



DIAMOND DRESSERS

INNOVATOR IN TECHNOLOGY





DIAMOND DRESSERS
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SDD (Single-point Diamond Dressers)

Manufactured by sintering a selected diamond crystal with metal matrix into a steel shank.

FDD (Forming Diamond Dressers)

Manufactured by shaping a selected high-quality diamond.

MDD (Multi-point Diamond Dressers)

Two or more selected diamonds are set in metal matrix.

IDD (Impregnated Diamond Dressers)

Manufactured by sintering selected diamond particles with metal matrix.

PCD dressers

Manufactured by brazing Poly-crystalline diamonds.



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(Non-patterned IDD / Patterned IDD)	
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(Burnishing tools / PCD / Contact gauges)	

Applications	Diamond dressers
- Used for straight type conventional abrasive wheels. - Used for simple profile, thread and gear grinding abrasive wheels.	SDD, IDD
- Used for straight type and conventional abrasive profile wheels. - Able to dress complex forms and profiles with precision.	FDD, MDD
- Ideal for dressing larger and wider conventional abrasive wheels. - Used for dressing conventional surface and center-less abrasive wheels.	MDD, IDD
Used for dressing complex forms and profiles.	PCD dressers

Expression of DIPROTEX diamond dressers



Materials

Synthetic diamonds



F: MONO CRYSTAL

Almost same property as natural diamond
Applications : SDD, FDD



G: CVD (Chemical Vapor Deposition)

Applications : SDD, FDD, MDD



H: PCD

Applications : PCD dresser

Natural diamonds



A: OCTAHEDRON

Point angle 90 degree / Applications :
SDD, Natural diamond-MDD



B: DODECAHEDRON

Point angle 120 degree / Applications :
SDD, Natural diamond-MDD



C: ELONGATED

Oblong shape
Applications : FDD cone type



D: MACCLE

Triangle shape
Applications : FDD chisel type



E: SHAPE

Round, Flat shape
Applications : FDD chisel type

Comparison chart by material

Property	Natural Diamond	Mono Crystal	CVD Diamond	PCD	WC (K10)
Thermal conductivity (W/mK)	2000	2000	1000	560	110
Hardness (GPa)	50~100	50~100	80~100	50	18
Toughness (MPa·m ^{1/2})	3.4	3.4	5~6	8~9	10.5
Tensile strength (Gpa)	1000~3000	1000~3000	400~800	1260	-
Compressive strength (Gpa)	9	9	16	7.6	6.1
TRS (Gpa)	2.9	2.9	1.3	1.2	2.4

Recommended diamond dresser by wheel shape

Straight



SDD, MDD, IDD

Tapered



SDD, MDD, IDD

Convex



SDD, FDD, MDD

Concave



FDD, MDD

Angled



FDD, MDD

Multi-angled



FDD, MDD

DIAMOND DRESSER

SDD

Single-point
Diamond Dresser



Single-point diamond dressers :

Single-point diamond dressers are versatile and economical to dress straight type conventional abrasive wheels. Customers can choose diamond carat and materials dependent upon working conditions such as wheels size, wheel width, depth of cut, etc.

Recommended Depth of Cut :

Wheel grit size 20~60 : 0.025 mm ~ 0.05 mm

Wheel grit size 80~140 : 0.015 mm ~ 0.025

Wheel grit size 160~200 : 0.01 mm ~ 0.015

Recommended Diamond Carat :

Wheel Diameter 100~150 : 1/7 ct

Wheel Diameter 175~250 : 1/5 ct

Wheel Diameter 300~350 : 1/4 ct

Wheel Diameter 350~400 : 1/3 ct

Wheel Diameter 400~500 : 1/2 ct

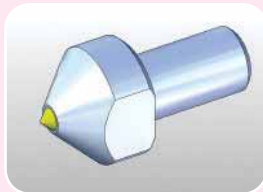
Wheel Diameter 500~600 : 3/4 ct

Wheel Diameter 600~ : 1 ct





Natural



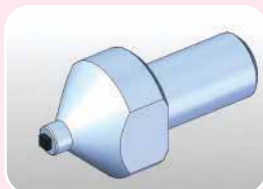
Available diamond :

A (Octahedron)
B (Dodecahedron)

Available carat :

Max 1 ct ~ Min 1/30 ct

Synthetic



Available diamond :

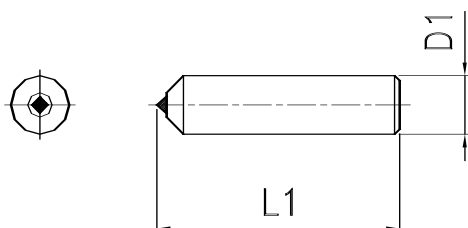
F (Mono Crystal)
G (CVD)

Available size :

0.6 mm X 0.6 mm X 3 mm
0.8 mm X 0.8 mm X 3 mm
1.0 mm X 1.0 mm X 3 mm
1.5 mm X 1.5 mm X 3 mm

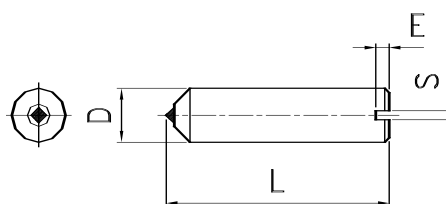
Specifications

● SDD-A01 ●



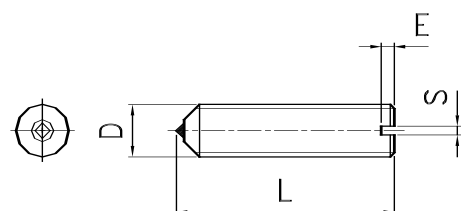
	D1	L1
Standard	12	90

● SDD-A02 ●



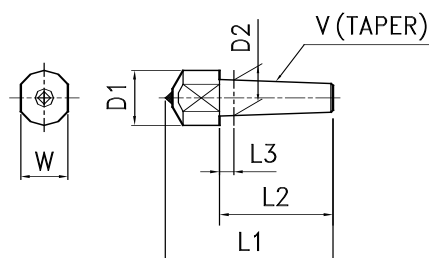
	L	D	S	E
Standard	50	10	1.5	2

● SDD-A03 ●



	Pich	L	S	E
Standard	M8X1.0	16	1.0	2

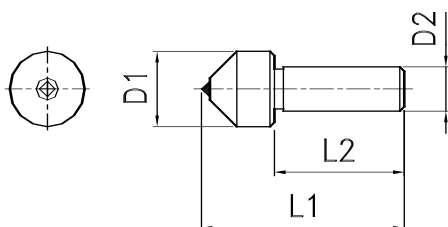
● SDD-A09 ●



	D1	L1	L2	D2	V
Standard	18	60	42	12	MT1

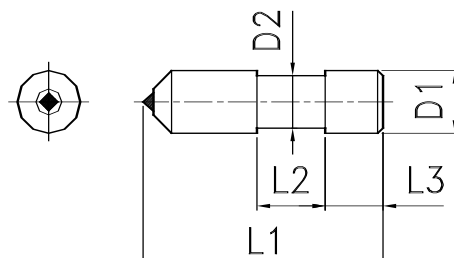
Specifications

● SDD-A10 ●



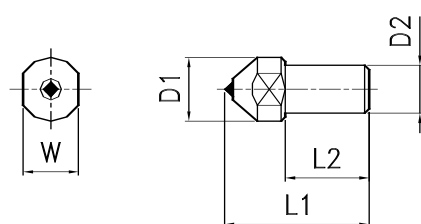
	D1	D2	L1	L2
Standard	12	8	42	25

● SDD-A12 ●



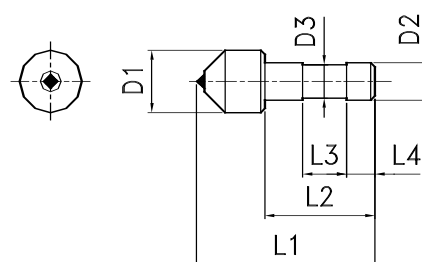
	D1	D2	L1	L2	L3
Standard	10	8	43	22	8

● SDD-A13 ●



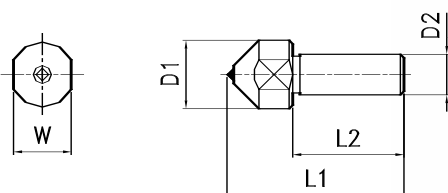
	D1	D2	L1	L2	W
Standard	16	11	37	22	14

● SDD-A14 ●



	D1	D2	D3	L1	L2	L3
Standard	16	11	8	34	19	8

● SDD-A18 ●



	D1	D2	L1	L2	W
Standard	16	11	29	15	14



DIAMOND DRESSER

FDD

Forming
Diamond Dresser



F Forming Diamond Dressers :

Forming diamond dressers are used for dressing specific forms into conventional abrasive wheels requiring longer tool life.

Natural diamonds have very high resistance while they could be easily broken and have unsteady tool life. On the other hand, synthetic diamonds have steady tool life. Generally, the bigger radius of diamonds can ensure longer tool life. However, the much bigger radius can get grinding wheels to be burned because it makes the grinding wheels' grit blunt.

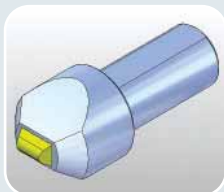
Recommended angle and radius (For chisel dresser)

Rough grinding : R 0.3~0.5, $50^{\circ} \sim 60^{\circ}$

Finish grinding : R 0.1~0.25 , $30^{\circ} \sim 45^{\circ}$



Roof



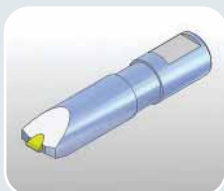
Available diamond :

D (Maccle), E (Shape),
F (Mono crystal),
G (CVD), H (PCD)

Available carat :

Max 3/4 ct ~ Min 1/4 ct

Chisel



Available diamond :

D (Maccle), E (Shape),
F (Mono crystal),
G (CVD)

Available carat :

Max 3/4 ct ~ Min 1/4 ct

Cone



Available diamond :

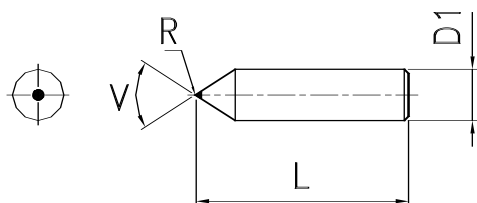
C (Elongated),
G (CVD)

Available carat :

Max 1/2 ct ~ Min 1/4 ct

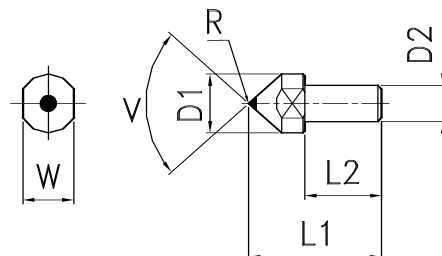
Specifications

● FDD-C01 ●



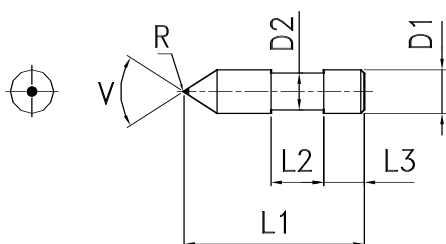
	D1	L	V	R
Standard	11	30	90	0.3

● FDD-C13 ●



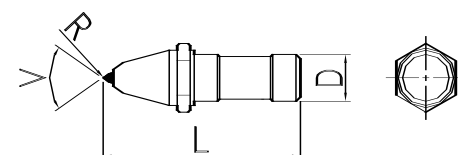
	D1	D2	L1	V	R
Standard	15	11	23	90	0.3

● FDD-C14 ●



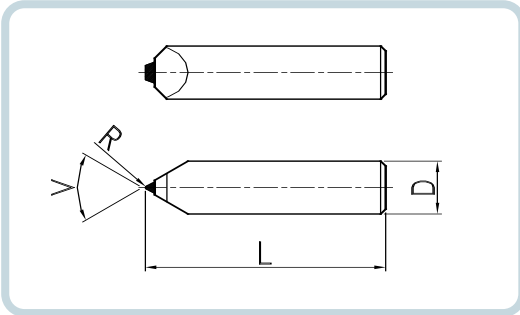
	D1	D2	L1	V	R
Standard	10	8	43	90	0.3

● FDD-C19 ●



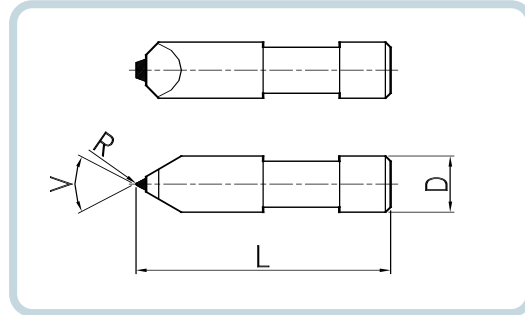
	D	L	V	R
Standard	11	46.5	70	0.3

● FDD-D01 ●



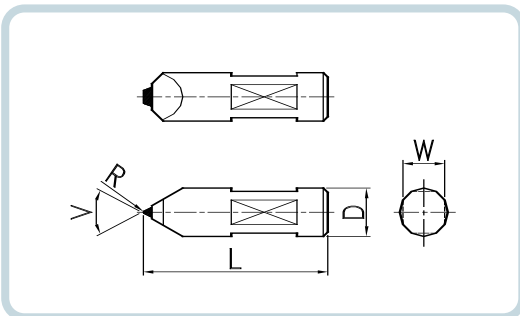
	D	L	V	R
Standard	11	40	55	0.2

● FDD-D12 ●



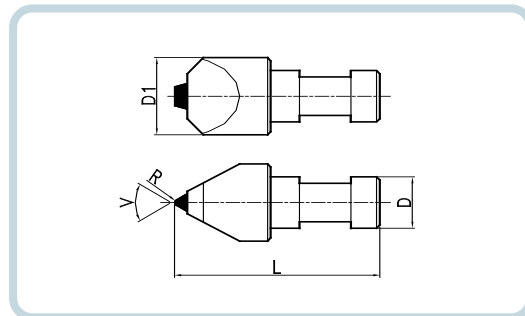
	D	L	V	R
Standard	10	45	55	0.2

● FDD-D05 ●



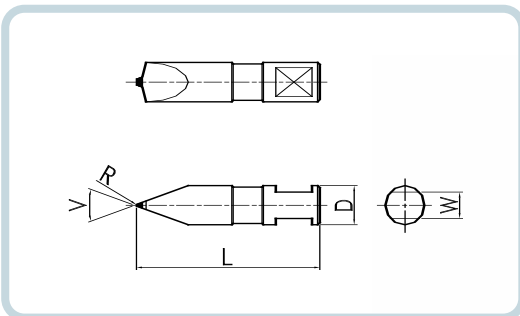
	D	L	w	V	R
Standard	11	45	9	55	0.2

● FDD-D14 ●



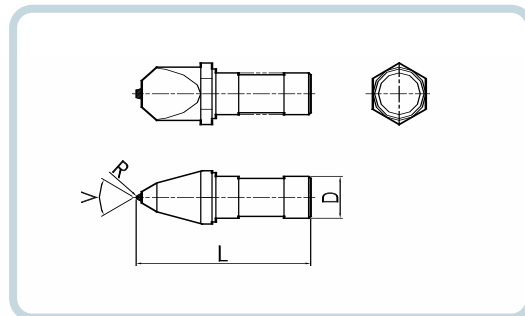
	D1	D	L	V	R
Standard	12	8	32	55	0.2

● FDD-D17 ●



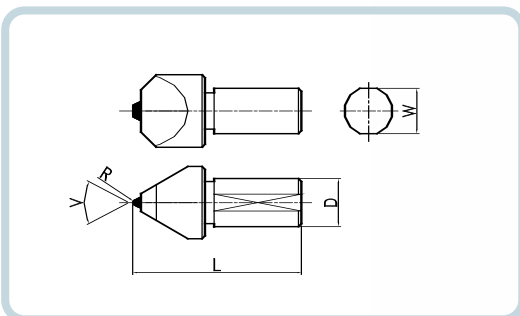
	D	L	W	V	R
Standard	9.5	44.5	6	40	0.25

● FDD-D19 ●



	D	L	V	R
Standard	11	46	60	0.3

● FDD-D20 ●



	D	L	V	R
Standard	8	29	55	0.2

DIAMOND DRESSER

MD D

Multi-point
Diamond Dresser



Multi Diamond Dressers :

Two or more selected diamonds are set in a metal matrix to provide multi diamond points for dressing larger and wider conventional abrasive wheels. Multi-point diamond dressers have two types. One is a general type for dressing straight type conventional abrasive wheels; the other a blade type for dressing larger and conventional abrasive profile wheels at lower cost.

Multi-point diamond dressers using diamonds made by chemical vapor deposition are suited to get high quality surface finish and consistent performance. On the other hand, multi-point diamond dressers made of elongated natural diamonds, which is called "Fliesen tool", have longer tool life.





Natural



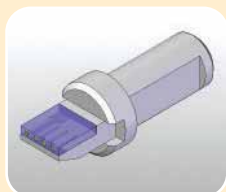
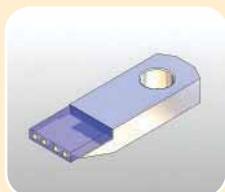
Available diamond :

A (Octahedron),
B (Dodecahedron)

Available carat :

Max 1/3 ct ~ Min 1/30 ct

Blade type



Available size :

CVD 0.4 mm X 0.4 mm X 5 mm

CVD 0.6 mm X 0.6 mm X 5 mm

CVD 0.8 mm X 0.8 mm x 3 mm

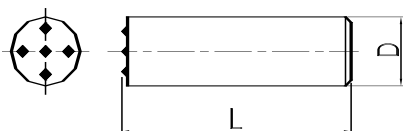
CVD 0.8 mm X 0.8 mm X 6 mm

CVD 1.0 mm X 1.0 mm X 3 mm

Elongated 1/20 ct ~ 1/80 ct

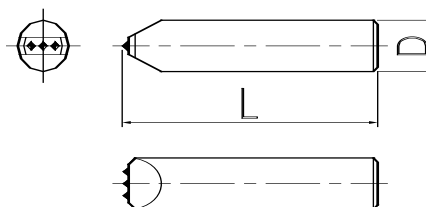
Specifications

● MDD-A01 ●



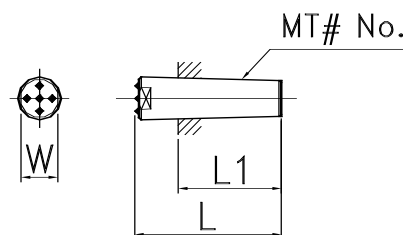
	D	L
Standard	11	40

● MDD-A05 ●



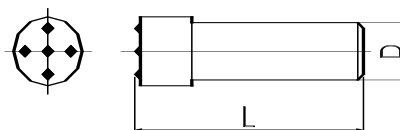
	D	L
Standard	11	40

● MDD-A09 ●



	L	L1	W	Taper
Standard	32	22	8	MT#No.1

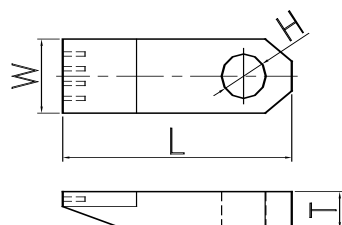
● MDD-A10 ●



	D	L
Standard	11	29

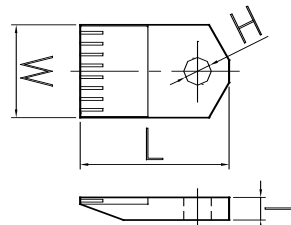
Specifications

● MDD-G11 ●



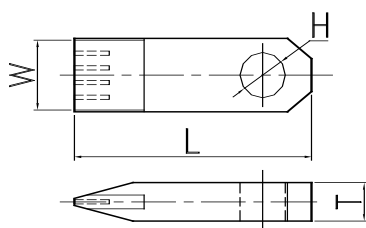
	L	T	W	H
Standard	28	5	10	6.1

● MDD-G12 ●



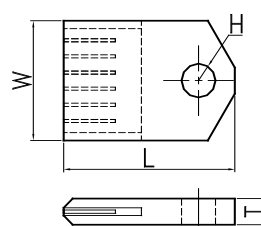
	L	T	W	H
Standard	33	5	20	6.1

● MDD-G13 ●



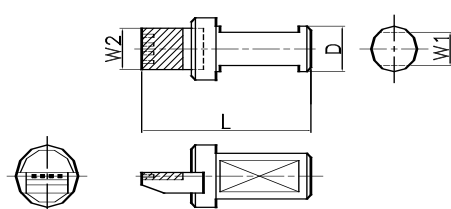
	L	T	W	H
Standard	28	5	10	6.1

● MDD-G14 ●



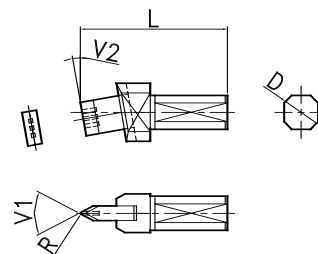
	L	T	W	H
Standard	33	5	20	6.1

● MDD-G21 ●



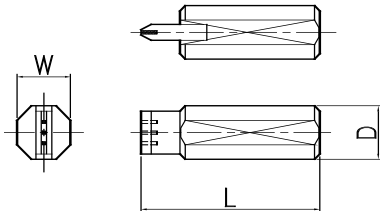
	D	L	W1	W2
Standard	11	41	8	10

● MDD-G22 ●



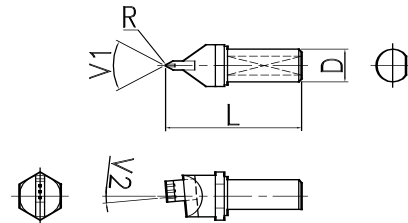
	D	L	V1	V2	R
Standard	8	29	55	10	0.3

● MDD-G23 ●



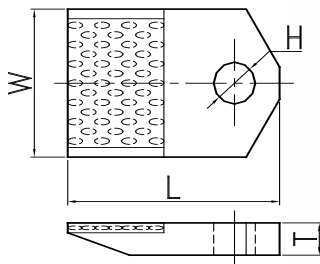
	D	L	W
Standard	11	33	10

● MDD-G24 ●



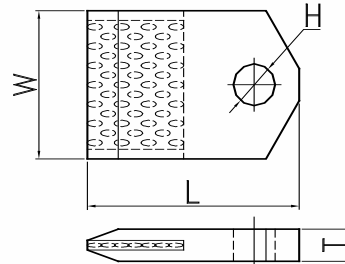
	D	L	V1	V2	R
Standard	11	46	55	5	0.3

● MDD-C12 ●



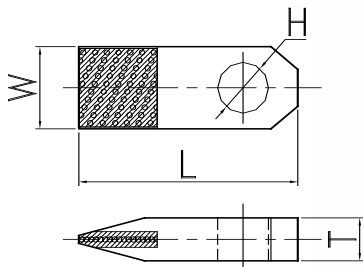
	L	T	W	H
Standard	28	5	20	6.1

● MDD-C14 ●



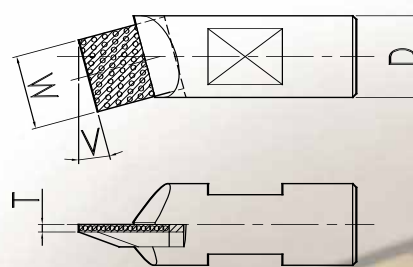
	L	T	W	H
Standard	33	5	20	6.1

● MDD-B13 ●



	L	T	W	H
Standard	28	5	10	10

● MDD-B12 ●



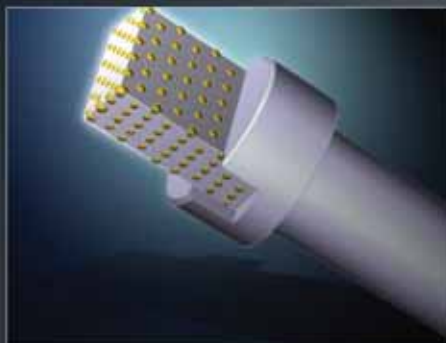
	D	W	V	T
Standard	8	10	15	1.5

DIAMOND DRESSER

IDD

Impregnated
Diamond Dresser

DIPROTEX® TECHNOLOGY



Impregnated Diamond Dressers :

Impregnated diamond dressers have tiny diamond particles bonded in metal matrix. Dressing force is spread across the fine diamonds; impregnated diamond dressers can achieve longer tool life at lower cost.

Randomly distributed impregnated diamond dressers cannot optimally show their performance as required. That is why Diprotex has developed patterned impregnated diamond dressers manufactured with **DIPROTEX®** technology for dressing with precision.

DIPROTEX® IDD

(Patterned Impregnated Diamond Dresser)
Patent no. 10-0428947 / US 6626167

- Suitable for longer tool life and better performance
- Available mesh : # 20 ~ # 60



Impregnated Diamond Dresser

- Used for economical dressing
- Available mesh : #20 ~#140



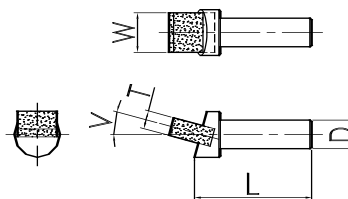
Specifications

● IDD-S01 ●



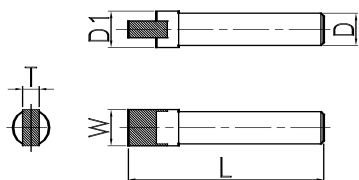
	D	L	W	T
Standard	11	70	13	6

● IDD-S03 ●



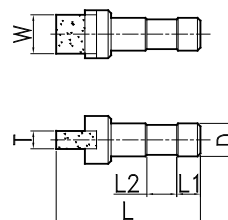
	D	L	W	T	V
Standard	11	38	13	6	15

● IDD-S04 ●



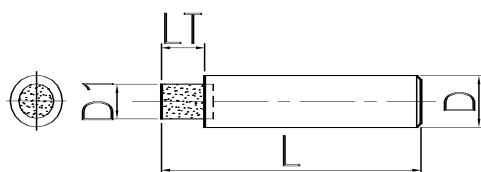
	D	D1	L	W	T
Standard	11	14	70	13	6

● IDD-S05 ●



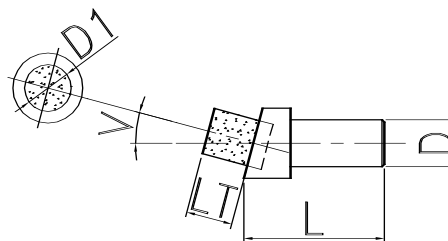
	D	L	L1	L2	W	T
Standard	11	50	7	10	13	6

● IDD-R01 ●



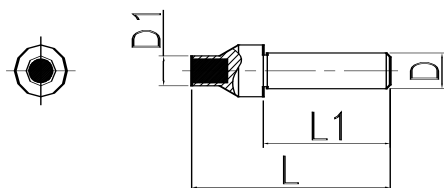
	D	D1	L	LT
Standard	11	9	40	8

● IDD-R03 ●



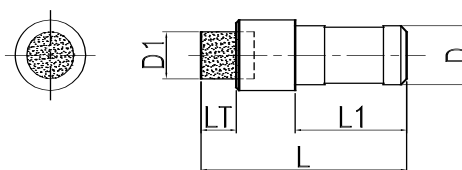
	D	D1	L	LT	V
Standard	11	9	38	8	15

● IDD-R04 ●



	D	D1	L	L1
Standard	11	10	40	24

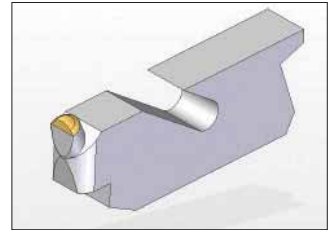
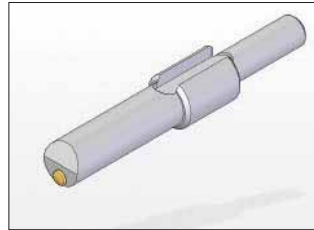
● IDD-R05 ●



	D	D1	L	L1	LT
Standard	11	9	40	24	8

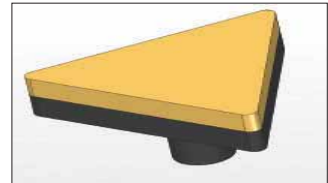
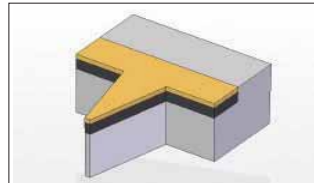
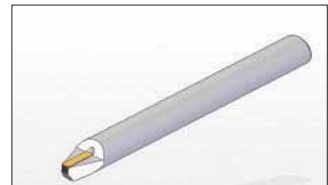
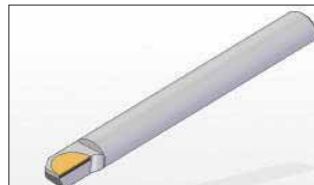
Burnishing tools

Burnishing tools are manufactured by natural or mono crystalline diamonds. The burnishing process is a cold process using proper pressure without removal of the work pieces. The burnishing tools are very useful for metalworking because they help get high quality mirror-like surface finish and meet dimensions as requested. The diamond burnishing tools can ensure longer tool life and good surface finish.



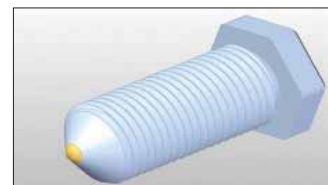
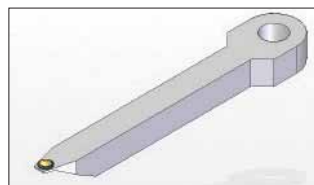
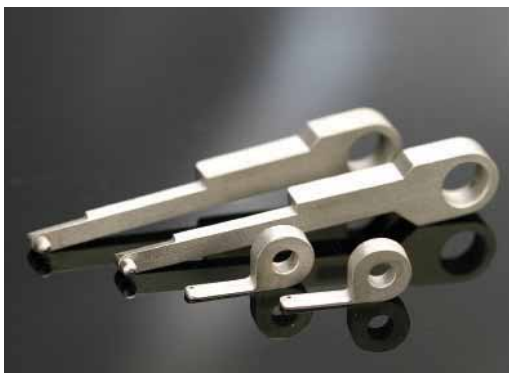
PCD (Poly-crystalline diamond) dressers

PCD dressers are cost-effective alternative in dressing conventional abrasive profile wheels. The PCD is easier to get desired shapes than the other diamond materials. As a result, PCD dressers can dress grinding wheels with complex profiles. The relatively lower tool life can be compensated by lower price.



Contact gauges

Contact gauges with natural diamonds or poly-crystalline diamonds have almost 100 times longer tool life than tungsten carbides or high-speed steel. The diamond contact gauges can ensure highly accurate measurement with ultra wear resistance.







DIAMOND DRESSERS