KSB Amarex KRT vs Competing Technologies

	KSB	FLYGT	EBARA	ABS	GRUNDFOS	WILO EMU	Benefits of KSB
							
Mechanical Seals	Double mechanical seals SiC/SiC lower seal; carbon/ silicon carbide upper seal	Double mechanical seals tungsten carbide/tungsten carbide lower seal; carbon/ tungsten carbide upper seal	Double cartridge mechanical seals SiC/ SiC with 304 SS wetted parts lower seal; carbon/ceramic with 304SS wetted parts upper seal	Double mechanical seals SiC/SiC lower seal; cr-steel/carbon upper seal	Double mechanical seals SiC/SiC lower seal; cr-steel/carbon upper seal	Standard design SiC/SiC mechanical seal with labyrinth seal on the motor side	**KSB standard is a Burgmann quality bellows seal. Silicon carbide is superior to Tungsten Carbide for wear resistance**
Cable Entry	Compressed rubber grommet to seal the cable exterior; epoxy fill to seal the interior passages	Single cylindrical elastomer grommet, flanked by washers	Similar design, except the use of 304SS bolts	Sealed connection chamber with cable gland	Sealed connection chamber with cable gland	Similar concept employed by KSB	**100% watertight even when cable is cut below the water line. Each conductor is sealed to assure it is watertight**
Shaft Material	ASTM A276 Type 420 SS for up to 60KW and A 576 Gr. 1045 with protection sleeves Type 420 SS	AISI 431 SS up to 78 KW and ASTM A572 Grade 50 with shaft protection	ASTM A276 Type 403	ASTM A276 Type 420 SS/ 1.4021	1.4460	ASTM A276 Type 420SS/1.4021	**KSB employes a stiffer material which can provide higher efficiencies at higher KW**
Impeller Types	**K**: shrouded multi channel impeller. **E**: shrouded single channel impeller. **F**: vortex impeller. **D**: open single vane impeller (13% solids municipal sludge). D impeller has a free passage of 100-150 mm with only a single vane to allow for easy passage of rags	**D**: vortex impeller **C**: shrouded single or multi channel impeller **N**: semi-open two vane impeller (up to 5% solids municipal sludge) N impeller has a free passage of 23-89 mm with a two vane passage	Enclosed multi-vane mixed flow type DN150 and larger, DN100 radial multivane, enclosed impeller, DN80 and smaller multivane semi-open design	Contrablock: spiral bottom plate with waved shearing cutting edge, Vortex impeller, channel type closed impellers	Semi-axial long-vane impeller, shrouded multi channel impeller design.	Shrouded multi-channel impeller, shrouded single impeller, vortex impeller, screw impeller	**A wider range for municipal sludge applications.**
Installation	Wet Pit: KSB Guide Cable Installation, Guide Rail System, Portable Dry Pit: Vertical and Horizontal	Wet Pit: Guide Rail, Portable Dry Pit: Vertical and Horizontal	Wet Pit: Guide Rail, Portable Dry Pit: Vertical and Horizontal	Wet Pit: Guide Rail, Portable Dry Pit: Vertical and Horizontal	Wet Pit: Guide Rail, Portable Dry Pit: Vertical and Horizontal	Wet Pit: Guide Rail, Portable Dry Pit: Vertical and Horizontal	**KSB Guide Cable system standard does not need the supply of 316SS rails. It eliminates the chances of bending rails during pump removal**
Elbow Connection	Rubber gland seal, compression sealed by pump weight	Metal-to-metal seal	Metal-to-metal seal	Metal-to-metal seal	Rubber gland seal, compression sealed by pump weight	Metal-to-metal seal	**KSB protects against leakage by using rubber gland seals vs. metal-to-metal**
Bolts	A276 316Ti	A276 316Ti	1.4301/A276 304	A 276 316	1.4436	1.4301/A 276 304 and 1.4401/A 276 316	**KSB has superior corrosion resistance, making maintenance easier**
Shrouded single or multi-channel impeller wear rings	VG434 SS impeller wear ring with cast iron casing wear ring	SS impeller wear ring with Nitrile rubber coated steel ring or brass	1.4301/A276 304	Cast Iron casing wear ring	Cast iron wear plate	1.4462 SS impeller wear ring with 1.4308 casing wear ring	**KSB's material combination protects against wear**
Internal Cooling System	Non toxic glycol-water solution	Glycol-water solution	Medium cooled cooling jacket		Medium cooled cooling jacket	Oil Circulation Cooling System	**KSB utilizes a cooling jacket design**

** The information in this chart was compiled from published spec sheets, published data sheets, manufacturer websites, and published product brochures.*