

1 Melting down the ingots	As quickly as possible in efficient furnaces to keep Mg melting loss, gas absorption and oxidation of melts low; replenish preheated ingots and returns in small volumes to avoid segregation.
2 Salt treatment during melting down	Not needed when melting ingots; useful for avoiding oxidation when using small returns. Prohibited to use usual salt ! There is a risk of Na pickup.
3 Silicon limit and pickup	Si is an impurity and should be below 0,15% in the casting. Don't melt after AlSi alloys.
4 Magnesium burnout	Normally melting loss of 0.1-0.2% per fusion, correction not normally needed; if the Mg content is significantly below 4.0 %, add pure magnesium in portion of 0.4% .
5 Iron solubility	Fe corrections are possible, while waiting 15 minutes at 720 °C
6 Skimming	Needed after melting down
7 Temperature after melting down	Maximum of 760 °C (check temperature !)
8 Degassing and refining the melts	<ul style="list-style-type: none"> • Effective refining and fastest method using quick-running rotor for gas feeding, 7 – 10 l/min argon or nitrogen, 6 – 10 min • Gas flushing lance with fine porous head, needs longer treatment times (cooling !) • Gas flushing tablets do not achieve the necessary effect !
9 Skimming	Careful skimming needed. Only special Na-free salts may be used to reduce the metal content of skimmings!
10 Temperature in holding furnace	Do not allow to fall below 660 °C and keep melt moving by means of: <ul style="list-style-type: none"> • convection • rotor (impeller) • use bottom injection of N₂ • melt pouring Do not use deep furnace with cover heating if melt stays calm !
11 Grain refining	If needed with grain refiner based on TiB ₂ : 0.10 % master alloy wire , wait 5 minutes before next casting.
12 Modification of Si	Silicon content is below 0.15% in the Castaduct-42. Modifying elements like Sr and P are without any influence. Na content >10 ppm should be avoided.
13 Pouring temperature (approx. values)	680 – 710 °C, varies depending on design, size and wall thickness of high pressure die castings
14 Die temperature and die chamber temperature	Die surface temperature: between 200 and 350 °C (depending on design, size and wall thickness of cast) Preheat the chamber electrical or with oil > 200 °C
15 Quenching casts after removal from mould	No variation in mechanical properties either with rapid water cooling nor with cooling with air
16 Heat treatment	Normally none Up to 350 °C no influence to the metallic structure !