

# Brazed Carbide MULTI-DRILLS

## KDS Type



### ■ Description

The new AK type drill features an extra long carbide drill head, new cutting geometry, coolant holes and ultra hard TiAlN coating for reliable high productivity drilling.

### ■ Advantages

- General purpose drill for steels, stainless steels, cast irons
- High productivity drilling even on deep holes up to 7 x D
- Twice the tool life of conventionally coated drills
- Self centering
- Surface finish and tolerances comparable to solid carbide
- Regrindable extra long carbide head halves drill replacement costs

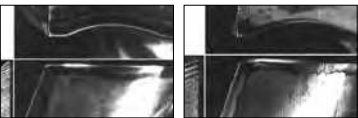
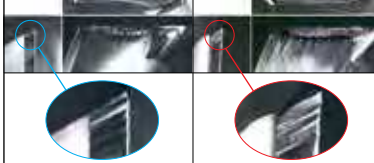
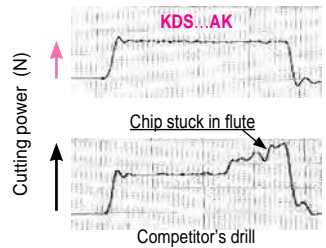
### ■ Series

Type	Diameter range (mm)	Hole depth (L/D)	Remark
Short type (MAK Type)	ø9,5~ø40,5	~ 3	First choice general purpose drill
Long type (LAK Type)	ø9,5~ø40,5	~ 5	
Extra long type (DAK Type)	ø9,5~ø40,5	~ 7	Helix angle: 25° ---> 0°

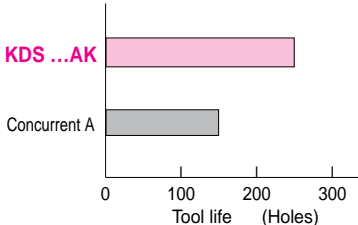
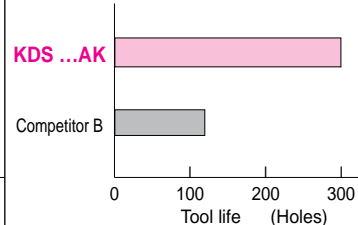


### Series

### ■ Performance

<b>● High efficiency drilling</b> Comparison of coating damage when high speed drilling TiAlN coated KDS...AK      TiN coated type  $v_c = 120 \text{ m/min}$ $v_c = 60 \text{ m/min}$ After 30 m cut length (600 holes)	<b>● Optimized drill geometry</b> Comparison of damage to drill margin After 40 min. cut length KDS...AK      Competitor's drill  Drill dia.: 18,0 mm $v_c = 50 \text{ m/min}$ Work material: C50 (HB230) $f = 0,25 \text{ mm/rev}$ $d_{oc} = 50 \text{ mm}$ $d_{oc} = 38 \text{ mm}$	<b>● Comparison of cutting power (chip removal capability)</b>  Cutting power (N) ↑ Chip stuck in flute Competitor's drill
Drill dia.: 18,0 mm Work material: C50 (HB230) $f = 0,3 \text{ mm/rev}$ $d_{oc} = 50 \text{ mm}$	Drill dia.: 18,0 mm Work material: C50 (HB230) $v_c = 50 \text{ m/min}$ $f = 0,25 \text{ mm/rev}$ $d_{oc} = 38 \text{ mm}$	Drill dia.: 18,0 mm $v_c = 50 \text{ m/min}$ Work material: C50 (HB230) $f = 0,3 \text{ mm/rev}$ $d_{oc} = 90 \text{ mm (L/D=5)}$

### ■ Application examples

<b>● Workpiece material</b> - General steel and alloy steel - Low carbon steel - Die steel - Stainless steel - Ductile cast iron - Grey cast iron	<b>● Automotive parts</b> Work material: C50 (HB250)  Drill: KDS 180 LAK (ø18,0mm) Conditions: $v_c = 55 \text{ m/min}$ , $f = 0,25 \text{ mm/rev}$ $d_{oc} = 70 \text{ mm}$	<b>● Automotive parts</b> Work material: 42CrMo4 (HB250)  Drill: KDS 250 MAK (ø25,0mm) Conditions: $v_c = 60 \text{ m/min}$ , $f = 0,25 \text{ mm/rev}$ $d_{oc} = 65 \text{ mm}$
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