Selective laser melting (SLM) and direct metal laser sintering (DMLS) are preferred additive manufacturing processes in producing complex physical products directly from CAD computer data, nowadays. The advancement of additive manufacturing promotes the design of internally cooled cutting tool for effectively used in removing generated heat in metal machining. Despite the utilisation of SLM and DMLS in a fabrication of internally cooled cutting tool, the level of accuracy of the parts produced remains uncertain. This paper aims at comparing the dimensional accuracy of SLM and DMLS in machining internally cooled cutting tool with a special focus on geometrical dimensions such as hole diameter. The surface roughness produced by the two processes are measured with contact perthometer. To achieve the objectives, geometrical dimensions of identical tool holders for internally cooled cutting tools fabricated by SLM and DMLS have been determined by using digital vernier calliper and various magnification of a portable microscope. In the current study, comparing internally cooled cutting tools made of SLM and DMLS showed that generally the higher degree of accuracy could be obtained with DMLS process. However, the observed differences in surface roughness between SLM and DMLS in this study were not significant. The most obvious finding to emerge from this study is that the additive manufacturing processes selected for fabricating the tool holders for internally cooled cutting tool in this research are capable of producing the desired internal channel shape of internally cooled cutting tool.