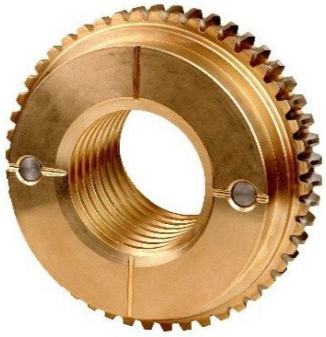
Technical Data Sheet

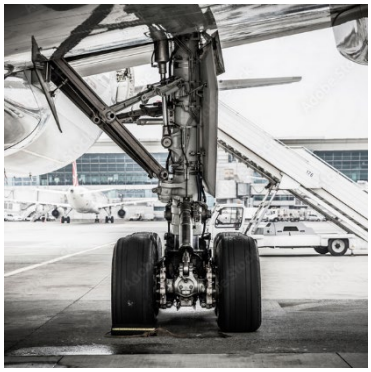
AMS 4880

AMS 4880 is a remarkable nickel aluminum bronze alloy known for its exceptional properties and specifications. Produced through a continuous casting process and heat treatment, this alloy offers outstanding mechanical properties that exceed those of conventional nickel aluminum bronze. This AMS bronze offers high strength, corrosion resistance, and superior wear resistance, making it an ideal choice for applications involving heavy loads, friction, abrasive wear, and corrosion.

Key Features:

- High mechanical properties
- Good sliding properties
- Corrosion resistant
- High elongation & ductility
- Spark resistant
- High yield point
- Resistant to abrasive wear, friction, deformation & chemical erosion
- Compliant with AMS 4880



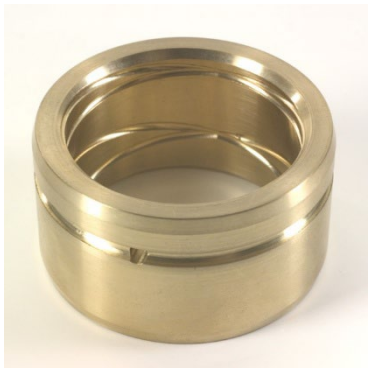


Nominal Composition:

Copper (Cu)	Aluminum (Al)	Nickel (Ni)	Iron (Fe)	Manganese (Mn)	Others
Balance	10.0%	5.0%	2.5%	1.0%	max. 0.5%

Applications:

- Aircraft bearings & bushings
- Pump & marine shafts
- Valve guides, spindles & seats
- Machine tool parts & wear rings
- Non-sparking safety tools & components in explosive atmospheres
- Suitable for heavy-duty, high stress, high friction & corrosive environments
- Applications in aerospace, oil & gas, marine & manufacturing industry



AMS 4880, a versatile nickel aluminum bronze alloy, finds its niche in a wide range of critical applications. This alloy excels in environments where abrasive wear, friction, deformation, and chemical erosion are prevalent. Originally developed for aerospace specifications, the alloy has rapidly expanded its footprint and is in demand in industries requiring enhanced mechanical properties and corrosion resistance.

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Mechanical Properties (Nominal values)	Continuous Casted
Tensile Strength R_m (MPa)	724
Yield Strength $R_{p\ 0.5}$ (MPa)	431
Elongation A_5 (%)	9
Brinell Hardness (10/3000)	223
Compressive Strength R_{mc} (MPa)	1069
Compressive Yield Strength $R_{pc0.1}$ (MPa)	421
Shear Strength R_{cm} (MPa)	414
Modulus of Elasticity E (GPa)	108
Charpy a_k (J)	9
Fatigue (100 million cycles) σ_N (MPa)	238

Physical Properties:

Density ρ (g/cm³)	Coefficient of Expansion α (10^{-6}/K)	Thermal Conductivity λ (W/m·K)	Electrical Conductivity (% I.A.C.S.)	Specific Heat c_p (J/g·K)
7.53	16.2	46	9	0.45

Machining Parameters:

Operation	Cutting Speed v_c (m/min)	Feed f (mm/rev)	Depth a (mm)	Tool Specification
Milling – Roughing	110 - 160	0.1 - 0.4	up to 4	K10 - K20
Milling – Finishing	90 - 115	0.05 - 0.1	0.1 - 0.5	K10 - K20
Turning – Roughing	150 - 200	0.1 - 0.2	up to 2	K10 - K20
Turning – Finishing	180 - 250	0.05 - 0.1	0.1 - 0.2	K10 - K20

Scan the QR Code to view our machining recommendations:

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