

\* 1, 1\*, 1, 1\*, 1, 2  
1, 2( )

# Production of pre-form mold by Direct Metal Laser Sintering(DMLS) process

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Key words : DMLS( Direct Metal Laser Sintering ), Conformal Cooling Channel, Preform Mold

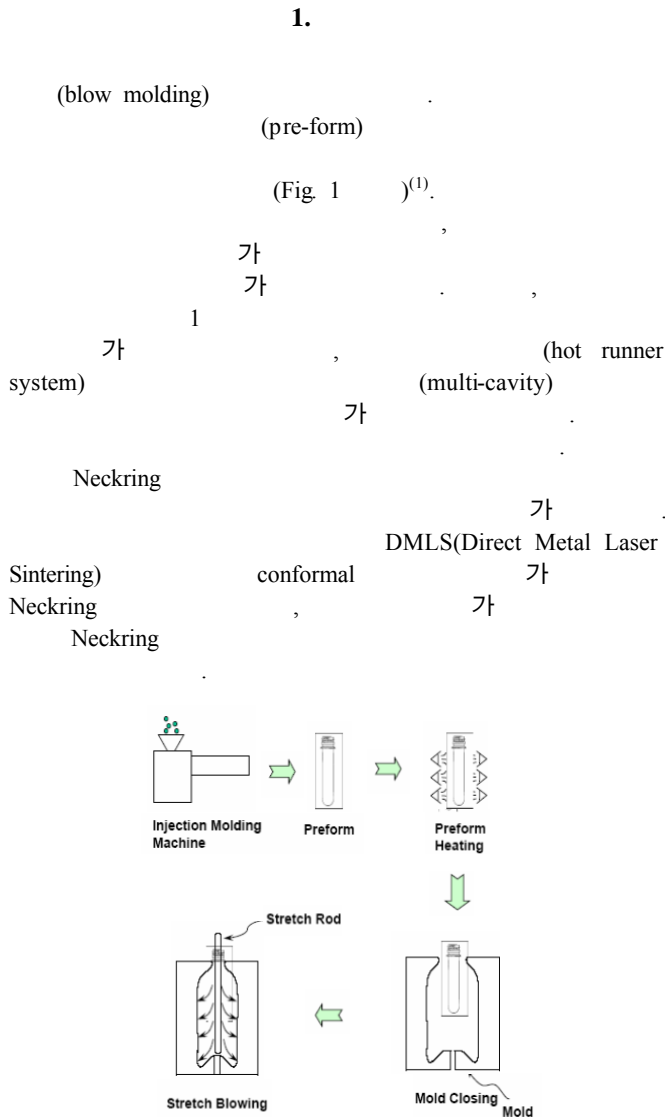


Fig. 1 Schematic drawing of blow molding

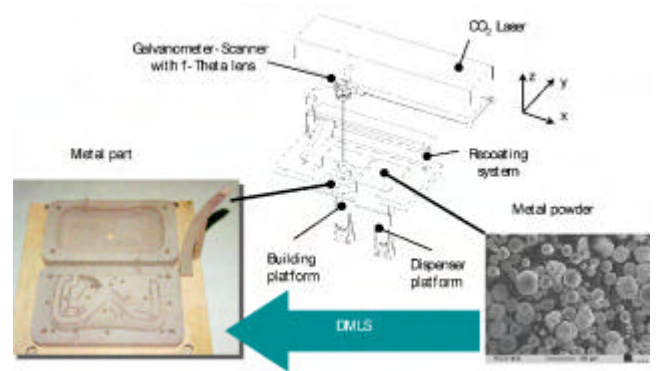


Fig. 2 Working principle of DMLS(Direct Metal Laser Sintering)<sup>(5)</sup>

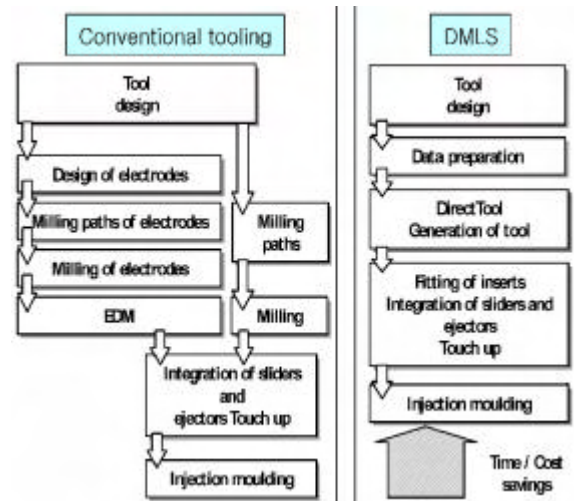


Fig. 3 Comparison of process for conventional mechanical working and DMLS<sup>(5)</sup>

2. DMLS 가  
DMLS 3 CAD data (laser beam)  
가 가  
가 DMLS  
Fig. 3  
DMLS 가  
DMLS 가  
DMLS 가

2.1 DMLS  
EOS EOSINT M 250X  
20um  
Neckring Steel 가  
225HV 가  
400HV Fig. 4(a) DMLS  
Neckring 3 conformal Fig. 4(b)  
가 가 V  
DMLS 가 DMLS  
가 가

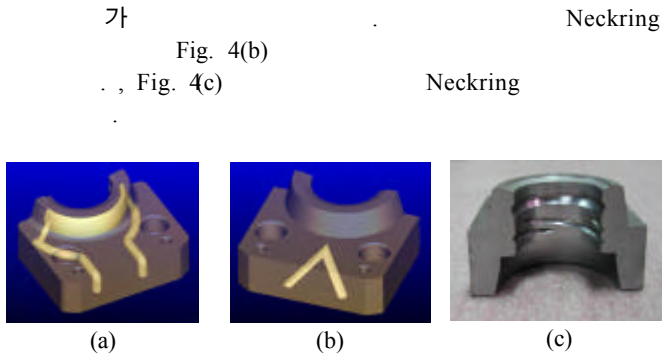


Fig. 4 Photo of (a) conformal cooling channel, (b)conventional cooling channel and (c) neckring mold

3. 가 DMLS Neckring  
 가 DMLS Neckring  
 가 (Model : IR SnapShot)  
 Neckring 60

Fig. 5

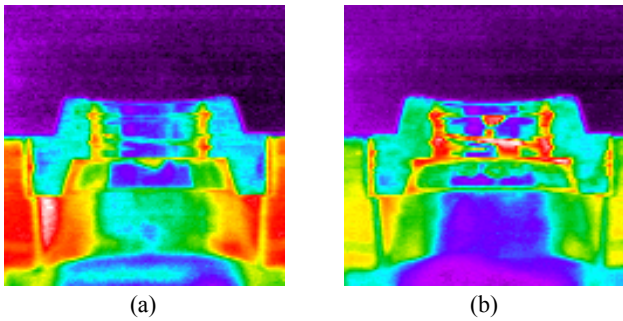


Fig. 5 Comparison of temperature distribution for neckring mold with cooling channel of conventional mechanical working and DMLS

Fig. 5(a) 가  
 , Fig. 5(b) 가 conformal  
 가 DMLS 가  
 가 DMLS

가 7 , DMLS 6 가  
 1  
 1 가  
 Fig. 6  
 가 DMLS  
 가 (parting line)  
 (flash) DMLS  
 (surface blasting)

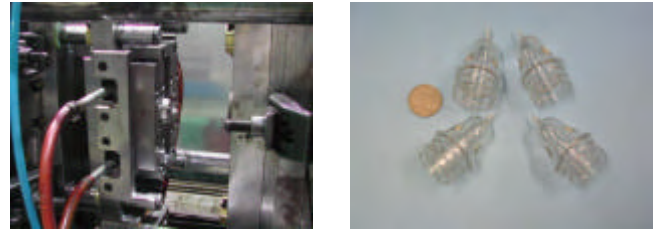


Fig. 6 Photo of (a)perform mold and (b)injection molded part

4.

DMLS 가  
 Neckring  
 1) DMLS conformal 가  
 2) 가 DMLS  
 3) DMLS 가

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