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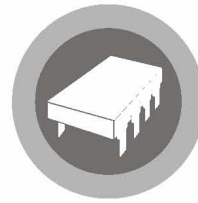
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Rev. No. S22C-3070-51C-92

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[Precision Tools]



## Vitrified Bond Wheel



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## DESSAU International

### ■ Stone & Construction Tools

### ■ Semi-conductor Tools

### ■ Precision Tools

- Metal Bond Wheel
- Resin Bond Wheel

### -Vitrified Bond Wheel

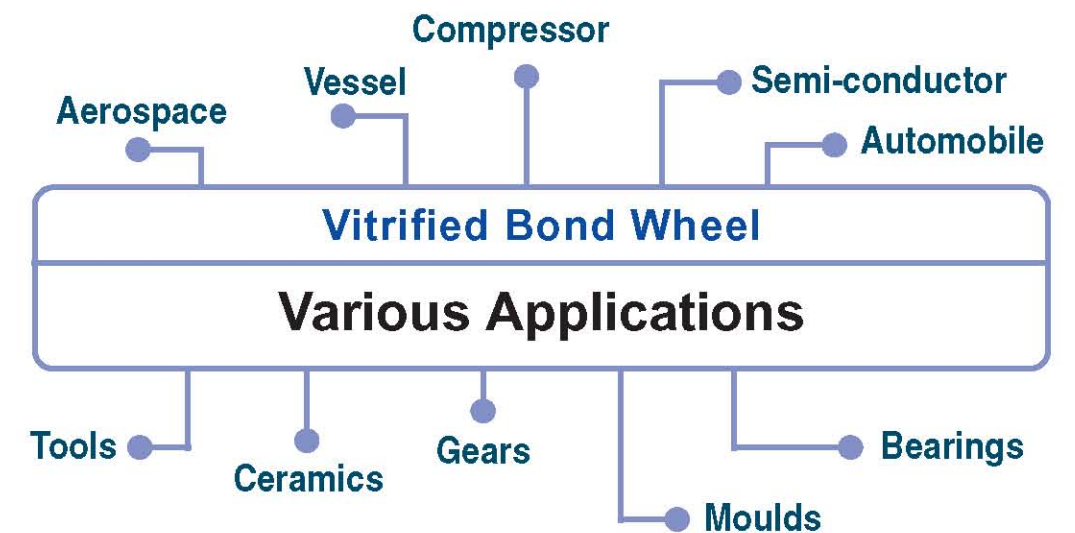
- PCD/PCBN Bite & Insert
- Roller Dresser
- Electroplated Wheel & File



- Designated as "Advanced Technology Center"(ATC)
- Certified "I.S.O 9001:2000" from TÜV Rheinland in Germany

Through its stable manufacturing process, Dessau Diamond provides superior vitrified bond wheels.

Discover their merits resulted from the exquisite combination of mechanical, chemical, and physical features of vitrified bond and CBN/Diamond.



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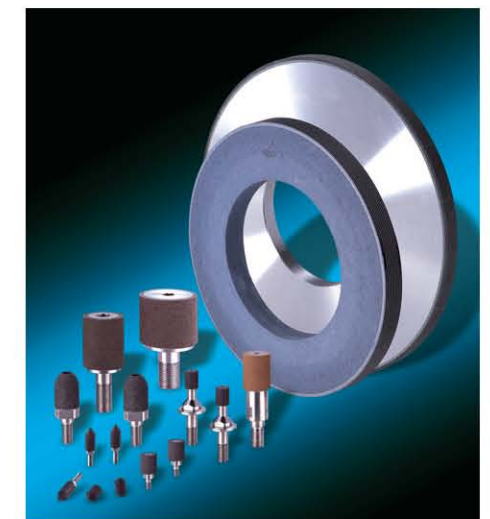
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### Characteristics

- Optimized bond composition
- Selected diamond / CBN
- Carefully managed manufacturing process
- Quality consistency
- Quality control

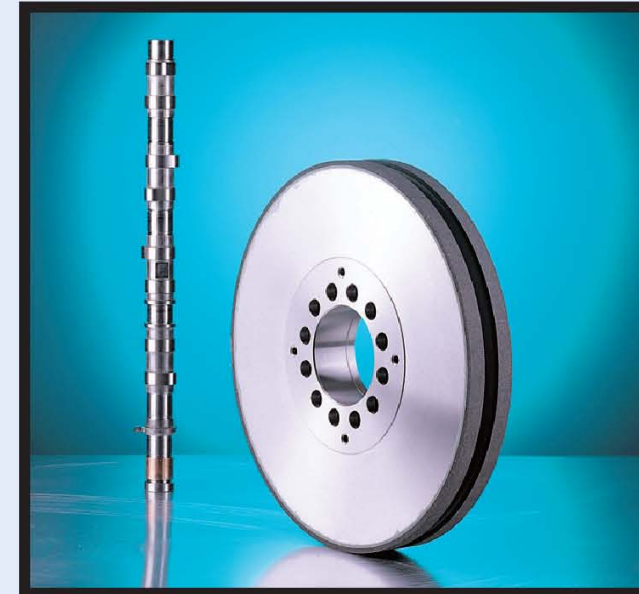
### Advantages

- Long tool life with excellent wear-resistance.
- Improved performance with superior heat-resistance.
- Chemical stability with any type of coolant.
- Superior material removal rate.

### Applications

- **Cylindrical grinding**  
(Cam shaft, Crank shaft, Bearing, Gear shaft and etc.)
- **Centerless grinding**  
(Tapered roller bearing, Cylinder, Engine valve and etc.)
- **Inner race grinding**  
(Inner and outer bearing, Compressor, Injection nozzle, C.V joint gear, LM guide)
- **Tool grinding**  
(PCD / PCBN, Super hardened metal, Ceramic)
- **Super finishing**  
(Small diameter shaft, Inner and outer bearing)

## Cam Shaft Grinding



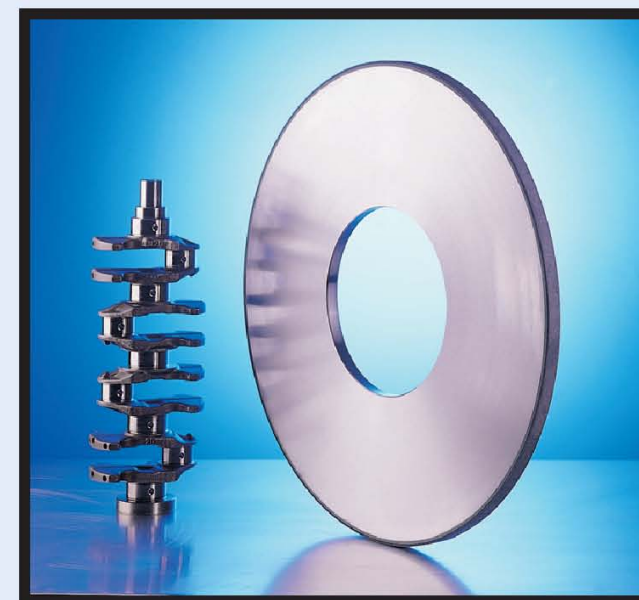
### Application

- Cam lobe grinding.
- Journal grinding.

Item No	Type	Description
10568	1A1	250X19X3X4X152.4
10271	1A1	300X19X5X3X152.4
10273	1A1	300X28X4X4X152.4
10666	1A1	350X18X3X4X152.4
10277	1A1	350X19X5X3X152.4
10278	1A1	350X20X3X4X152.4
10554	1A1	400X21X3X4X203.2
10867	1A1	400X35X3X4X203.2

\* Custom-made is possible.

## Crank Shaft Grinding



### Application

- Pin grinding.
- Journal grinding.

Item No	Type	Description
10956	3A1	550X33X26.2X6X2X30
100210	1L1	554X48X20.5X5X3X50
100211	1L1	554X48X21X5X3X50
100147	14A1	600X35X22.32X5X3X132
10321	1A1	650X20X3X4X254
10655	14A1	650X38.6X18X3X4X254

\* Custom-made is possible.



### C.V Joint Grinding



#### Application

- Inner and outer ball track grinding.
- Cage grinding.

Item No	Type	Description
10703	DW	11X13X2.75XM4X28
10139	DW	12X13X3XM4X28
10727	DW	14.4X26X4.7XM6X49
10734	DW	15.2X27X4.6XM6X50
10827	DW	16X27.4X5XM6X50.4
10699	DW	17.6X28.2X5.8XM8X51.2
10735	DW	18.4X28.5X6.2XM8X51.5
10700	DW	19.2X29X6.6XM8X52

\* Custom-made is possible.

### Bearing Grinding



#### Application

- Inner and outer race grinding.

Item No	Type	Description
10887	DW	6.3X8X1.15XM4X21
10055	DW	9.7X11X1.85XM8X52
100051	DW	15.5X16X2.25XM9X58
10104	DW	25X14X5.5XM22X100
10251	DW	35X28X3XM16X65
10150	DW	45X25X2.7XM22X73
10935	DW	25X4.3X5.5XM10X64(R2.25)
10805	DW	35X9X5.5XM22X95.1(R5.05)

\* Custom-made is possible.

### Compressor Grinding



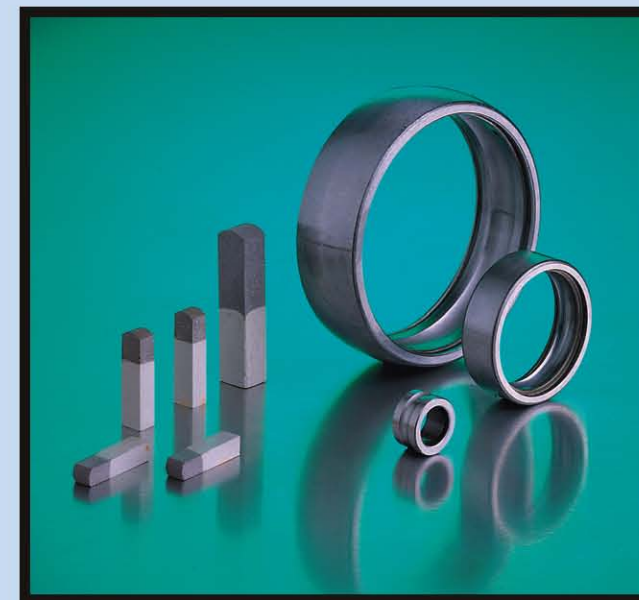
#### Application

- Cylinder grinding.
- Main bearing grinding.
- Sub bearing grinding.
- Cam shaft grinding.

Item No	Type	Description
10624	DW	12X16X2XM6X37
10180	DW	19X30X3.5XM16X99.5
10045	DW	32X36X5XM12X69
10034	DW	37.5X36X3.5XM16X69
10263	DW	42.5X42X3.5XM16X75
10384	1L1	405X97X4X3X228.6
10369	1L1	455X75X3X7X65X304.8
10311	1A1	510X30X3X4X228.6

\* Custom-made is possible.

### Super Finishing



#### Application

- Inner diameter polishing.
- Outer diameter polishing.
- Small diameter polishing.

Item No	Type	Description
10971	HMF	4X19X3.5X(R3)X8
10970	HMF	5X17X3.5X(R4)X7
100061	HMF	7X6.5X15X35(R4.5)
100002	HMF	19X40X10(5)X(R19)X10
100041	HMF	8X10X20X40
100189	HMF	14X12X7X40
10701	HMF	20X3.2X2.5
100135	HMF	60X10X3X50

\* Custom-made is possible.



## Centerless Grinding



### Application

- Compressor cam shaft grinding.
- Small diameter shaft grinding.

Item No	Type	Description
100232	1A1 CENTERLESS	305X105X5X180
10383	1L1	405X95X3X4X228.6
10384	1L1	405X97X4X3X228.6
10369	1L1	455X75X3X7X65X304.8

\* Custom-made is possible.

## Industrial Grinding



### Application

- Injection nozzle grinding.
- Rocker Arm grinding.
- Con-rod grinding.
- Mould grinding.
- Gear grinding.
- Slot grinding.
- Lapping.
- Jig grinding.

Item No	Type	Description
10114	DW	3.8X8.8X60XM2X15.3
10197	DW	4X4X0.95XM2X11.5
10068	DW	4.8X7.8X0.9XM2X13
10888	DW	5.6X3.5X1.3XM4X16
10243	DW	5.8X6X1.4XM3X13
10223	DW	6.8X11.25X1.9XM3X19.25
10069	DW	8.2X8X1.85XM4X34.5
10035	DW	29X6.35X3.5X13X25.5

\* Custom-made is possible.

## Tool Grinding



### Application

- PCD grinding.
- PCBN grinding.
- Cermet grinding.
- Ceramic grinding.

Item No	Type	Description
10445	6A2	125X50X3X5X10X40
10849	6A2	125X50X5X5X10X40
10452	6A2	125X50X10X5X10X40
10405	6A2	125X50X15X5X10X40
10391	6A2	150X40X3.5X5X10X40
10392	6A2	150X45X10X8X10X40
10520	6A2	150X40X15X8X10X40
100194	6A2	150X45X20X8X10X40

\* Custom-made is possible.

## Dressing Information

Dresser	Motion	Dressing Resistance	Surface Roughness	Dressing Time	Life Time
Single Point Forming	Linear	○	○	●	○
Multi-Point Bond	Linear	⊙	○	⊙	⊙
Plunge-type Roller Dresser	Forming	●	○	○	●
Traverse-type Roller Dresser	Linear Forming	○	○	○	●
Cup-type Roller Dresser	Linear	⊙	⊙	○	●

● : Excellent   ⊙ : Good   ○ : Normal



## Standard Marking of Vitrified Bond Wheel

SD	230	N	150	V
Type of Abrasive	Grit Size	Grade of Hardness	Concentration	Vitrified Bond
SD - SYNTHETIC DIAMOND	#60/80 ~ #60000	J SOFT	50-12.5 vol%	VU
CB - CBN		L	75-18.25 vol%	V5
		M	100-25 vol%	VB
		N NORMAL	125-31.25 vol%	VD
		P	150-37.5 vol%	VO
		R	175-43.25 vol%	VH
		S HARD	200-50 vol%	V3
				VC
				VF

## Grit Size & Surface Roughness

Grit Size(μm) ÷ 15,000/Mesh Size

Surface Roughness Rmax(Ry) ÷ Grit Size(μm) / X  
(X=50) : HISS (X=25) : Steel Alloy (X=15) : Cast Iron

Mesh Table		Conversion Table of Surface Roughness					
US (JIS) MESH	FEFA (μm )	Ra max. (μm )	Ra (μm )	Rrms (μm )	Rz (μm )	Rrms (μin)	
#30/40	D602	0.1	0.02	0.02	0.1	1	
#40/50	D427	0.2	0.03	0.04	0.2	2	
#50/60	D301	0.3	0.05	0.06	0.3	3	
#60/80	D252	0.4	0.07	0.08	0.4	4	
#80/100	D181	0.5	0.09	0.10	0.5	5	
#100/120	D151	0.6	0.10	0.11	0.5	6	
#120/140	D126	0.7	0.12	0.13	0.7	7	
#140/170	D107	0.8	0.14	0.15	0.7	8	
#170/200	D91	0.9	0.15	0.17	0.8	9	
#200/230	D76	1.0	0.17	0.19	0.9	10	
#230/270	D64	1.2	0.20	0.23	1.1	12	
#270/325	D54	1.4	0.24	0.30	1.3	14	
#325/400	D46	1.6	0.27	0.30	1.4	16	
#400/500	40~60	1.8	0.31	0.34	1.6	18	
#500	30~40	2.0	0.34	0.38	1.8	20	
#600	22~36	2.4	0.41	0.46	2.2	24	
#800	20~30	2.8	0.48	0.53	2.5	28	
#1000	15~25	3.2	0.54	0.61	2.8	32	
#1200	10~20	3.6	0.61	0.69	3.2	36	
#1500	8~16	4.0	0.68	0.76	3.6	40	
#1800	6~12	4.5	0.77	0.86	4.1	45	
#2000	5~10	5.0	0.85	0.96	4.5	50	
#3000	4~8	5.5	0.94	1.05	5.0	55	
#5000	3~6	6.0	1.02	1.14	5.4	60	
#8000	2~4	7.0	1.19	1.33	6.3	70	
#12000	1~3	8.0	1.36	1.52	7.2	80	
#14000	0~2	9.0	1.53	1.71	8.1	90	
#28000	0~1	10.0	.70	1.90	9.0	100	
#60000	0~0.5						

Ra(μm )	50	25	12.5	6.3	3.2	1.6	0.8	0.4	0.2	0.1	0.05	0.025	0.012
Ra(μin)	2000	1000	500	250	125	63	32	16	8	4	2	1	0.5

## Inquiry Sheet

<b>Customer</b>				
<b>Date :</b>				
<b>Company Name :</b>				
<b>Contact Person :</b>				
Tel :		Fax :		
E-mail :				
<b>A. Wheel</b>				
Type*		Dimension*		
Grit Size*		Bond	Concentration	
<b>B. Work Piece</b>				
Name of Part				
Material*				
Size				
Hardness		Stock Removal		
Surface Roughness*		Required Tolerance		
Dressing Method*		Dressing Interval*		
<b>C. Machine Condition</b>				
Type / Model				
Spindle Capacity				
Grinding Mode		Coolant		
R.P.M		Peripheral Speed		
Feed Rate		Depth of Cut		
<b>Other Information or Comment</b> (please do not hesitate to attach additional sheets or drawings if necessary.)				

\*Essential Information.