



COLUMBIA METALS LTD

The First Name in Non-Ferrous & Stainless Stockholding



COLSPEED 90

The Free Machining Aluminium Bronze

“A Free Machining Alternative To Other Nickel Aluminium Bronzes”

- ◆ Very High Strength
- ◆ Excellent Machining Characteristics
- ◆ Very High Wear and Galling Resistance
- ◆ Outstanding bearing properties
- ◆ Excellent General Corrosion Resistance
- ◆ Spark resistance
- ◆ Retention of Properties at Cryogenic Temperatures

Now Available in Round Rod & Hexagons Ex-stock for Immediate Delivery in Sizes from 3/8" to 3"

Traditionally Aluminium Bronzes have been classed as outstanding engineering alloys, but machining has limited the intricacy of the end product. After many years of development Columbia Metals Ltd can now offer a Leaded Aluminium Bronze with an excellent machinability, similar to that of free cutting brass, whilst maintaining all of the performance characteristics of other aluminium bronzes.

This unique alloy has been created using the basic composition of a high strength Nickel Aluminium Bronze with the addition of a fine dispersion of lead particles to dramatically improve the machining characteristics. This fine lead dispersion also provides the self lubricating and anti-friction properties that make COLSPEED 90 the ideal choice for improved performance in wear applications.

Typical Applications include: fasteners, gears, non sparking tools, thrust washers, valve seats, fluid handling equipment, gas regulator components, valve spindles and components, petrochemical pumps & fittings, bearing pins, bushes, thermostatic valves, worm wheels and marine fittings.

COLSPEED 90 is a Trade Mark of Columbia Metals Ltd

Other World Class Alloys From Columbia Include:

NIBRON SPECIAL

TROJAN

COLSIBRO

BECOL-25

COLPHOS 90

COLBRONZE

COLSPEED 90

CHEMICAL COMPOSITION (Nominal)

| | | | |
|--------|-----------|-----------|-------|
| Copper | Remainder | Aluminium | 9.7 % |
| Nickel | 5.0 % | Iron | 3.8 % |
| Lead | 1.75 % | Manganese | 1.3 % |

Additional elements are also controlled.

MECHANICAL PROPERTIES (Specification Minima)

| | 6 to 15 mm Ø | >15 to 25 mm Ø | >25 to 80 mm Ø |
|----------------|-----------------------|-----------------------|-----------------------|
| UTS | 760 N/mm ² | 750 N/mm ² | 700 N/mm ² |
| Proof Strength | 500 N/mm ² | 460 N/mm ² | 400 N/mm ² |
| Elongation | 10 % | 10 % | 13 % |
| Hardness | 220 HB | 200 HB | 200 HB |

TYPICAL PHYSICAL PROPERTIES

| | |
|---------------------------------------|-------------|
| Density (g/cm ³) | 7.6 |
| Melting Range (°C) | 1060 - 1075 |
| Coeff of Thermal Expansion (20-300°C) | 0.000017 |
| Thermal Conductivity (20°C) W/m°K | 42 |
| Electrical Conductivity (20°C) % IACS | 7 |
| Young's Modulus (GPa) | 125 |

FABRICATION PROPERTIES

| | |
|--|-----------------|
| Cold Working | Satisfactory |
| Hot Working | Satisfactory |
| Stress Relieving Temperature | 300 - 400 °C |
| Hot Stamping Temperature | 850 - 975 °C |
| Machinability (free cutting brass=100) | 90 |
| Joining methods: Soldering | Not Recommended |
| Brazing | Not Recommended |

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