

Diamond bit

---Thermal stable polycrystalline diamond bit (TSP bit)



TSP bit uses self-sharpening synthetic thermal stable polycrystalline diamond as cutting elements, which directly sintered into the erosion and wear resistant WC matrix. The cutting elements can break rocks with shear, plough and grind actions, suitable for using in medium hard to hard formations with high compressive strength and medium abrasiveness.

Apart from some main features of PDC bits, TSP bit also has good thermal stability, and TSP cutters can sustain high temperature up to 1200 °C, thus suitable for using on high speed downhole power drilling tools.

In order to meet application requirements in different formations, the TSP bits can also be designed into different cutter density, cutter layout, hydraulics and different crown shapes (parabolic, round or cone). Specific flow area can be designed in accordance with customers' request.

Main characteristics

- Medium cone crown, good stability.
- Round and scribe TSP stones are arranged alternatively for high penetration rate and long bit life.
- Applicable formations: soft to medium hard carbonate or sandstone with medium abrasiveness.



Bit size (in)	Specifications				推荐钻井参数			
	No. of cutters (pcs)	Gage length (mm)	Flow area (in ²)	API reg. pin size (in.)	WOB (kN)	RPM (r/min)	Mud flow rate (L/S)	HHP (HSI)
6	363	75	0.30-0.60	3 1/2	50-100	80-500	10-12	1-3
8 1/2	650	100	0.35-1.00	4 1/2	75-150	80-500	19-24	1-3

Main characteristics

- Shallow cone crown, with even WOB distribution, good cleaning and long bit life.
- Dense placement of staggered cubic, round and scribe TSP stones for high penetration rate in hard formations.
- Applicable formations: Medium hard carbonate or sandstone with medium abrasiveness.



Bit size (in)	Specifications				推荐钻井参数			
	No. of cutters (pcs)	Gage length (mm)	Flow area (in ²)	API reg. pin size (in.)	WOB (kN)	RPM (r/min)	Mud flow rate (L/S)	HHP (HSI)
6 3/4	175	85	0.30-0.60	3 1/2	60-120	60-500	11-14	1-3
8 1/2	570	100	0.35-1.00	4 1/2	75-150	60-500	17-21	1-3