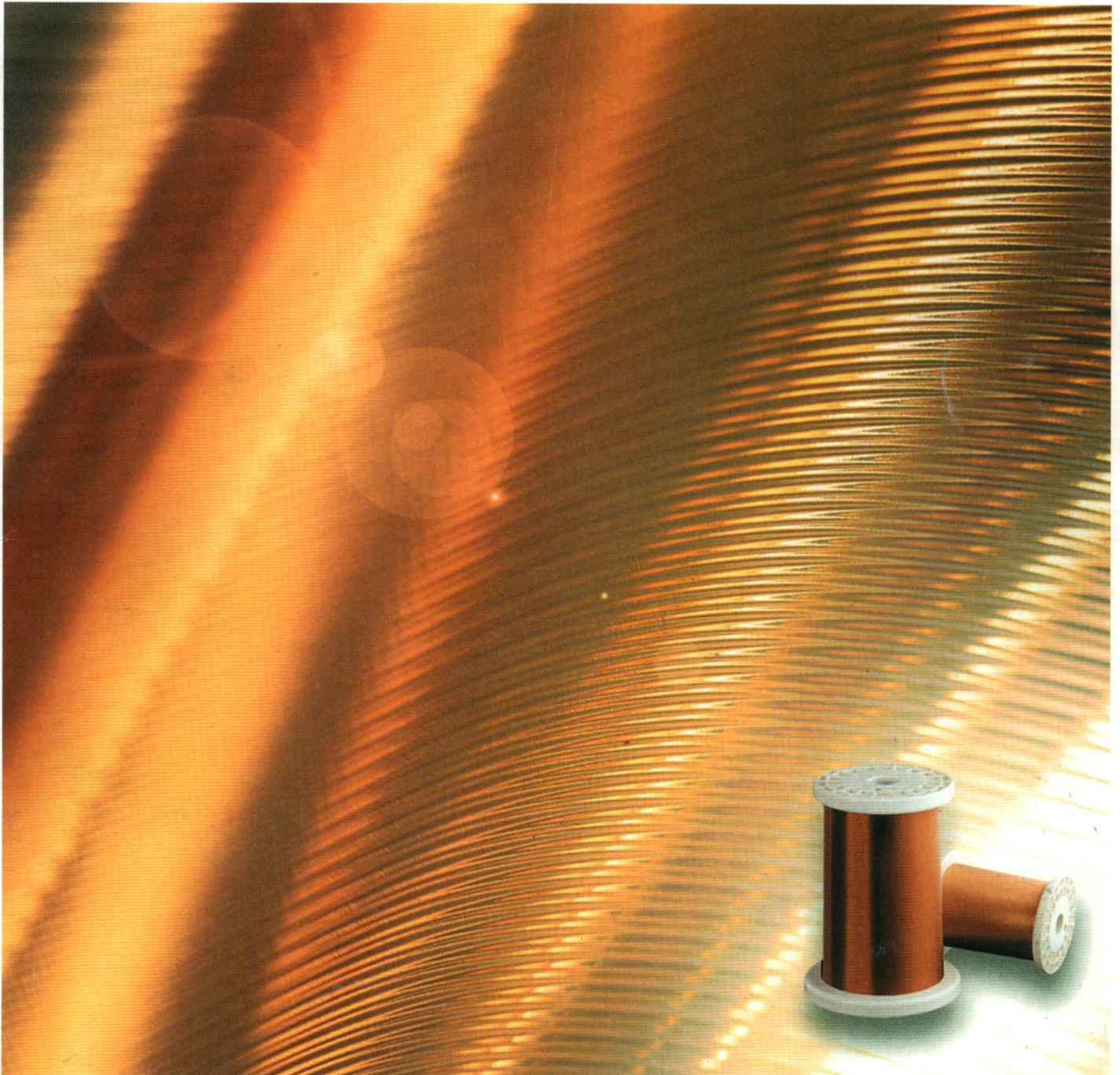


TOTOKU

漆包銅線 MAGNET WIRES

一般漆包銅線
General Magnet Wires
自粘漆包線
Self-Bonding Magnet Wires
特殊漆包銅線
Special Magnet Wires

於1999年12月取得環境管理國際標準ISO14001之認證
Approved under the international standards for environment management. ISO 14001, in December 1999

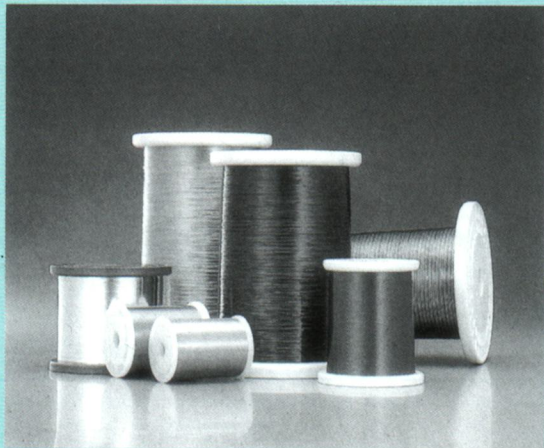


藉著先進科技製造可靠性高的漆包銅線

Magnet Wire with High Reliability Backed by Advanced Technology

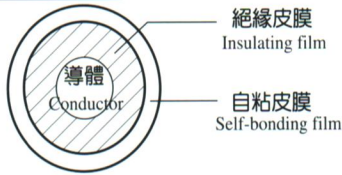
以製造自粘性漆包銅線的經驗為基礎，東京特殊電線株式會社繼續致力開發漆包銅線及耐焊接腐蝕漆包銅線等新產品。隨著網絡社會不斷進步和發展，電子產品在品質上須符合細小、輕巧、高性能、高可靠性、保護環境等要求。為了要迎合滿足客戶要求的趨勢，東京特殊電線株式會社決心繼續向客戶提供專業的產品開發、優異的生產技術及嚴格的品質控制生產具有國際視野的產品。

Since we started the manufacture of the self-bonding magnet wire, we, TOTOKU, have continued to develop new products such as the magnetic-plated wire (FPW) and solder-erosion-free magnet wire (NEROS). With the advent of the electronically interwoven society, such qualities as downsizing, light weight, high performance, high reliability and antipollution are required of the products for electronic applications. To meet the needs of the current trend by fulfilling the requirements of customers, we are determined to continue to provide our customers with the products manufactured through our assiduous development work, excellent manufacturing technology and thorough quality control all based on a global standpoint.



自粘漆包線 Self - Bonding Magnet Wires

構造 Structure



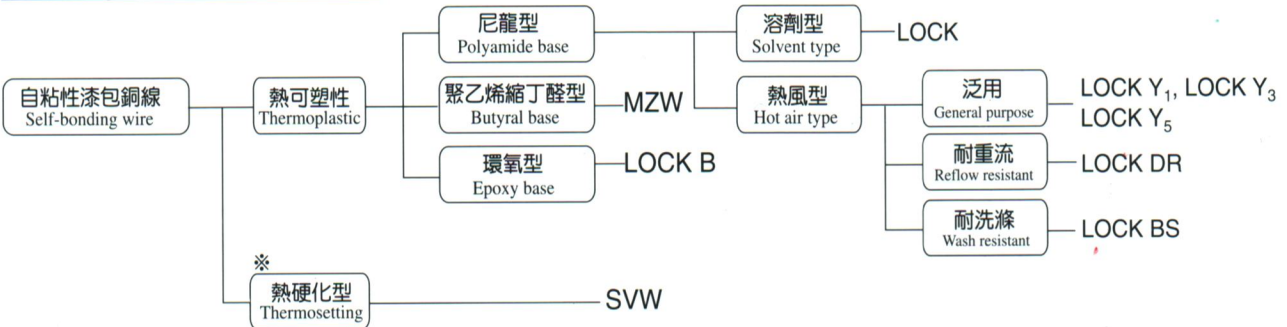
自粘性漆包銅線即是在聚胺酯或聚酯等單層之絕緣漆包銅線之上加上熱可塑性樹脂或熱硬化型樹脂之自粘皮膜，燒付而成二層構造之漆包銅線。

本公司可依各種絕緣皮膜及自粘皮膜搭配組成多種自粘性漆包銅線。

The self-bonding magnet wire is a double layered copper conductor covered with a layer of self-bonding film such as thermoplastic resin, thermosetting resin or other materials over a layer of insulating film such as polyurethane, polyester or similar material.

We manufacture a wide variety of self-bonding wires by expertly combining the bonding layer with the insulating film to meet customers' diverse needs, types of work and application.

分類 Classification of bonding layers

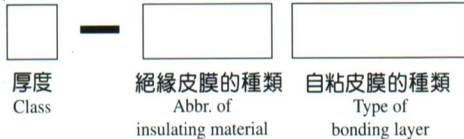


※熱硬化型在捲成線圈後加熱處理，使得熱硬化性皮膜變成三度空間的熱穩定性結構。
After winding, the coil is heated to change its thermosetting film into a thermally stable three-dimensional structure.

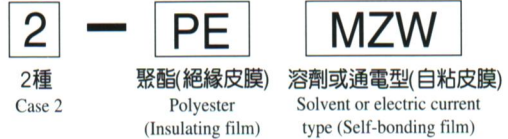
有關自粘性漆包銅線之中，不同的絕緣皮膜和不同的自粘皮膜搭配時的名稱表示方式 Wire distinction based on its insulating film.

依據不同的絕緣皮膜種類，自粘性漆包銅線的表示方法：絕緣皮膜的品名 + 自粘皮膜的品名如果絕緣皮膜是聚胺酯樹脂則可省略不標示。
Self-bonding wires are expressed by a series of codes as follows according to the kind of insulating film used: "Abbreviation of insulating material" + "Type of self-bonding layer."
No indication is made for polyurethane insulating film in general.

(格式) Indication method



(例子) e.g.



扁形漆包線 (-R) (-RB)

本漆包銅線擁有扁平的導體，特別適合應用在各種小型化及高性能的設計上。

Ribbon Wire is a magnet wire with a flat conductor. TOTOKU makes ribbon wires of various kinds for miniturization and high performance.

● 特 長 Features

- 在空間因素上比圓形漆包銅線優勝
- 配合漆包鋁線及漆包銅複合鋁線使用可進一步降低線圈重量
- Better than round wires in terms of space factor. ● Aluminium and copper clad aluminium wires further reduce coil weight.

銅包鋁漆包圓線、高抗張力銅包鋁漆包圓線、超高抗力銅包鋁漆包圓線 (CCA, HCCA, UCCA)

漆包銅複合鋁線擁有以銅覆蓋鋁或鋁合金而製成的複合導體，它既有鋁在重量上的輕巧，亦有銅的直焊性及耐腐蝕性。

The enameled copper-clad aluminium wire has a composite conduction made of aluminium or aluminium alloy clad with copper. It possesses lightness in weight as aluminium as well as solderability and corrosion resistance of copper.

● 特 長 Features

- 有助減低線圈重量
- 銅的複合比例可選擇在 10%、15% 或其他數值
- 銅複合層使線體直焊性與銅相同
- Helps reduce the weight of coils made. ● The ratio of copper cladding can be selected among 10, 15% or the like. ● The copper cladding gives the wire the same degree of solderability as that of copper.

鋁漆包圓線 (ALW)

漆包鋁線重量只約及銅的 30%，可以令所製造的線圈重量減低。導電率比銅超出 61% 或以上，在相同的導體電阻之下，重量只約及銅的一半。

About 30% of copper specific weight, ALW makes it possible to reduce the weight of coils made. With conductivity of more than 61% of copper, it weights half of copper at the same conductor resistance.

● 特 長 Features

- 重量只及銅的三分之一或以下，有助減低線圈重量
- 擁有與漆包銅線同樣的絕緣皮膜及自粘皮膜特性
- With a specific weight of less than one-third of that of copper, ALW helps reduce the weight of coils.
- The properties of its insulating and bonding films are the same as those of the films for copper wires.

高抗張力漆包圓線 (HTW)

利用以銅為主要成份的合金製造導體，使高抗張力漆包銅線 (HTW) 擁有高抗拉強度，同時又保留了銅的特性。

With a conductor made of a copper-based alloy, the High-tension Magnet Wire (HTW) has a high tensile strength, while retaining the properties of copper.

● 特 長 Features

- 抗拉強度 - 比漆包銅線超出大約 25% (可達到較高捲線速度，防止線體在線圈末端折斷)
- 導電率 - 93% 或以上
- 擁有與漆包銅線同樣的絕緣皮膜及自粘皮膜特性
- 直焊性與漆包銅線相同
- Tensile strength-Approx. 25% higher than copper wire (Higher speed coil winding and prevention of wire snapping at coil terminal are attained.)
- Conductivity- 93% or more.
- Identical to copper magnet wires in terms of properties of insulating and bonding films.
- Same as copper magnet wires in solderability.

Litz 線 (n/d) (多股絞線)

Litz 線亦稱為標準線，常應用於高頻線圈之中。

素線所使用的聚胺酯樹脂可對照耐熱等級選用。

Litz wire is also called "standard wire" and is used for high-frequency coils. A variety of enameled conductors are used to meet very diverse temperature indices

● 特 長 Features

- 與單線比較，可抑制在高頻區域內電阻上升，因此可減少線圈溫度上升 ● 可撓性佳 ● 為了使末端的加工處理容易，建議在元件中使用可焊漆包銅線作為素線
- Resistance rise in the high-frequency area can be restricted compared to single conductor wire, thus reducing the temperature rise of the coil. ● Highly flexible.
- To facilitate easy terminal preparation, solderable enameled copper wires are recommended for component wires.

防焊縮漆包圓線 (NEROS)

此漆包銅線為特精細而且可以抵抗焊接時所引起的腐蝕。NEROS 層可以保護銅導體，避免在焊接時出現熔化，從而提高焊接工作的可靠性及品質。

Extra-fine magnet wire developed for resistance to corrosion caused by solder. The NEROS layer protects the copper conductor from melting into the solder, contributing to improved reliability and quality of soldering work.

● 特 長 Features

- 可減少銅線因熔化而變薄，更有效發揮特幼細漆包銅線的效果 ● 濕潤性與漆包銅線相同 ● 抗拉強度比漆包銅線超出 5-10% ● 導電率在 98% 或以上 (IACS) ● 擁有與漆包銅線同樣的絕緣皮膜及自粘皮膜特性
- Thinning of wire caused by copper melting into molten solder is minimized. More effective for extra-fine wires. ● Excellent wettability similar to copper wires.
- Tensile strength is 5 to 10% higher than copper wires. ● Conductivity 96% or more (IACS) ● Identical to copper wires in properties of insulating and bonding films.

自粘多股絞線 (LOCK-LZ)

自粘性 Litz 線的表面被自粘層所覆蓋，常應用於高頻彩電偏轉線圈之中。

Self-bonding Litz wire coated with a bonding layer and used for high-frequency deflection yokes.

● 特 長 Features

- 外層是熱塑性樹脂
- 可用通電或熱風方式輕易地將線圈成型
- 特別適用於高頻的偏向軛
- A self-bonding Litz wire with thermoplastic resin enameled over it. ● The coil can be easily formed by electric current or hot air. ● It is particularly suitable for high-frequency deflection yokes, fully exhibiting its features.