

Method for joining a titanium detail with another metal detail comprises of cleaning the contact surfaces of the details being joined, combining the details into an assembly, heating, pressing those together and soaking during a proper time. Preliminary, between the contact surfaces of the details being joined an intermediate layer is formed, which comprises of fine $\alpha - \beta$ titanium alloy, with granules not larger than 1 – 3 μm . Heating of the details in the assembly is performed in vacuum, or in a protective gas medium, together with the intermediate layer, up to temperatures in between 1000 and 1500°F (540-820°C). Pressing together is performed up to stresses providing over-plastic deformation of the intermediate layer. Thickness of the intermediate layer is determined depending of the roughness and waviness of the contact surfaces of the details being joined and is within 10 and 200 μm .