BRASS

Cast brasses are Copper-Zinc alloys that consist of a single-phase α structure at room temperature up to 36% Zinc. This phase exhibits excellent malleability both in cold and hot conditions, making it suitable for cold deformation. In these materials, the addition of Tin improves mechanical properties and enhances resistance to certain forms of corrosion.

ALLOY: VL - 836 = UNS C83600 = SAE 40

Red brass with moderate mechanical resistance, corrosion, wear, fatigue, and impact resistance. It takes cold deformation hardness and is softened by annealing; it also has good antifriction quality, electrical conductivity, and good sealing properties under low hydraulic and steam pressure.

As a bushing and sliding part, it is used under low load, moderate speed, and good lubrication.

Chemical Composition:

%Cu	% Sn	%Pb	%Zn	%Fe	% Ni
84 - 86	4 - 6	4 - 6	4 - 6	0,3 max.	1 max.

Mechanical and Physical Properties:

- **Tensile Strength,** *Kg/mm²*..... 21,1 - 26
- **Yield Strength,** *Kg/mm²*..... 9,8 - 13,4
- **Elongation,** *%*..... 25 - 15
- **Hardness,** *HB (10 mm / 500 Kg)*..... 54 - 67
- **Thermal Conductivity,** *W / m °C (20 °C)*..... 72
- **Coefficient of thermal Expansion,** *10^{-6} / °C (20 - 300 °C)*..... 18
- **Electrical Conductivity,** *% IACS (20 °C)*..... 15
- **Operating Temperature,** *°C*..... -233 - 260
- **Operating Load or Pressure,** *Kg/mm²*..... 2,0 - 3,1 (medium)

Technical manufacturing standards:

- Chemical Composition and Mechanical Properties: UNS C 83600 = SAE 40 = DIN 1705 RG5
- Centrifugal Casting : ASTM B271 / 271M
- Sand Mold Casting : ASTM B584 / SAE J462
- Continuous Casting : ASTM B505 / 505M

Main Uses and Application:

Piston bearings, rotors, impellers, flanges, rings, valve and pump bodies, couplings, and small common-use parts.
● Hydraulic and low-pressure steam accessories ● Oil ducts, household accessories, pipe couplings

✱ ***Referential Specifications for Chemical Composition, Mechanical, and Physical Properties based on the Unified Numbering System (UNS-C) of the Copper Development Association (CDA) for cast and forged copper alloys; subject to written confirmation by VULCANO METALS***

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