



DAIKOWT 1025

GTAW

COBALT ALLOYS
Gr. 25

DESCRIPTION

Cobalt-Based Rod

This solid rod is made from a cobalt-based alloy, with the addition of chrome, tungsten, and nickel to achieve excellent resistance to high temperatures, oxidation, and sulfiding. It can be used in oxidizing high-temperature environments, with operating temperatures up to 1093 °C. The rod also has good resistance to wear and abrasion. This combination of features makes this rod ideal for aerospace and aeronautical applications, as well as for land-based gas turbines.

SPECIFICATIONS

| | | | |
|----------------|------------------------|-----------|-----|
| EN ISO 14700 | S Z Co (L 605) | Shielding | 11 |
| Positions | PA, PB, PC, PD, PE, PF | Current | DC- |
| Packaging Type | 5kg carton tube | | |

HARDNESS

36HRC - 40HRC

| CHEM. COMP. % | DEFAULT |
|---------------|---------|
| C | 0.2 |
| Mn | 0.8 |
| Ni | 11 |
| Cr | 21 |
| Fe | 2.3 |
| W | 15.5 |

WELDING PARAMETERS

| | 2.4 mm | 5.0 mm |
|----------------|-----------------|-----------------|
| Ampere | 60A - 90A | 150A - 200A |
| Voltage | - | - |
| Packaging | Ø 2,4÷5,0 mm | Ø 2,4÷5,0 mm |
| Packaging Type | 5kg carton tube | 5kg carton tube |

ANTI-WEAR CHARACTERISTICS

| | |
|---------------|-----------|
| Adhesive wear | ▲ ▲ ▲ ▲ ▲ |
| Abrasive wear | ▲ ▲ ▲ ▲ ▲ |
| Impact | ▲ ▲ ▲ ▲ ▲ |
| Corrosion | ▲ ▲ ▲ ▲ ▲ |
| Heat | ▲ ▲ ▲ ▲ ▲ |



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APPLICATION

This filler metal is a variant of the rolled L605 alloy, renowned for its excellent resistance to thermal fatigue. It is ideal for the restoration and rebuilding of tools used in hot steel processing, such as shears and punches used in the steel industry. The non-magnetic welding metal offers first-rate mechanical strength and maintains good oxidation resistance up to 980 °C. It demonstrates excellent resistance to sulfidation and adequate wear and elongation resistance in metal-to-metal bonds. It also stands out for its resistance to "metal-to-metal" corrosion, abrasion, cavitation, and high-impact at elevated temperatures. It effectively resists oxidation and reducing atmospheres up to 1150 °C. Due to its notable impact resistance, it is widely used for filling molds and dies for hot forming. Its applications extend to the petrochemical sector, high-pressure steam control valves, a wide range of valves, cutting blades, as well as for refilling turbine blades, extrusion molds, dies and forging tools, furnace components, and tools for hot steel processing.

ALLOY TYPE

Cobalt-based alloy with additions of chromium, tungsten and nickel for excellent high temperature strength and oxidation resistance

MICROSTRUCTURE

Chromium and tungsten carbides in an austenitic type matrix.

MATERIALS

It is used for rebuilding and/or hardfacing of tools that work hot steel, such as scissors, punches, etc. for the steel industry.

WELDING & PWHT

Before welding, it is essential to thoroughly clean the joint surface and adjacent area. Remove all traces of grease, oil, marker marks, sulfur compounds, and other contaminants. It is important to avoid contact with copper or copper-containing materials in the joint area. Preferably, the alloy should be in the solution annealed condition during welding, although this is not strictly necessary. Preheating is usually not required as long as the base metal exceeds 0 °C. Interpass temperatures must remain low. If necessary, auxiliary cooling methods may be employed between passes, provided they do not introduce contaminants. Generally, no post-weld heat treatment is required.

