Promoting Powder Metallurgy Technology

european powder
metallurgy association

Planetary Assembly

Company: AMES SA

Application Sector: Automotive

Requirements: This part is assembled in the transmissions of the Volkswagen Touareg and the Porsche Cayenne, where it supports the planetary gears used in the transfer case of 4WD vehicles. In any of the 6 holes, a shaft is fitted, where planetary gears are turning. The part only works when the short speeds are connected. In any other case, the part is turning free without any work. So the part is acting as a speed reduction of the transmission shaft.

Benefits: PM offers the possibility to join parts during sintering. In this case, a sinter-brazing technique is used to join the front and the rear during sintering, so a joining step is saved. Given the complex shape of the part its compactness and dimensional accuracy, PM technology offers the customer many economic savings.

Product Density: Front: 6,85 g/cm3, Rear 6,8 g/cm3, Bushing 6,7 g/cm3
Product Hardness: Front 230 HV10, Rear 250 HV10
Tensile Strength: Front 620 MPa, Rear 600 MPa, Bushing RCS 150 MPa
Product Yield: Front 350 MPa, Rear 400 MPa
Final Weight: 557+500+58=1.115 g.