



## Techniwear HT24-28M

### **Description:**

Techniwear HT24-28M wire is a high heat resistant wire with excellent metal-to-metal wear characteristics. Techniwear HT24-28M deposits a low carbon austenitic cobalt type alloy with excellent work hardenability, high temperature, strength, and impact resistance. These deposits are quite stable during thermal cycling, making them a favorite for hot die materials. Resistance to galling (self-mated), corrosion and cavitation erosion make Techniwear HT24-28M a good choice for valve trim on steam and fluid control valve bodies and seats. It bonds well to all weldable steels, including stainless.

### **Applications:**

Augers, chemical and petrochemical valves, conveyer screws, exhaust seats, extrusion dies for aluminum, forging dies, forging dies, furnace parts, gas turbine buckets, hot metal handling, hot punches, hot shears, hot trim dies, hydro-turbine cavitation repair, ladles, piercing plugs, rolling dies, steam valves, steel mill guides, valve seats, valve stems, etc.

### **Chemistry:**

|                     |        |          |      |            |        |           |
|---------------------|--------|----------|------|------------|--------|-----------|
| Propriety blend of; | Cobalt | Chromium | Iron | Molybdenum | Nickel | Other     |
|                     | 50-70% | 23-40%   | 2-7% | 2-7%       | 1-5%   | Remainder |

### **Typical Deposit Characteristics**

|                               |  |
|-------------------------------|--|
| Hardness as welded            | 30-37 Rc   |
| Work hardened                 | 43- 48   |
| Elevated temperature hardness | ~30 Rc @ 1100 °F<br>~28 Rc @ 1500 °F<br>~26 Rc @ 1700 °F |
| Impact Resistance             | Excellent  |
| Corrosion resistance          | Good   |
| Hot hardness                  | Excellent  |
| Magnetism                     | Non-magnetic   |
| Surface cross check           | No   |

### **Welding Parameters**

|                    |                   |                   |
|--------------------|-------------------|-------------------|
| Diameter, In. (mm) | <b>.045 (1.2)</b> | <b>1/16 (1.6)</b> |
| Current, Amp. DCEP | 180 - 200         | 280 - 300         |
| Voltage            | 25 - 27           | 26 - 28           |
| Shielding Gas      | Argon             | Argon             |
| Wire Extension     | 1/2" - 5/8"       | 5/8" - 3/4"       |
| Position           | Flat              | Flat              |

Notice: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.



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### Preheating & Postcooling Information

| Base Metal   | Preheat Temp.   |                 | Postheat  |
|--|-----------------|-----------------|---|
|  | °F              | °C              |   |
| Low carbon Steel (up to 40%C)<br>for thin sections only  | Not<br>Required | Not<br>Required | Air Cool  |
| Low Carbon Steel (up to 40%C) for thick sections only<br>High Carbon Steel (over 40%C) for thin sections only<br>Low Alloy Steels (up to 10% alloy) for thin sections only | 200-600         | 93-315          | Slow-Cool   |
| High Carbon Steels (over 40%C) for thick sections only<br>Low Alloy Steel (up to 10% alloy) for thick sections only  | 300-600         | 148-315         | Slow-Cool   |
| Air-Quench Steels  | 1100-<br>1200   | 593-648         | Slow-Cool   |
| High Chromium-Nickel (Austenitic) Stainless Steels (304,<br>309, 316, etc.) thin sections only   | Not<br>Required | Not<br>Required | Air-Cool  |
| High Chromium-Nickel (Austenitic) Stainless Steels (304,<br>309, 316, etc.) thick sections only  | 200-500         | 93-260          | Slow-Cool   |
| High Chromium-Nickel (Martensitic) Stainless Steels (410,<br>416, 420, etc.) thick sections only   | 400-600         | 204-315         | Maintain at 400°-600° for<br>4 hrs.<br>per 1 inch thickness, then<br>reduce heat<br>50° F (10°C) till cool. |
| High Chromium-Nickel (Ferritic) Stainless Steels (430, 442,<br>446, etc.) thick sections only  | 200-600         | 93-315          | Maintain at 200°-600° for<br>4 hrs.<br>per 1 inch thickness, then<br>reduce heat<br>50° F (10°C) till cool. |
| High Temperature Nickel Alloys (400, 600, 601, 718, etc.)  | 200-500         | 93-260          | Stress Relieve  |

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