

# D-SEP™ THRUST BEARINGS FOR DEMANDING APPLICATIONS

Demanding downhole applications such as SAG-D Artificial Lift (ESP) motors and seals (protectors), mud motors, etc. require unique thrust bearing solutions. D&S Engineered Products Inc. offers specialized hydrodynamic tilting pad thrust bearings with unique surface treatments. These bearings are matched with a runner (thrust collar) whose surface is treated with the tribological pair to the bearing surface. The result is a bearing-runner pair that provides superior performance, reliability and longevity.

Thrust bearings are available in rocker back or pliant support tilting pad versions. All tribological pairs listed below are suitable for electric submersible pumps, mud motors and other downhole equipment except where noted.

TRIBOLOGICAL PAIR		SUITABILITY (0 = unsuitable, 5 = highly suitable)								
Thrust Face (steel backed)	Runner Face (steel backed)	Dry COF	Cost	High Speed	High Load	High Temp.	Thin Film	Corrosion Resistance	Sour Gas Resistance	Sand Resistance
PEEK* (molded)	no coating (hardened)	0.2-0.35	\$\$	3	3	3	3	3	0	0
SiC (bonded wafer)	W•Co (bonded wafer)	0.15-0.2	\$\$\$\$\$	5	4	5	5	5	4	5
Si <sub>3</sub> N <sub>4</sub> (bonded wafer)	no coating (hardened)	0.2-0.3	\$\$\$\$	4	4	5	4	4	4	5
W•C (bonded wafer)	W•Co (bonded wafer)	0.2-0.25	\$\$\$\$	5	4	5	4	5	4	4
PCD (bonded wafer)	no coating (hardened)	0.1-0.15	\$\$\$\$\$	5	4	5	4	3	4	5
Ni•Co•P•SiC (coating)	Co•P (coating)	0.3-0.6	\$\$\$	4	3	5	5	5	5	5
Ni•Co•W•Cr•B•Si (coating)	Co•P (coating)	0.3-0.6	\$\$\$\$	4	3	5	5	5	5	5

\* Not suitable for mud motors

