |              |
| JSHT360S-304   | JSHT360S-316   | 102                   | 360         |                            |       |                       |            |                |              |
| JSHT520S-304   | JSHT520S-316   | 152                   | 520         |                            |       |                       |            |                |              |
| JSHT680S-304   | JSHT680S-316   | 203                   | 680         |                            |       |                       |            |                |              |
| JSHT840S-304   | JSHT840S-316   | 254                   | 840         | 250                        | 113.4 | 12.7                  | 6.4        | 0.25           | 100          |
| JSHT1000S-304  | JSHT1000S-316  | 304                   | 1050        |                            |       |                       |            |                |              |
| JSHT150LH-304  | JSHT1500S-316  | 35                    | 150         |                            |       |                       |            |                |              |
| JSHT200 -304   | JSHT200S-316   | 51                    | 200         |                            |       |                       |            |                |              |
| JSHT360LH-304  | JSHT360LH-316  | 102                   | 360         |                            |       |                       |            |                |              |
| JSHT520 -304   | JSHT520LH-316  | 152                   | 520         |                            |       |                       |            |                |              |
| JSHT680LH-304  | JSHT680LH-316  | 203                   | 680         |                            |       |                       |            |                |              |
| JSHT840LH-304  | JSHT840LH-316  | 254                   | 840         | 450                        | 204   | 12.7                  | 7.9        | 0.25           | 50           |
| JSHT1000LH-304 | JSHT1000LH-316 | 304                   | 1050        |                            |       |                       |            |                |              |
| JSHT200H-304   | JSHT200H-316   | 51                    | 200         |                            |       |                       |            |                |              |
| JSHT260H-304   | JSHT260H-316   | 69                    | 260         |                            |       |                       |            |                |              |
| JSHT360H-304   | JSHT360H-316   | 102                   | 360         |                            |       |                       |            |                |              |
| JSHT520H-304   | JSHT520H-316   | 152                   | 520         |                            |       |                       |            |                |              |
| JSHT680H-304   | JSHT680H-316   | 203                   | 680         |                            |       |                       |            |                |              |
| JSHT840H-304   | JSHT840H-316   | 254                   | 840         | 600                        | 272   | 25.4                  | 12.7       | 0.25           | 50           |
| JSHT1000H-304  | JSHT1000H-316  | 304                   | 1000        |                            |       |                       |            |                |              |
| JSHT440EH-304  | JSHT440EH-316  | 102                   | 434         |                            |       |                       |            |                |              |
| JSHT600EH-304  | JSHT600EH-316  | 152                   | 594         |                            |       |                       |            |                |              |
| JSHT760EH-304  | JSHT760EH-316  | 203                   | 754         |                            |       |                       |            |                |              |
| JSHT920EH-304  | JSHT920EH-316  | 254                   | 912         | 900                        | 408   | 25.4                  | 15.9       | 0.38           | 10           |
| JSHT1100EH-304 | JSHT1100EH-316 | 305                   | 1072        |                            |       |                       |            |                |              |
| JSHT440UH-304  | JSHT440UH-316  | 102                   | 434         |                            |       |                       |            |                |              |
| JSHT600UH-304  | JSHT600UH-316  | 152                   | 594         |                            |       |                       |            |                |              |
| JSHT760UH-304  | JSHT760UH-316  | 203                   | 754         |                            |       |                       |            |                |              |
| JSHT920UH-304  | JSHT920UH-316  | 254                   | 912         | 900                        | 408   | 25.4                  | 15.9       | 0.38           | 10           |
| JSHT1100UH-304 | JSHT1100UH-316 | 305                   | 1072        |                            |       |                       |            |                |              |

## ■ PUSH-IN WIRE CONNECTORS FOR USE WITH SOLID CONDUCTORS

- Housing : Polycarbonate (PC)  
flame-retardant to UL94V-2  
Working Temperature :  
T110°C (IEC), 105°C/221°F (UL)
- Clamp Unit : Copper, tin-plated  
Stainless spring steel
- Strip Length : 11 mm / 0.43 inch.
- Rate 600V Max. for building wiring and 1000V Max. in lighting fixtures / luminaries and signs
- Available in specific packing and private labeling



| Dimensions/mm                                                                       | Part No. | Color        | Poles | Wire Range & Ratings                                                        | Pcs/Bag | Pcs/Ctn |
|-------------------------------------------------------------------------------------|----------|--------------|-------|-----------------------------------------------------------------------------|---------|---------|
|   | PC-252   | Clear Red    | 2     | IEC : 24A, 450V<br>2.5 mm <sup>2</sup> , Sol<br>UL : 600V<br>22-12 AWG, Sol | 500     | 5,000   |
|  | PC-253   | Clear Orange | 3     | IEC : 24A, 450V<br>2.5mm <sup>2</sup> , Sol<br>UL : 600V<br>22-12 AWG, Sol  | 500     | 5,000   |
|  | PC-254   | Clear Yellow | 4     | IEC : 24A, 450V<br>2.5mm <sup>2</sup> , Sol<br>UL : 600V<br>22-12 AWG, Sol  | 500     | 5,000   |
|  | PC-255   | Clear Grey   | 5     | IEC : 24A, 450V<br>2.5mm <sup>2</sup> , Sol<br>UL : 600V<br>22-12 AWG, Sol  | 500     | 5,000   |
|  | PC-258   | Clear Black  | 8     | IEC : 24A, 450V<br>2.5mm <sup>2</sup> , Sol<br>UL : 600V<br>22-12 AWG, Sol  | 250     | 2,500   |

※For the order of Transparent connectors, just add the letters "CL" after the part number.

## ■ TERMINAL CAPS

- Material: Soft PVC
- Maximum service temp : 80°C
- Standard color : red, white, blue, yellow, black  
(Green, brown available on special request)



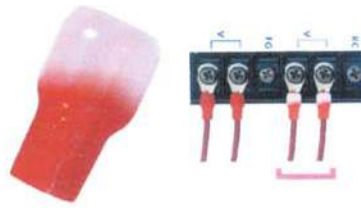
| Part No. | Wire Range (mm <sup>2</sup> ) | Dimension (mm) |      |    |     | Part No. | Wire Range (mm <sup>2</sup> ) | Dimension (mm) |      |     |     |
|----------|-------------------------------|----------------|------|----|-----|----------|-------------------------------|----------------|------|-----|-----|
|          |                               | d1             | d2   | L  | T   |          |                               | d1             | d2   | L   | T   |
| JOPC-1.5 | 1.5                           | 3.2            | 3.2  | 14 | 0.8 | JOPC-70  | 70                            | 17             | 16.5 | 43  | 1.2 |
| JOPC-2.5 | 2.5                           | 3.5            | 3.5  | 15 |     | JOPC-95  | 95                            | 20             | 18.0 | 50  |     |
| JOPC-4   | 4                             | 4.5            | 4.5  | 18 |     | JOPC-120 | 120                           | 22             | 20.0 | 58  |     |
| JOPC-6   | 6                             | 5.5            | 5.5  | 19 |     | JOPC-150 | 150                           | 25             | 22.0 | 61  |     |
| JOPC-10  | 10                            | 6.5            | 6.5  | 20 |     | JOPC-185 | 185                           | 27             | 25.0 | 66  |     |
| JOPC-16  | 16                            | 8.0            | 8.5  | 23 |     | JOPC-240 | 240                           | 28             | 26.0 | 70  | 1.5 |
| JOPC-25  | 25                            | 10.0           | 10.0 | 28 |     | JOPC-300 | 300                           | 32             | 30.0 | 77  |     |
| JOPC-35  | 35                            | 11.5           | 11.5 | 33 | 1.2 | JOPC-400 | 400                           | 42             | 42.0 | 82  |     |
| JOPC-50  | 50                            | 16.0           | 14.0 | 40 |     | JOPC-500 | 500                           | 46             | 46.0 | 100 |     |

## ■ THERMO TERMINAL CAPS

- Material: PVC sol



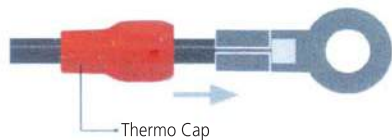
At normal temperature



When heat is generated



At normal Temperature

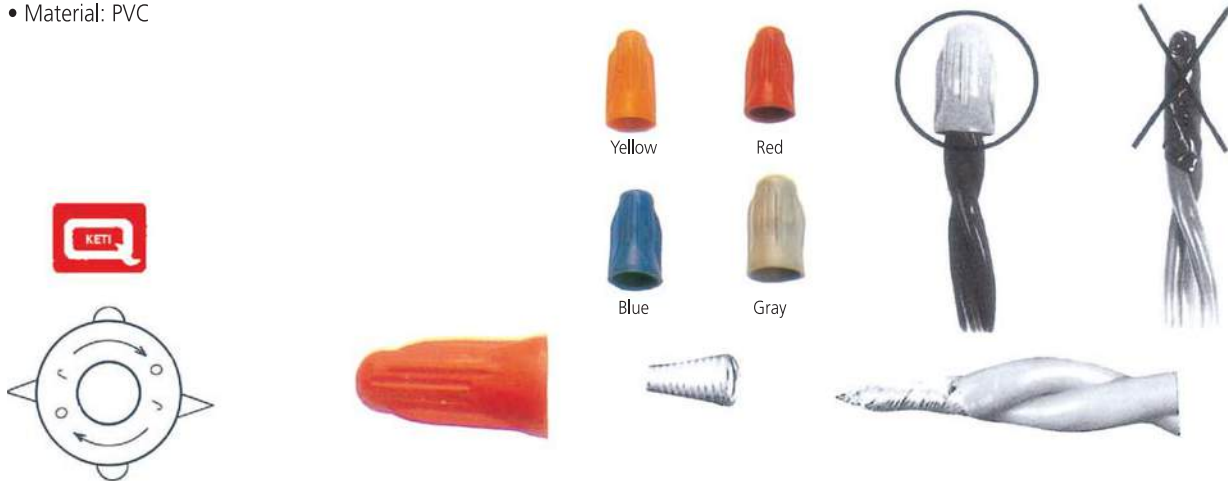


Change of temperature setting of 75°C degrees.

| Part No. | Wire Range (mm <sup>2</sup> ) | Color                                   | Part No. | Wire Range (mm <sup>2</sup> ) | Color                                   |
|----------|-------------------------------|-----------------------------------------|----------|-------------------------------|-----------------------------------------|
| JOTC 1.5 | 1.5                           | Red<br>Blue<br>Black<br>Yellow<br>Green | JOTC 50  | 50                            | Red<br>Blue<br>Black<br>Yellow<br>Green |
| JOTC 2.5 | 2.5                           |                                         | JOTC 70  | 70                            |                                         |
| JOTC 4   | 4                             |                                         | JOTC 95  | 95                            |                                         |
| JOTC 6   | 6                             |                                         | JOTC 150 | 120, 150                      |                                         |
| JOTC 10  | 10                            |                                         | JOTC 185 | 185                           |                                         |
| JOTC 16  | 16                            |                                         | JOTC 240 | 240                           |                                         |
| JOTC 25  | 25                            |                                         | JOTC 300 | 300                           |                                         |
| JOTC 35  | 35                            |                                         |          |                               |                                         |

## ■ PVC SCREW-ON WIRE CONNECTORS

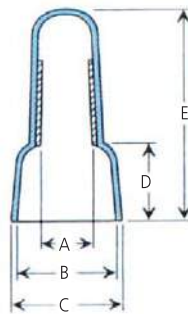
- Material: PVC



| Part Number | Color  | Wire Range(mm <sup>2</sup> ) | Temperature | Volt | Q' ty/Bag.ctn |
|-------------|--------|------------------------------|-------------|------|---------------|
| JOWC 20     | Yellow | 0.75~2.5                     | 105°C       | 300V | 100 / 4,000   |
| JOWC 35     | Red    | 2.5~4                        | 105°C       | 600V | 100 / 4,000   |
| JOWC 55     | Blue   | 6                            | 105°C       | 600V | 100 / 4,000   |
| JOWC 80     | Gray   | 10                           | 105°C       | 600V | 100 / 4,000   |

## ■ WIRE JOINT-NYLON 6.6 INSULATED

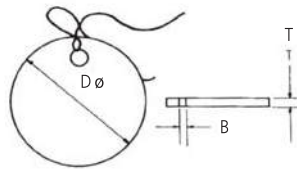
- Metal : Cu
- Surface : Tin Plated
- Color : Natural
- Flame Retardant to UL 94V-2
- Temperature : 105°C, 300Volt Max



| Part Number | Wire Range                                           |                 | Dimension (mm) |      |      |      |      | Package Qty. |
|-------------|------------------------------------------------------|-----------------|----------------|------|------|------|------|--------------|
|             | AMG                                                  | mm <sup>2</sup> | A              | B    | C    | D    | E    |              |
| CE-1        | #22-#18<br>Max. 2 #20 w/1 #18<br>Min. 2 #22.         | 1.5             | 2.6            | 6.2  | 7.8  | 6.20 | 18.0 | 1000         |
| CE-2        | #22-#14<br>Max. 1 #18 w/1 #14<br>Min. 2 #22.         | 2.5             | 3.0            | 7.9  | 9.5  | 7.2  | 19.7 |              |
| CE-5        | #22-#10<br>Max. 3 #14<br>Min. 2 #22 w/2 #18          | 4, 6            | 4.0            | 10.5 | 12.5 | 9.6  | 25.5 |              |
| CE-8        | #16-#10<br>Max. 2 #16 w/1 #10<br>Min. 2 #16 w/1 #12. | 6, 10           | 5.3            | 12.4 | 14.6 | 12.0 | 27.7 | 500          |

## ■ CABLE TAGS

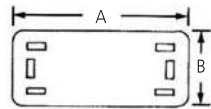
- Material : Fiber
- Color : White



| Part Number | Dimension (mm) |     |     |
|-------------|----------------|-----|-----|
|             | D              | B   | T   |
| JTG-20      | 20             | 3.2 | 1.0 |
| JTG-25      | 25             |     |     |
| JTG-30      | 30             |     |     |
| JTG-40      | 40             |     |     |

## ■ MARKER PLATES-PVC

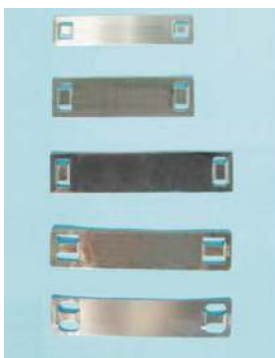
- Color : Ivory



| Part Number | Maximum Tie Width Accom. | Mounting Method | Dimension (mm) |    | Thickness (mm) | Package Qty. |
|-------------|--------------------------|-----------------|----------------|----|----------------|--------------|
|             |                          |                 | A              | B  |                |              |
| JTC-1       | 4.8                      | Cable Ties      | 45             | 19 | 0.3            | 500          |
| JTC-2       |                          |                 | 60             | 40 |                |              |

## ■ STAINLESS STEEL MARKER PLATE

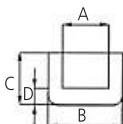
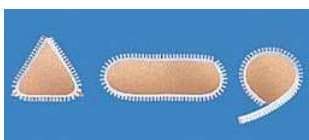
- Metal: AISI 304 or 316 Grade Stainless Steel



| Part Number   | Max.Tie Width Accom. | Width (mm) | Length (mm) | Thickness (mm) | Package Qty. |
|---------------|----------------------|------------|-------------|----------------|--------------|
| JSSM 1570-304 | 4.6                  | 15         | 70          | 0.25           | 100          |
| JSSM 1570-316 |                      |            |             |                |              |
| JSSM 2070-304 |                      | 20         | 70          |                |              |
| JSSM 2070-316 |                      |            |             |                |              |
| JSSM 1991-304 | 7.9                  | 19         | 90          |                |              |
| JSSM 1991-316 |                      |            |             |                |              |
| JSSM 1992-304 |                      |            |             |                |              |
| JSSM 1992-316 |                      |            |             |                |              |
| JSSM 1993-304 |                      |            |             |                |              |
| JSSM 1993-316 |                      |            |             |                |              |

## ■ COVER BUSHING

- Material: Nylon 6,6
- Color: Natural or Black
- Cut to fit any Hole Sizes for Protecting Cords, Wires, Cables Against Damage from Sharp Panel Edges.



| Part Number | Dimension (mm) |     |     |     |     |
|-------------|----------------|-----|-----|-----|-----|
|             | A              | B   | C   | D   | L   |
| JOB 012     | 1.3            | 3.5 | 4.0 | 1.2 | 250 |
| JOB 016     | 1.7            | 3.7 | 4.0 | 1.2 | 250 |
| JOB 024     | 2.4            | 4.4 | 4.0 | 1.2 | 250 |
| JOB 032     | 3.3            | 5.3 | 4.0 | 1.2 | 250 |

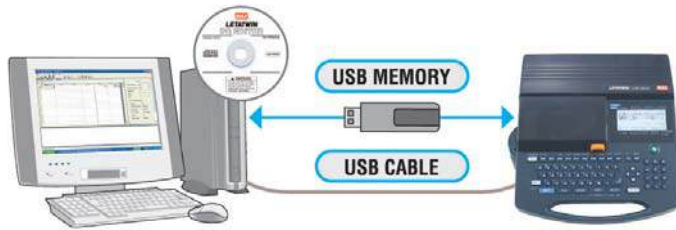
## ■ ELECTRONIC TUBE NUMBERING MAVHIBE (튜브넘버링기)

### ▶ LM-390KP/PC

Thermat Transfer Ribbon: 전자식 튜브넘버링기전용

Easy access from your PC with USB

제공하는 "LETATWIN PC EDITOR" CD ROM을 컴퓨터에 장착하여 USB를 사용하여 튜브넘버링기에 연결하여 사용.



| ITEMS                                 | CONTENTS                                                                      |
|---------------------------------------|-------------------------------------------------------------------------------|
| Name                                  | MAX ELECTRONIC LETTERING MACHINE LM-390KP/PC                                  |
| Dimensions                            | 275(W) x300(D) x91(H)mm                                                       |
| Weight                                | 2.3kg                                                                         |
| Printing method                       | Thermal transfer method (300dpi)                                              |
| Display                               | LCD dot matrix : 6-4x160 PixeKBacklit)                                        |
| Printing speed                        | 35mm/s (Standard> 20mm/s (Low temperature mode)                               |
| Maximum Printing length               | Tube : 20m, Tape : 5m                                                         |
| Maximum number of characters to input | 5,000 characters per file                                                     |
| Character size                        | 2, 3, 4, 6mm height                                                           |
| Usable tube                           | ø 2.5mm~6.5mm (PVC tube, Shrinkable tube)                                     |
| Usable tape                           | Width 5, 9, 12mm (Max genuine tape)                                           |
| Tube cutting method                   | Auto half cut, manual full cut                                                |
| Internal memory                       | 100,000 characters (Maximum 50 files)                                         |
| External memory                       | USB memory                                                                    |
| Interface                             | USB 2.0 full speed                                                            |
| Power supply                          | DC 12V, 3.3A Use only specified AC Adapter(100V~240V) included in the package |
| Power consumption                     | Max 16W                                                                       |
| Operating environment                 | 100°C to 35°C                                                                 |

### ▶ CONSUMABLES

INK RIBBON CASE LM-RC310 10PCS/BOX

#### ECONOMICAL INK RIBBON

LM-IR300B (BLACK) 50m/ROLL 5ROLLS/BOX  
LM-IR300W (WHITE) 32m/ROLL 5ROLLS/BOX

#### UL STANDARD COMPLIANT TUBE

LM-TU332N2 WHITE ø 3.2mmx100m/ROLL 1ROLL/BOX  
LM-TU336N2 WHITE ø 3.6mmx100m/ROLL 1ROLL/BOX  
LM-TU342N2 WHITE ø 4.2mmx80m/ROLL 1ROLL/BOX  
LM-TU352N2 WHITE ø 5.2mmx80m/ROLL 1ROLL/BOX

#### BANDO TUBE

0.75 SQmm WHITE 300m 1ROLL  
1.25 SQmm WHITE 300m 1ROLL  
1.5 SQmm WHITE 300m 1ROLL  
2.0 SQmm ~ 3.5 SQmm WHITE 200m 1ROLL  
4.0 SQmm WHITE 150m 1ROLL  
5.5 SQmm ~ 10 SQmm WHITE 100m 1ROLL

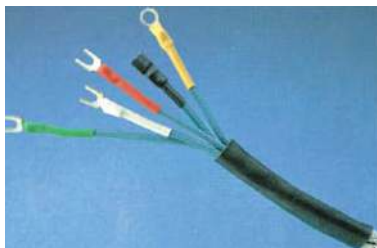
#### TAPE CASSETTE

LM-TP305Y (YELLOW) 5mm(W)x8mm(L)/PC 10PCS/BOX  
LM-TP305W(WHITE) 5mm(W)x8mm(L)/PC 10PCS/BOX  
LM-TP305T (TRANSPAREN) 5mm(W)x8mm(L)/PC 10PCS/BOX  
LM-TP309Y (YELLOW) 9mm(W)x8mm(L)/PC 10PCS/BOX  
LM-TP309W (WHITE) 9mm(W)x8mm(L)/PC 10PCS/BOX  
LM-TP309T (TRANSPAREN) 9mm(W)x8mm(L)/PC 10PCS/BOX  
LM-TP312Y (YELLOW) 12mm(W)x8mm(L)/PC 10PCS/BOX  
LM-TP312W (WHITE) 12mm(W)x8mm(L)/PC 10PCS/BOX



## ■ HEAT SHRINKABLE TUBING

- Material: Polyolefin
- Continuous Operating Temp : -55°C~125°C

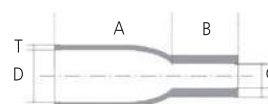
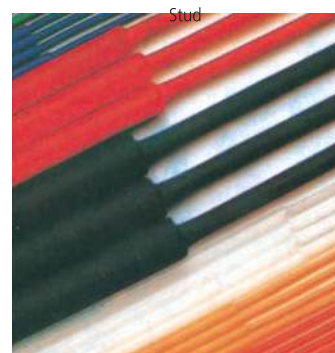


JHS225

Shrink Ratio  
2 indicated 30% (3:2)

Temperature Grade  
25 indicated 125°C

XX: color code  
BK: Black  
BL: Blue  
WH: White  
RD: Red  
CL: Clear  
GN: Green  
YL: Yellow  
GR: Gray  
OR: Orange  
GY: Green-Yellow



| Part Number   | SIZE (mm) | A. Expanded as Supplied (mm) |      | B. Fully recovered after heating (mm) |      | Roll |
|---------------|-----------|------------------------------|------|---------------------------------------|------|------|
|               |           | D                            | T    | d                                     | t    |      |
| JHS225-XX-1.2 | 1.2       | 1.4                          | 0.2  | 0.5                                   | 0.36 | 200  |
| JHS225-XX-1.5 | 1.5       | 2.0                          | 0.2  | 0.75                                  | 0.44 | 200  |
| JHS225-XX-2   | 2.0       | 2.5                          | 0.2  | 1.0                                   | 0.44 | 100  |
| JHS225-XX-2.5 | 2.5       | 3.0                          | 0.25 | 1.25                                  | 0.44 | 100  |
| JHS225-XX-3   | 3.0       | 3.4                          | 0.25 | 1.5                                   | 0.44 | 100  |
| JHS225-XX-3.5 | 3.5       | 3.9                          | 0.25 | 1.75                                  | 0.44 | 100  |
| JHS225-XX-4   | 4.0       | 4.3                          | 0.25 | 2.0                                   | 0.44 | 100  |
| JHS225-XX-4.5 | 4.5       | 5.0                          | 0.25 | 2.25                                  | 0.56 | 100  |
| JHS225-XX-5   | 5.0       | 5.6                          | 0.25 | 2.5                                   | 0.56 | 100  |
| JHS225-XX-6   | 6.0       | 6.5                          | 0.25 | 3.0                                   | 0.56 | 100  |
| JHS225-XX-7   | 7.0       | 7.7                          | 0.25 | 3.5                                   | 0.56 | 100  |
| JHS225-XX-8   | 8.0       | 8.6                          | 0.25 | 4.0                                   | 0.56 | 100  |
| JHS225-XX-9   | 9.0       | 9.8                          | 0.25 | 4.5                                   | 0.56 | 100  |
| JHS225-XX-10  | 10.0      | 10.4                         | 0.25 | 5.0                                   | 0.56 | 100  |
| JHS225-XX-11  | 11.0      | 11.4                         | 0.25 | 5.5                                   | 0.56 | 100  |
| JHS225-XX-12  | 12.0      | 12.5                         | 0.25 | 6.0                                   | 0.56 | 100  |
| JHS225-XX-13  | 13.0      | 13.7                         | 0.30 | 6.5                                   | 0.69 | 100  |
| JHS225-XX-14  | 14.0      | 14.4                         | 0.30 | 7.0                                   | 0.69 | 100  |
| JHS225-XX-15  | 15.0      | 15.6                         | 0.30 | 7.5                                   | 0.69 | 100  |
| JHS225-XX-16  | 16.0      | 16.7                         | 0.30 | 8.0                                   | 0.69 | 100  |
| JHS225-XX-18  | 18.0      | 19.3                         | 0.35 | 9.0                                   | 0.77 | 50   |
| JHS225-XX-20  | 20.0      | 21.7                         | 0.40 | 10.0                                  | 0.77 | 50   |
| JHS225-XX-22  | 22.0      | 23.4                         | 0.40 | 11.0                                  | 0.77 | 50   |
| JHS225-XX-25  | 25.0      | 25.5                         | 0.45 | 12.5                                  | 0.87 | 50   |
| JHS225-XX-28  | 28.0      | 29.0                         | 0.45 | 14.0                                  | 0.87 | 50   |
| JHS225-XX-30  | 30.0      | 31.0                         | 0.45 | 15.0                                  | 0.87 | 50   |
| JHS225-XX-38  | 38.0      | 39.0                         | 0.45 | 19.0                                  | 0.97 | 50   |
| JHS225-XX-50  | 50.0      | 51.0                         | 0.45 | 25.0                                  | 0.97 | 50   |
| JHS225-XX-60  | 60.0      | 63.5                         | 0.55 | 31.75                                 | 1.1  | 25   |
| JHS225-XX-75  | 75.0      | 76.2                         | 0.6  | 38.1                                  | 1.17 | 25   |
| JHS225-XX-100 | 100.0     | 101.6                        | 0.7  | 50.8                                  | 1.17 | 25   |

## ■ HEAT SHRINKABLE TUBE - MWTM TYPE (수축관)



| 호칭          | 직경(ø) |     | 두께(t) |     | 비고            |
|-------------|-------|-----|-------|-----|---------------|
|             | 수축전   | 수축후 | 수축전   | 수축후 |               |
| MWTM 10/3   | 10    | 3   | 0.4   | 1.0 | ※표준길이 : 1200m |
| MWTM 16/5   | 16    | 5   | 0.5   | 1.5 |               |
| MWTM 25/8   | 25    | 8   | 0.7   | 2.0 |               |
| MWTM 35/12  | 35    | 12  | 0.7   | 2.0 |               |
| MWTM 50/16  | 50    | 16  | 0.7   | 2.0 |               |
| MWTM 63/19  | 63    | 19  | 0.8   | 2.5 |               |
| MWTM 75/22  | 75    | 22  | 0.9   | 3.0 |               |
| MWTM 85/25  | 85    | 25  | 0.9   | 3.0 |               |
| MWTM 95/29  | 95    | 29  | 1.0   | 3.3 |               |
| MWTM 115/34 | 115   | 34  | 1.0   | 3.3 |               |
| MWTM 140/42 | 140   | 42  | 1.0   | 3.5 |               |
| MWTM 160/50 | 160   | 50  | 1.0   | 3.5 |               |
| MWTM 180/60 | 180   | 60  | 1.0   | 3.5 |               |

## ■ HEAT SHRINKABLE TUBE - CRSM TYPE (자켓 보수용 튜브)



| 호칭          | 직경(ø) |     | 두께(t) |      | 비고            |
|-------------|-------|-----|-------|------|---------------|
|             | 수축전   | 수축후 | 수축전   | 수축후  |               |
| CRSM 34/10  | 34    | 10  | 0.3   | 2.4  | ※표준길이 : 1000m |
| CRSM 53/13  | 53    | 13  | 0.4   | 2.3  |               |
| CRSM 84/20  | 84    | 20  | 0.4   | 2.3  |               |
| CRSM 107/29 | 107   | 29  | 0.4   | 2.3  |               |
| CRSM 143/36 | 143   | 36  | 0.4   | 1.63 |               |
| CRSM 198/55 | 198   | 55  | 0.45  | 2.5  |               |
| CRSM 250/98 | 250   | 98  | 0.4   | 1.7  |               |



**(주)고려전기**

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