



Data sheet „Direct hot pressing“

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Direct hot pressing

Direct hot pressing is from its basics an old and well known technology. The past decades were dominated by direct hot pressing devices operated up to temperatures of max. 1.400°C. This technique is frequently used for the consolidation of wear resistant inserts for cutting wheels, for drill bits or in grinding discs.

Within the past years the second generation of direct hot pressing devices became available on the market, which are allowing hot pressing at temperatures up to 2.400°C and even above, while maintaining a total cycle time of less than one hour.

Therefore this technique can be effectively used for the consolidation of materials usually difficult to sinter. The technology is especially of advantage for high temperature materials especially if fully dense or fine grained microstructures in combination with an excellent performance are required.

Direct hot pressing is characterised by a high heating/cooling rate (up to 400K/min) and therefore offers a very attractive process for economic fabrication of high performance materials.



Typical process parameters for direct hot pressing are:

Heating rate:	100-200K/min (max 400K/min)
Cooling rate:	100-200K/min
max Temperature:	2400°C
mech. Pressure:	1500 kN
Atmospheres:	Vac, Ar, N ₂ , N ₂ /H ₂
Sample diam.	200mmx200mm (max 250x250)
Typical cycle:	< 1 hrs

