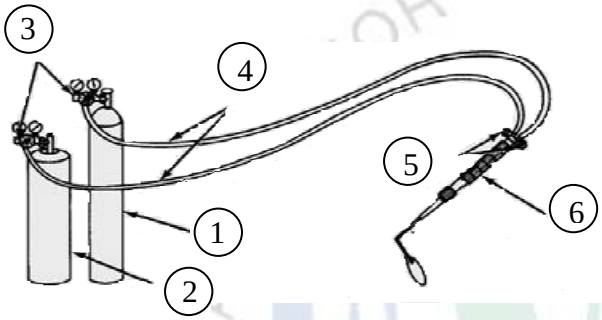
WELD BRAZING

Description of the process:

This is a process that allows metal parts together using an addition's material, in liquid, with a melting point lower than the parts to weld. After a heating to a suitable temperature, the addition's material joins to the material base by diffusion, without melting the latter and without changes in profile of the parts. Besides that:

- Melting point of addition's material is more than 450 ºC;
- The deposition of addition's metal is made in the joint and in the welding, without capillary action.



Equipment:

1. Oxygen cylinder;
2. Cylinder of fuel gas;
3. Pressure regulators;
4. Hoses;
5. Valves to control gas;
6. Blowtorch.

Applications:

- ✓ Union of pieces of small thickness;
- ✓ Union of metal treated;
- ✓ Materials with low melting point (ex: tin);
- ✓ Electrical, aerospace, electronics and motor car industry;
- ✓ Tubes, rods and bars, forged and cast components, if you want low distortion.

Advantages	Disadvantages
• Less heat required and less distortion; • Simple and easy equipment to use; • Soft and ductile addition's metal, with low residual stresses; • It allows welding dissimilar materials; • Fragile materials such as cast-iron can be welded without preheating.	• Welding's resistance is limited by the addition's material resistance; • Galvanic corrosion between addition and base materials in the joint; • The color of addition´s material may be different from the color of the base material; • Production of gases and smoke (consequently in the place, there should exist an effective ventilation).

References:

- Haynes, "Haynes techbook welding manual", 1994;
- http://www.brazingbook.com;
- http://www.machinedesign.com;
- http://images.google.pt.