

Coolant pressure and volumes

The illustrated optimum, good and minimum required coolant volume apply only to spiral-fluted Ratio drills type RT 100. In contrast to the pressure, which is a feature of the machine tool; the cooling system fitted to it and also the possibility of leakage, volume does not depend on the machine (fig. 1). The pressure figures given are therefore recommendations which serve only as guidelines.

Ratio drills type RT 80 with central coolant duct are subject to different standards (fig. 2). The diagrams shown are for Ratio drills in their most important application, machining of steel.

But they are also guidelines for the machining of other materials, primarily because the highest coolant pressures are constantly required for the machining of steel. The effects of cooling using straight-fluted Ratio drills type RT 150 is particularly sensitive and is clearly demonstrated in the

examples for particular workpiece materials. For example, the loss in tool life through low pressures when machining grey cast iron is considerably higher than when machining AISi alloys. But this is only the case when the AISi alloy is short-chipping! The absolute necessary minimum pressure or good pressure should, when machining cast iron, be generally a little higher than for AISi machining (figures 3 and 4).

The recommended values are to be used only for drilling depths of up to approx. 5 x D. Deeper holes should be produced with tools having internal coolant ducts, as for example RT 150 GN, otherwise the production of deeper holes (depending on the material) becomes uneconomical.

Required coolant pressures Required coolant volumes
█ optimum pressure █ optimum volume
█ good pressure █ good volume
█ minimum pressure █ minimum volume

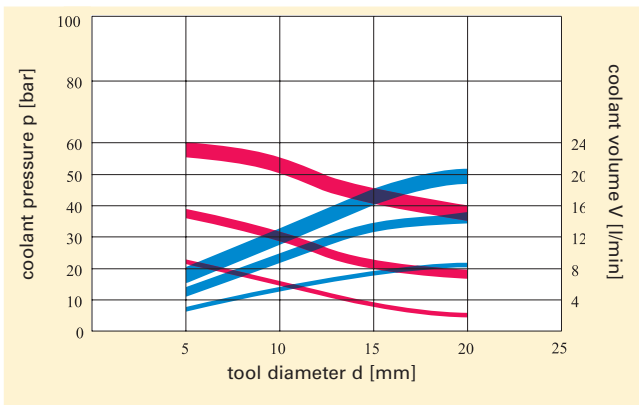


fig. 1: Required coolant pressures and volumes for RT 100 Ratio drills with internal spiral coolant ducts.

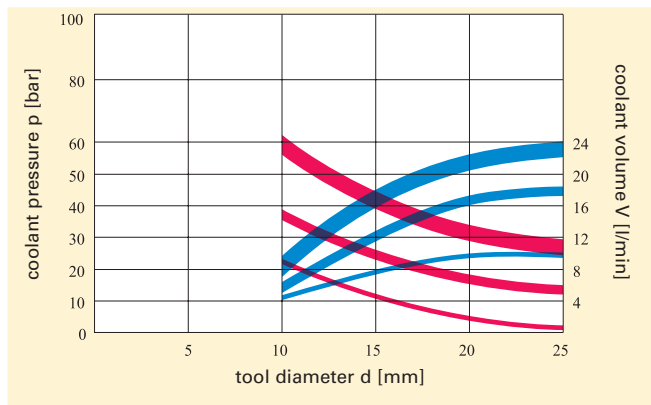


fig. 2: Required coolant pressures and volumes for RT 80 Ratio drills with central internal coolant duct.

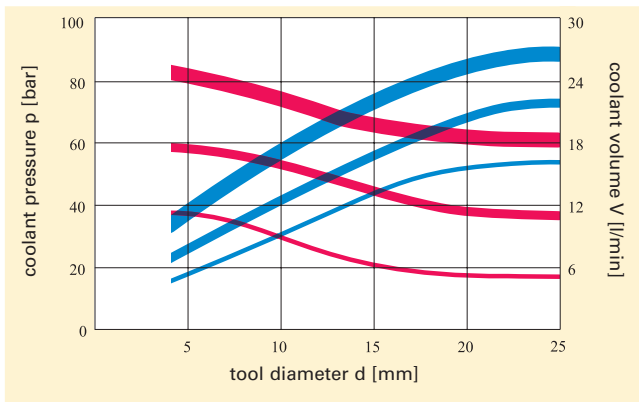


fig. 3: Required coolant pressures and volumes for straight-fluted Ratio drill type 150 GG when machining cast iron.

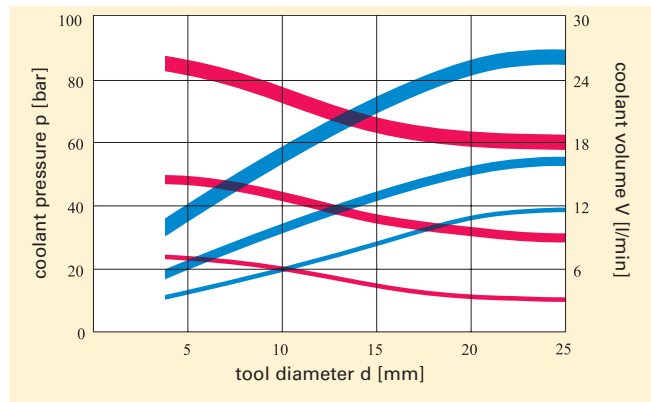
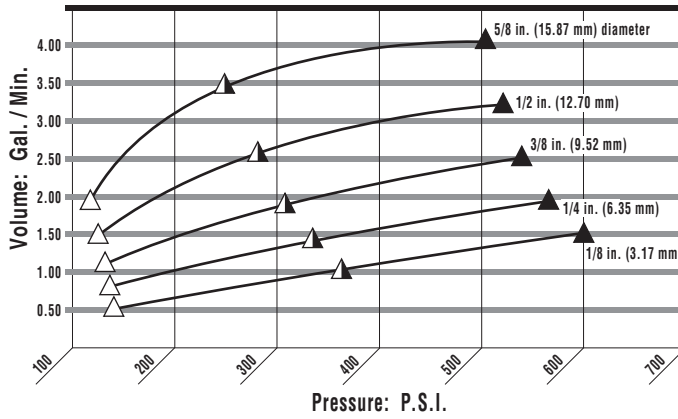


fig. 4: Required coolant pressures and volumes for straight-fluted Ratio drill type 150 GG when machining AISi7.

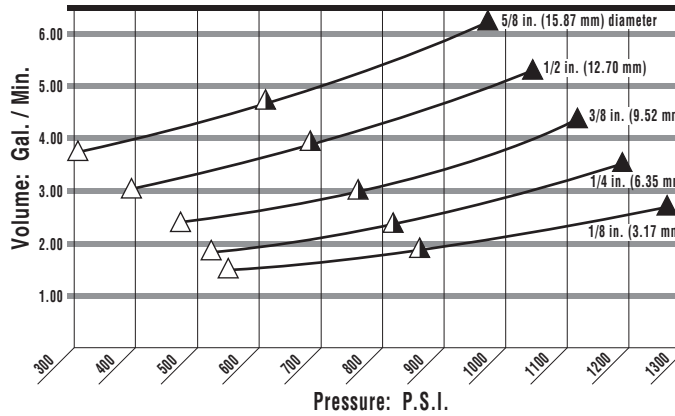
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RT 100 U, F & C

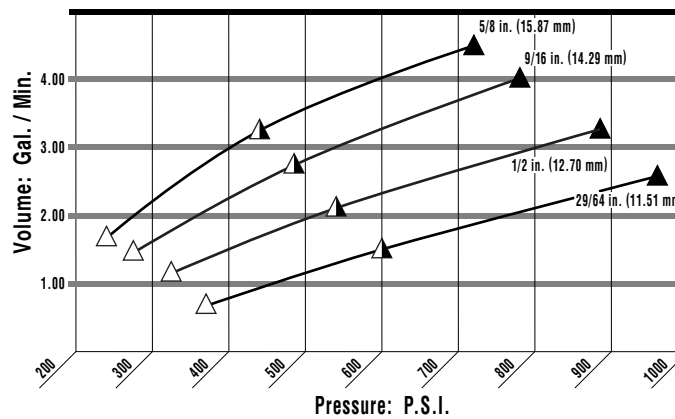


△ = Minimum ▲ = Good ▴ = Optimum

RT 150 GG

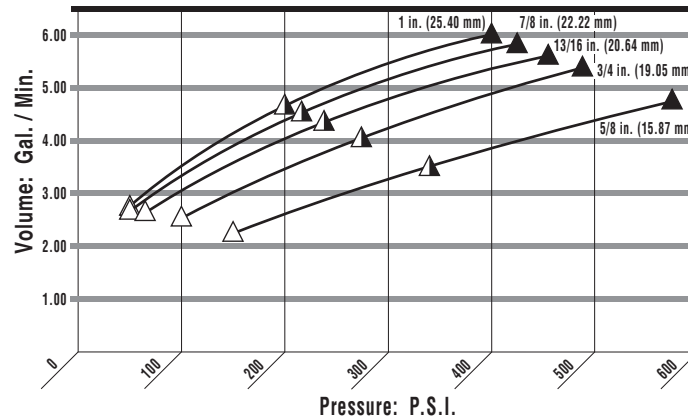


HT 800 WP



△ = Minimum ▲ = Good ▴ = Optimum

RT 800 WP



Technical