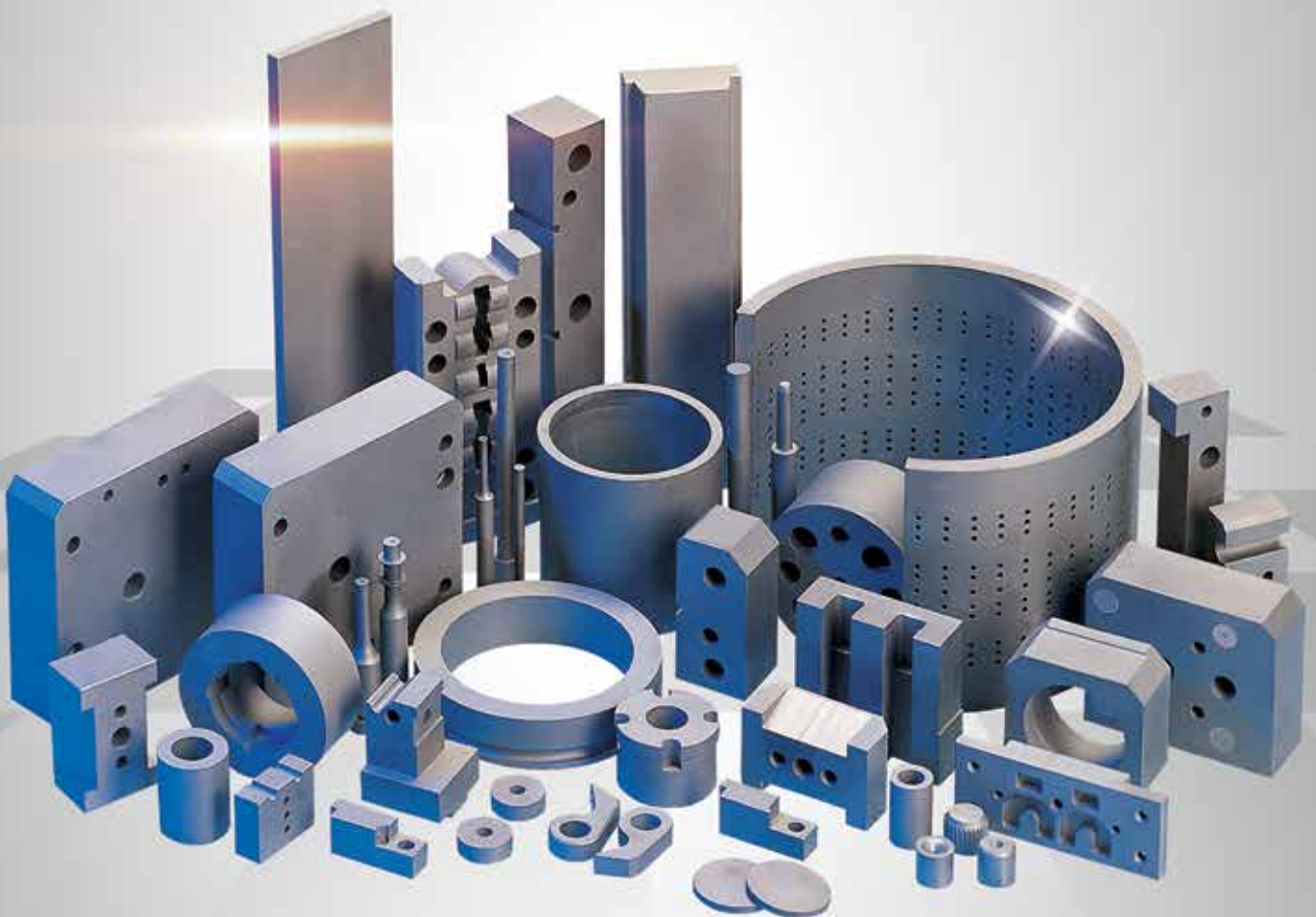
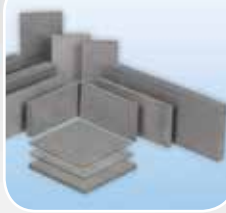


CARBIDE WEAR PARTS



PREFORM

- ▶ Excellent deformation resistance due to high compressive strength & impact strength.



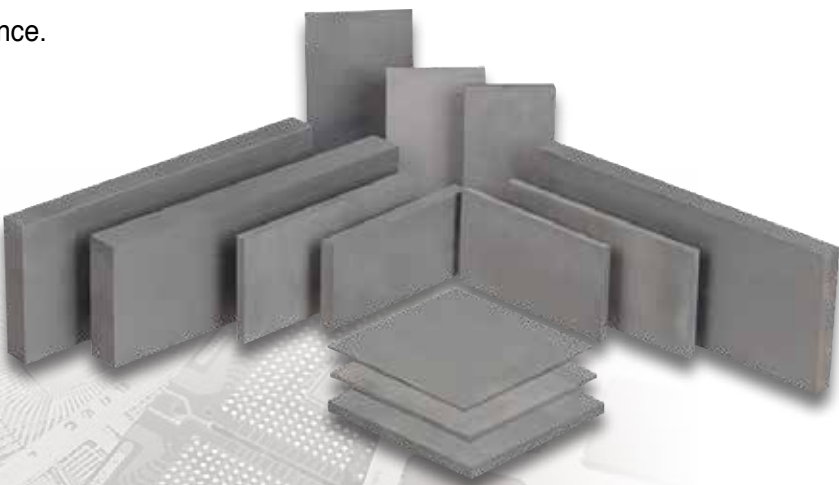
Properties & Application of Main Grades

Grade	Properties & Application	
K20	Properties	<ul style="list-style-type: none">• 6% Co with fine grain tungsten carbide.• Very high wear resistance .
	Application	<ul style="list-style-type: none">• Powder compacting dies, small & medium dia drawing dies, nozzle.• Dies, tube sizing mandrels, and impact extrusion dies, valve & valve seat, bush.
K30	Properties	<ul style="list-style-type: none">• 9% Co with fine grain tungsten carbide.• High wear resistance & medium toughness.
	Application	<ul style="list-style-type: none">• Blanking of very light ferros metals and light nonferros metals, powder compacting dies.• General purpose drawing dies, tube sizing mandrels.
D20	Properties	<ul style="list-style-type: none">• 12% Co with fine grain tungsten carbide.• High wear resistance & toughness.
	Application	<ul style="list-style-type: none">• Light blanking dies, forming dies, guide bush, burnishing rolls.• Stamping dies for stainless steel & alloy steel.
DX5	Properties	<ul style="list-style-type: none">• 16% Co with fine grain tungsten carbide.• Very high toughness.
	Application	<ul style="list-style-type: none">• Wire flattening roll, lamination punches & dies, tube mill roll.• Cut edge dies, medium blanking dies.

PLATE

- ▶ High cutting-edge strength & good wear resistance by using fine & ultrafine WC.
- ▶ High deformation & deflection resistance.

- ▶ **Application**
 - _ Semi-Conductor
 - _ Lead Frame
 - _ Connector
 - _ Switch & Relay



Properties & Application of Main Grades

Grade	Properties & Application	
UF12	Properties	<ul style="list-style-type: none">• 12% Co with ultra-fine grain tungsten carbide.• Excellent wear resistance and toughness.• Easy grinding and good edge stability.
	Application	<ul style="list-style-type: none">• Die & punch for semiconductor mold.• Punch for lead frame & connector mold.
D20	Properties	<ul style="list-style-type: none">• 12% Co with fine tungsten carbide.• High wear resistance and toughness.• Easy grinding and specially designed for dies.
	Application	<ul style="list-style-type: none">• Die for lead frame & connector mold.

KNIFE >>>

- ▶ Longer tool life due to high impact strength, tensile strength & wear resistance.
- ▶ Accurate & precise products can be obtained with minimized burrs.



▶ Slitting Knife (solid type)



▶ Slitting Knife (combination type)



▶ CorkKnife



▶ Bed Knife



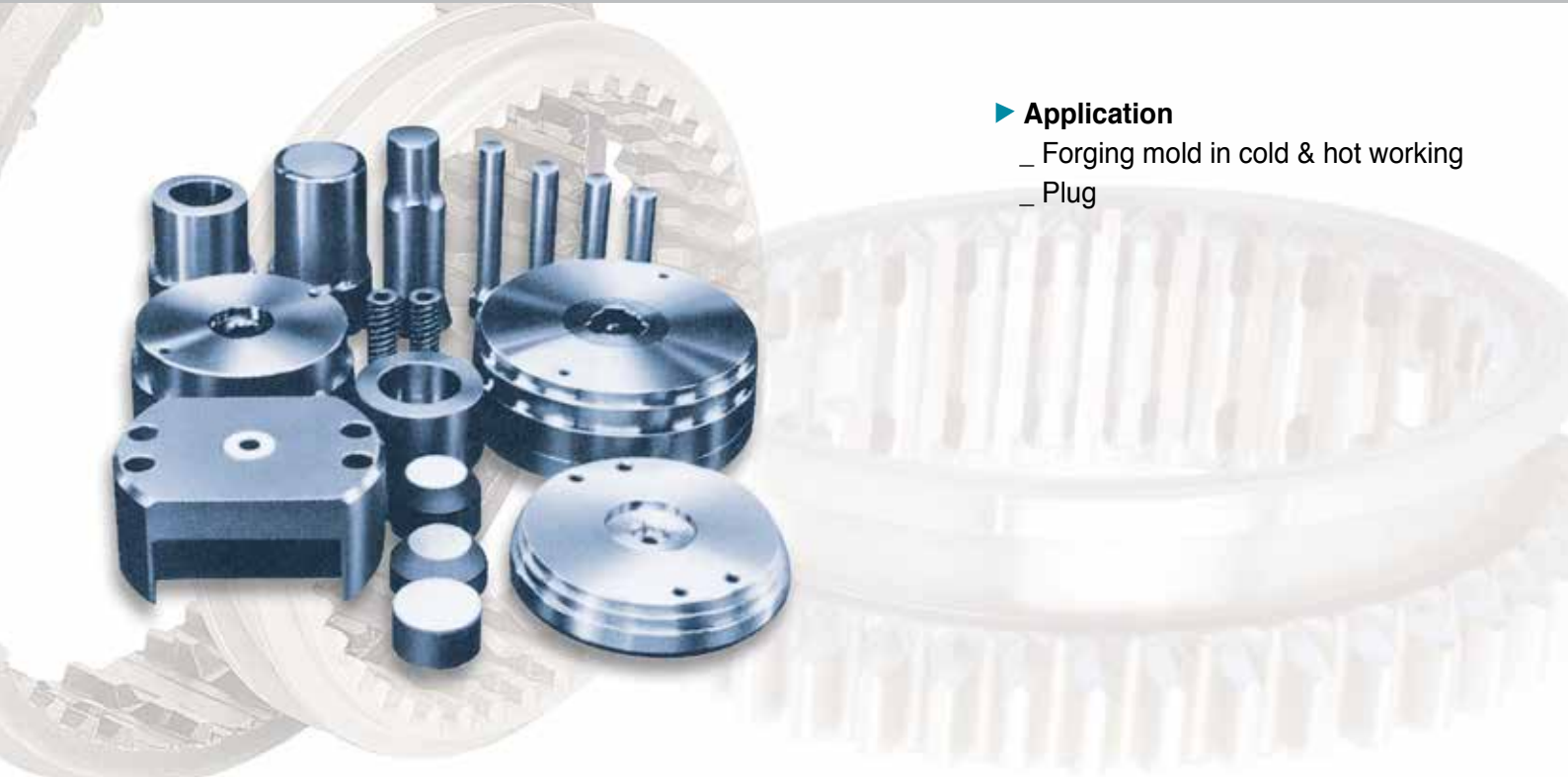
▶ Other Knives

Properties & Application of Main Grades

Grade	Properties & Application	
K20	Properties	<ul style="list-style-type: none">• 6% Co with fine grain tungsten carbide.• Very high wear resistance.
	Application	<ul style="list-style-type: none">• 6% Co with fine grain tungsten carbide.• Very high wear resistance.
DX5	Properties	<ul style="list-style-type: none">• 16% Co with fine grain tungsten carbide.• High toughness and medium wear resistance.
	Application	<ul style="list-style-type: none">• Rotary slitting knives for medium thickness of steel & stainless steel plates.
T25S	Properties	<ul style="list-style-type: none">• 25% Co with fine grain tungsten carbide.• High toughness and medium wear resistance.
	Application	<ul style="list-style-type: none">• Rotary slitting knives for steel, stainless steel plate.• Knives for steel & stainless steel bar.

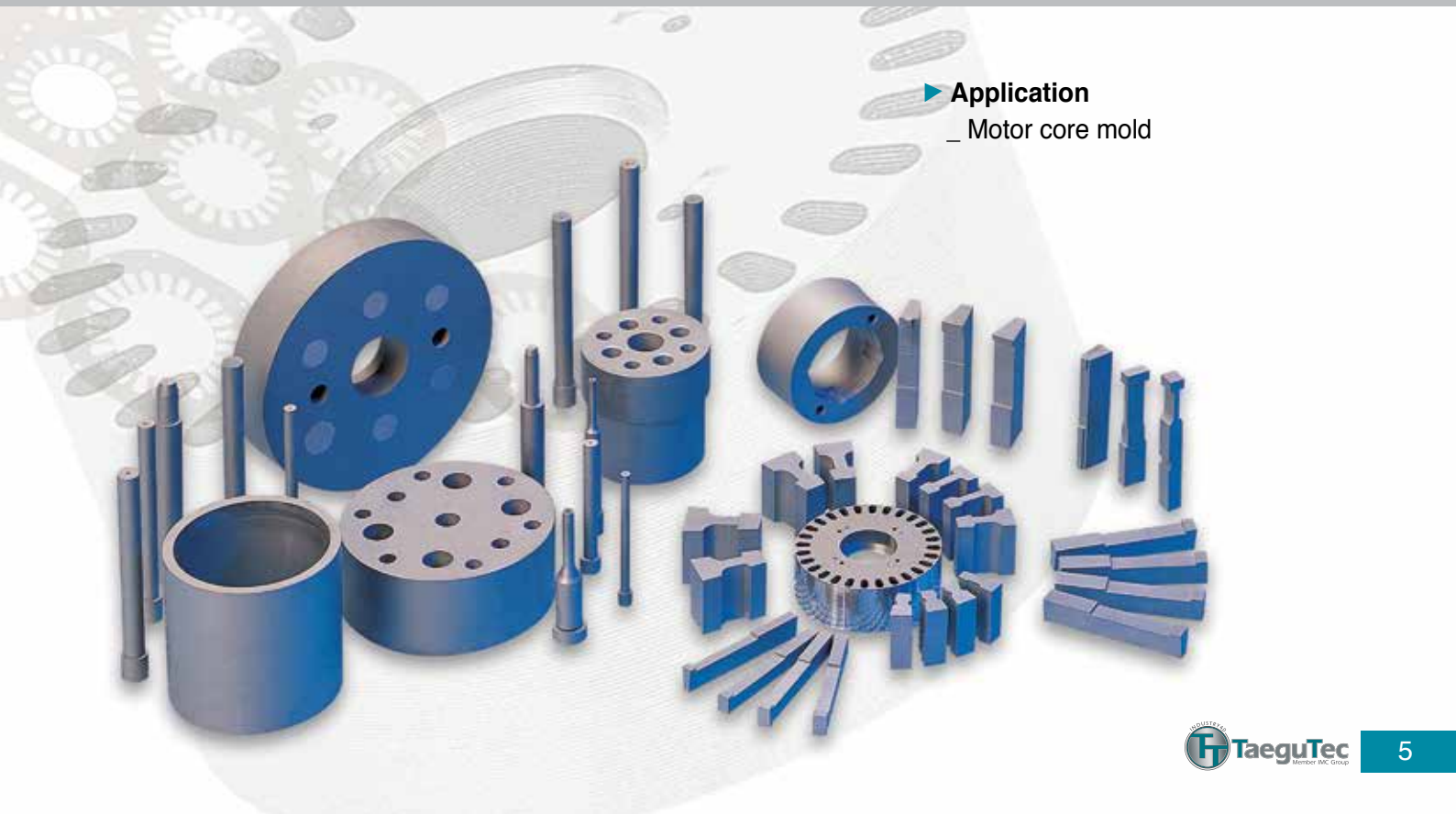
MATERIALS FOR FORGING MOLD >>>

- ▶ **Application**
 - _ Forging mold in cold & hot working
 - _ Plug



MATERIALS FOR MOTOR CORE MOLD >>>

- ▶ **Application**
 - _ Motor core mold



OTHER TOOLS >>>

GRADE OF CARBIDE WEAR PARTS >>>



▶ EXTRUSION & DRAWING DIES



▶ POLISHING DISK



▶ PLUNGER



▶ BURNISHING ROLL



▶ LATHE CENTER



▶ NOZZLE



▶ SUCTION ROLL



▶ JAW

Ultra-Fine Grade

Grade	Composition		TRS Kpsi/ (N/mm²)	Density (g/cm³)	Hardness (HRA)	Compressive Strength (kgf/mm²)
	WC	Co				
UF10	90.0	10.0	4,253	14.5	92.0	610
UF12	88.0	12.0	4,047	14.1	92.7	630

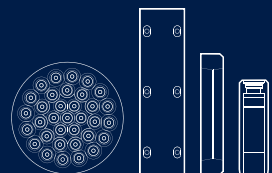
Wear-Resistant Grade

Grade	Composition		TRS Kpsi/ (N/mm²)	Density (g/cm³)	Hardness (HRA)	Compressive Strength (kgf/mm²)
	WC	Co				
K10	94.0	6.0	2,350	14.9	92.8	610
K20	94.0	6.0	2,590	15.0	92.0	530
K30	91.0	9.0	2,926	14.7	90.6	500
K40	89.0	11.0	3,350	14.4	89.5	400
K45	87.0	13.0	3,500	14.2	88.5	410
D20	88.0	12.0	3,360	14.3	90.0	430
DX5	84.0	16.0	3,640	13.9	87.5	410
T20S	80.0	20.0	2,900	13.5	84.0	390
T25S	75.0	25.0	2,900	13.0	83.7	370
T30S	70.0	30.0	2,800	12.7	81.0	350

CARBIDE WEAR PARTS

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