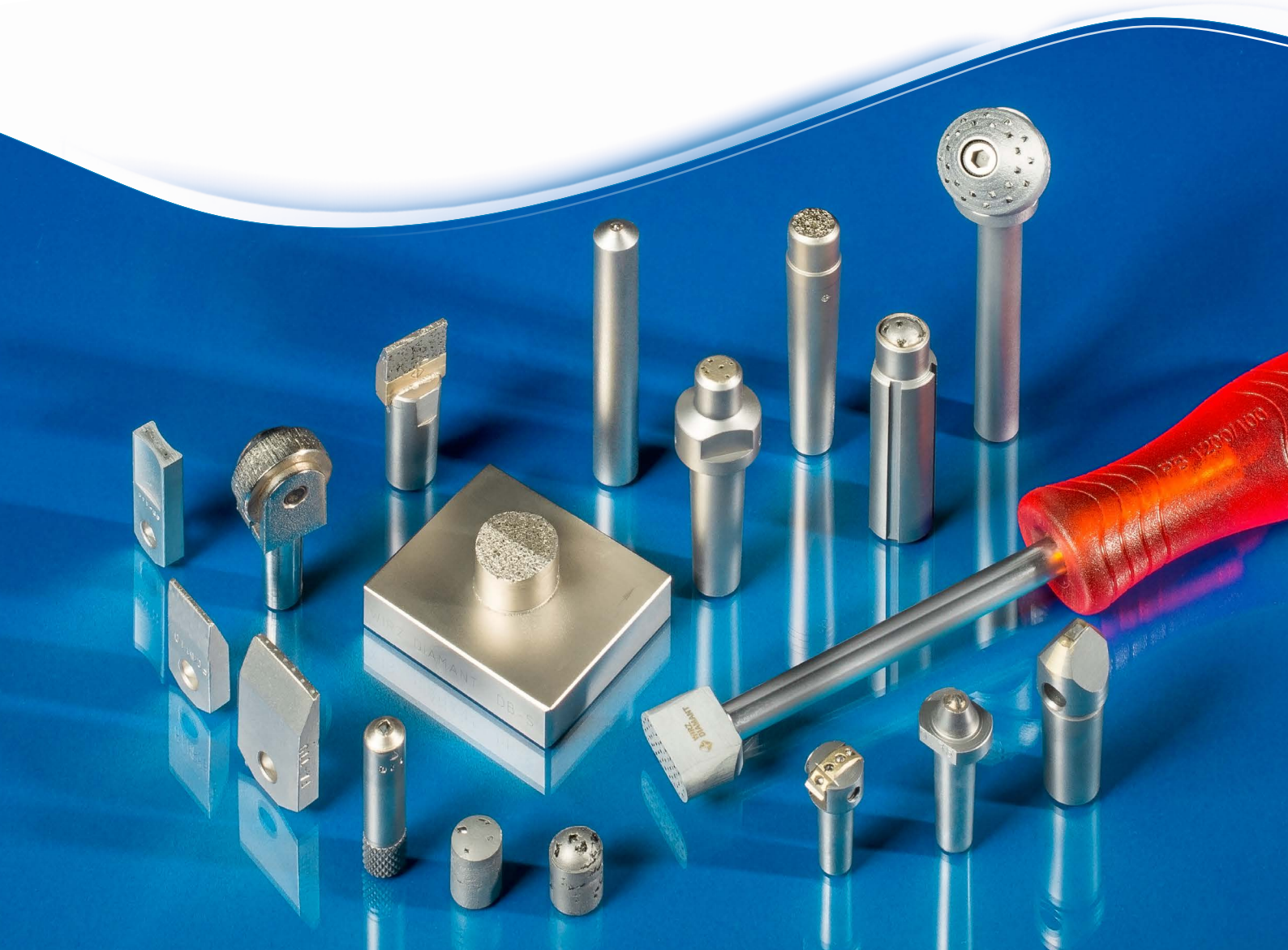
WIRZ DIAMANT

Diamond dressing tools



Diamond dressing tools

Introduction
Diamond dressing tools

Advanced, high-performance grinding technology is vital to the manufacturing industry today.

The demands on the grinding process are becoming ever tougher, both in economic terms and in dimensional and geometrical tolerances and surface quality.

This is where dressing steps in.

Dressing tools for silicon carbide and aluminium oxide wheels must fulfill the following tasks:

1. «True» the wheel to eliminate run-out and correct geometric shape.
2. Restore the required effective roughness of the wheel.
3. Keep the wheel «open» for high grinding efficiency.

The dressing process exposes a new sharp cutting layer on the wheel. The dressing tool is clamped and guided by the machine, and relative dresser / wheel movements (infeed and transverse feed) are executed by the dressing tool or the wheel. The path followed by the dressing tool determines the geometry of the grinding wheel.

The diamond´s superlative hardness and wear resistance makes it the ideal material for dressing tools.

The scope of this catalogue is to discuss diamond dressing tools. The catalogue encompasses, in detail, the technology of these tools. It will facilitate in the proper selection and ordering, as well as in the economical application of these tools.

We have the capability of manufacturing custom dressing tools to customer's specifications. Extensive emphasis is placed on «multi point» dressing tools because of their economic and technological superiority; multi point dressing tools in recent years have become increasingly tool of choice.

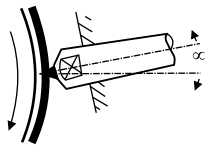
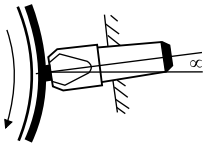
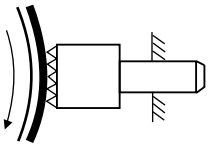
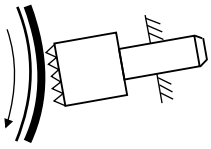
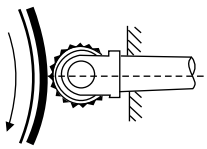
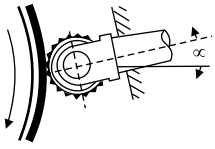
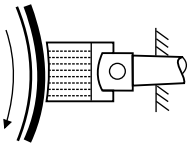
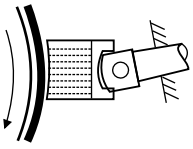
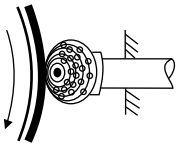
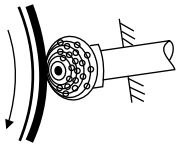
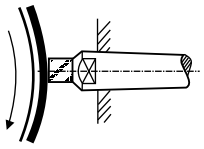
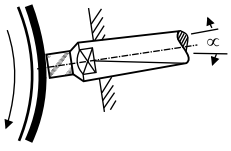
Guidelines for use

Wheel speed for dressing and truing: normal grinding speed. The cooling system contributes to the increased service life of the diamond dressing tool and is frequently the basic prerequisite for ensuring that the tool engages correctly with the grinding disc.

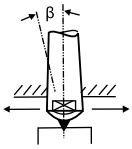
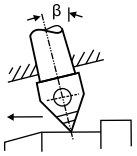
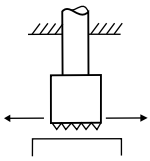
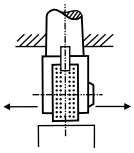
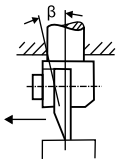
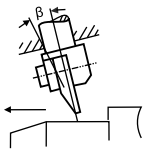
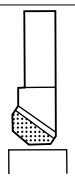
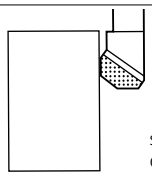
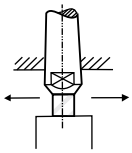
To change the effective roughness of the wheel normally it is best to change transverse feed. Increasing infeed rate has less effect and shortens dressing tool life.

The mounting must be vibration-free, with the clamping length as short as possible.

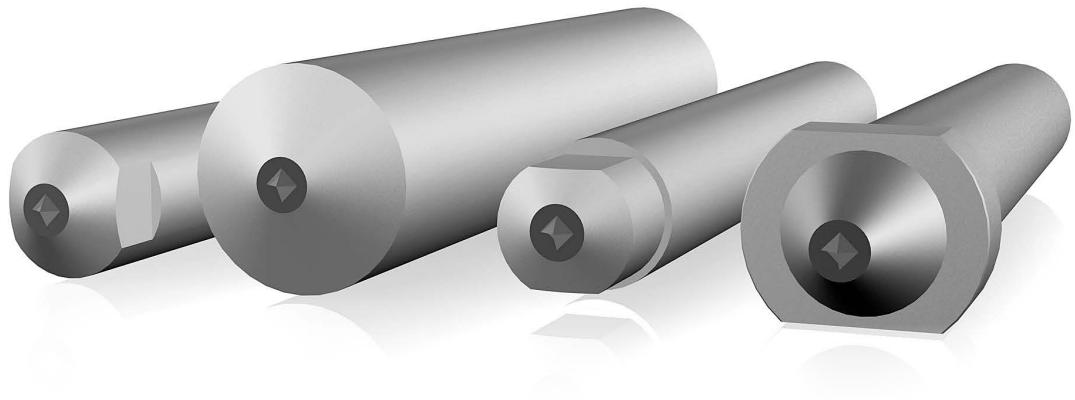
Working positions – Horizontal

Diamond dressing tools	STRAIGHT mounting	INCLINED mounting	
Single point diamond dresser		 5° to max. 15°	
Shaping tools		 5° to max. 15°	
Cluster type diamond dresser			
Multipoint disco type diamond dresser			
Blade type diamond dresser		 Inclination must be compensated by swivelling the blades in the holder possible up to 30°	
Multipoint indexable crown			
Grit impregnated type diamond dresser		 If the holder is used in an inclined position, please state the angle of inclination.	

Working positions – Vertical

	STRAIGHT mounting	PROFILE forming and truing	Infeed in mm	Traverse feed (usual) mm/rev	Other information
	 Vertical or inclined up to max. 15° , relating to direction of rotation		0.01 - 0.03	0.05 - 0.5	When sharpness diminishes rotate the diamond dresser about 60° around its own axis.
		 inclination from 30° to max. 45°	0.01 - 0.02	0.03 - 0.10	Please follow instructions of tool maker and machine manufacturer.
	 vertical		0.01 - 0.05	0.3 - 1.0	When using new dressing tools a break-in-period is desirable with increased infeed so that the diamond tool adopts to the diameter of the grinding wheel.
	 vertical		0.01 - 0.05	0.03 - 1.0	
	 Vertical or inclined up to max. 30°		0.01 - 0.03	0.05 - 0.5	For straight dressing, slightly diagonal positioning is possible and provides finer surface quality
		 side dressing	0.01 - 0.05	0.3 - 1.0	Rotate the head at regular intervals.
	 vertical		0.005 - 0.03	0.05 - 0.5	When using new dressing tools a break-in-period is desirable with increased infeed so that the diamond tool adopts to the diameter of the grinding wheel.

Single point throw-away diamond dressers



Throw-away type diamond dressers are made of small selected crystal shaped or octahedral diamonds, mounted in a matrix. Only one cutting edge is presented to the grinding wheel.

Diamonds for throw-away type diamond dressers are selected for their structural strength, degree of sharpness and lack of detrimental flaws. The proper selection of size and quality appropriate for a given application requires qualified and experienced judgement.

As the name suggests it is really a throw - away dresser that means no maintenance, and no re-setting of the diamond is required.

They are used for truing and dressing small and medium sized wheels. For larger wheels with small widths they are used only in profile dressing applications.

These tools are not suited to dress wheels with grit size coarser than 60 mesh.

For your reference we have given a few of the standard tools as per European & American specifications, however it can be manufactured as per your specifications.

Standard forms

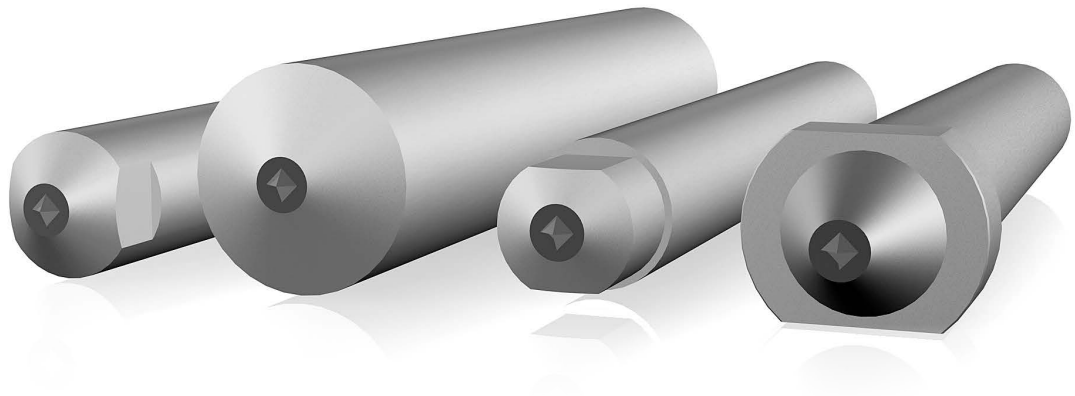
Cylindrical

Holder dimensions	Carat	Article No.
Ø 3.15 x 25	rough	EW04 03.15x25
Ø 3.50 x 12	rough	EW05 03.50x12
Ø 4.0 x 20	rough 1/10 Carat	EW10 04.00x20
Ø 5.0 x 20	rough 1/10 Carat	EW10 05.00x20
Ø 5.0 x 20	rough 1/4 Carat	EW25 05.00x20
Ø 5.0 x 40	rough 1/4 Carat	EW25 05.00x40
Ø 6.0 x 25	rough 1/10 Carat	EW10 06.00x25
Ø 6.0 x 25	rough 1/4 Carat	EW25 06.00x25
Ø 8.0 x 35	rough 1/10 Carat	EW10 08.00x35
Ø 8.0 x 80	rough 1/10 Carat	EW10 08.00x80
Ø 8.0 x 80	rough 1/4 Carat	EW25 08.00x80
Ø 8.0 x 80	rough 1/3 Carat	EW33 08.00x80
Ø 10 x 30	rough 1/10 Carat	EW10 10.00x30
Ø 10 x 80	rough 1/10 Carat	EW10 10.00x80
Ø 10.0 x 80	rough 1/4 Carat	EW25 10.00x80
Ø 10.0 x 80	rough 1/3 Carat	EW33 10.00x80
Ø 11.0 x 30	rough 1/10 Carat	EW10 11.00x30
Ø 12.0 x 80	rough 1/4 Carat	EW25 12.00x80

Conical

Holder dimensions	Carat	Article No.
MKO A Din 1820	rough 1/10 Carat	EW10 MKOA
MKO A Din 1820	rough 1/4 Carat	EW25 MKOA
MKO A Din 1820	rough 1/3 Carat	EW33 MKOA
Tripet 420-19	rough 1/10 Carat	EW10 TRIP
Tripet 420-19	rough 1/4 Carat	EW25 TRIP
Tripet 420-19	rough 1/3 Carat	EW33 TRIP
Voumard 415-3574-4	rough 1/10 Carat	EW10 VOUM
Voumard 415-3574-4	rough 1/4 Carat	EW25 VOUM
Voumard 415-3574-4	rough 1/3 Carat	EW33 VOUM

Single point diamond dressers



Single point «brutted diamond» dressers are made with selected «Congo Rounds» mounted in a matrix. A single cutting edge is presented to the grinding wheel.

Diamonds for single point dressers are selected in accordance with quality and size. Whether a superior, average or commercial quality quality should be used, depends on the grinding finish required, and the machines and working parameters.

We offer three grades namely ECO, STANDARD & SUPER for all diamond sizes, i.e. from 0.25 to 5.00 carat size.

Guideline for single-point diamond dressers:

Considerable care should be taken in mounting the diamond dresser in position. Diamonds are sensitive to shock and impact.

The dresser must be clamped rigidly in place to avoid vibration once dressing begins.

An ample supply of coolant should be applied directly to the diamond point before dressing begins, as the sudden application of coolant to the diamond once it has heated up can cause it to shatter.

The diamond holder should not be set directly on the centre of the grinding wheel, but at an angle of 5°–15° to the direction of rotation ofthe wheel so that it appears to be «trailling».

At normal wheel peripheral speeds dressing rates of approximately 20-25 m/sec can be achieved.

The maximum depth of cut achieved per dressing pass is 0.03 mm or on fine grit wheels, approximately 0.005-0.01 mm.

The cross feed rate is dependent upon grit size and can have a marked influence on the quality of the finish imparted to the grinding wheel surface. The lower the feed rate, the finer the surface finish. We would recommend the following feed rates per revolution of the grinding wheel.

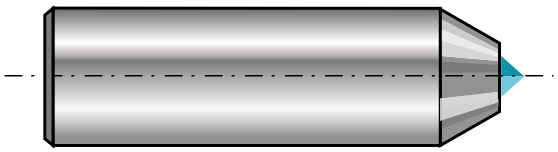
Grinding wheel grit size	Feed rate in mm / rew
30 - 46	0.60 - 0.30
50 - 120	0.30 - 0.10
180 - 320	0.10 - 0.02

Diamond qualities

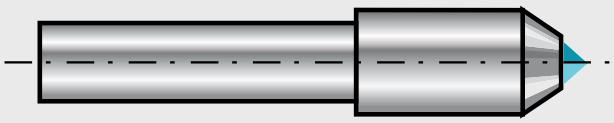
Quality grade	Tips	Form and color	Suitability
SUPER	5 tips	Crystal form = octahedron Color predominantly yellow - white Sharp-edged stone	For fine, high-precision grinding
STANDARD	3 tips	Crystal form = octahedron Color gray - white Predominantly sharp-edged stones	Standard requirements
ECO	1 tip	Crystal form = mixed Color mixed, various inclusions Irregularly shaped stones	For truing with low requirements

Shank dimensions

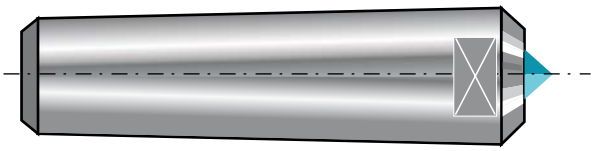
Cylindrical



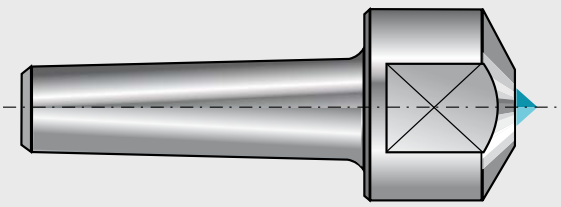
Cylindrical with head



Conical



Tapered with head



Specification of diamond size Instructions for use

Experience has shown that a certain ratio exists between the size of the dressing diamond and the diameter of the disk.

Grinding disk Ø in mm	Diamond weight in carats
- 80	1/5 = 0.15 – 0.24
- 150	1/3 = 0.25 – 0.44
- 200	1/2 = 0.45 – 0.62
- 300	3/4 = 0.63 – 0.87
- 350	1 = 0.88 – 1.24
- 400	1 1/2 = 1.25 – 1.74
- 500	2 = 1.75 – 2.49
over 500	3 = 2.50 – 5.00

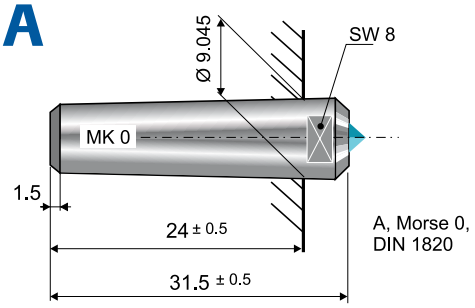
Table for specification of minimal head diameter in the case of monograin diamonds

We would ask you, wherever possible, to keep to the smallest possible shank diameter so as to guarantee adequate heat dissipation and maintain normal diamond wear.

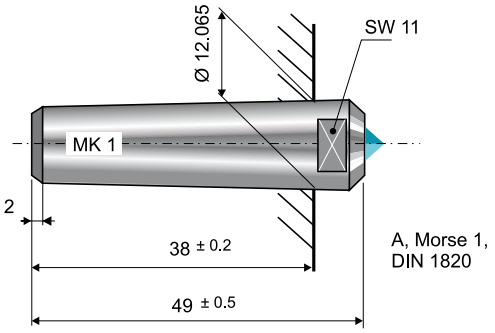
Carat	Ø of drill hole	Minimal Ø of shank
0.05	2.20	3.50
0.10	2.80	4.00
0.15	3.20	4.50
0.20	3.60	5.00
0.25	3.80	5.50
0.30	3.90	6.00
0.35	4.20	6.50
0.40	4.50	7.00
0.45	4.70	7.50
0.50	5.00	8.00
0.55	5.10	8.00
0.60	5.20	8.50
0.65	5.30	8.50
0.70	5.40	9.00
0.75	5.60	9.50
0.80	5.70	10.00
0.90	5.80	10.00
1.00	6.00	10.00
1.10	6.20	10.00
1.25	6.40	11.00
1.50	7.00	12.00
1.75	7.30	12.50
2.00	7.70	13.00
2.25	8.50	14.00
2.50	8.70	15.00
2.75	8.90	15.00
3.00	9.00	16.00

Diamond inserts as per DIN 1820

A

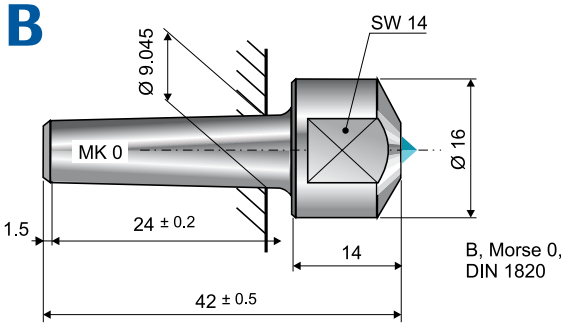


A, Morse 0, DIN 1820

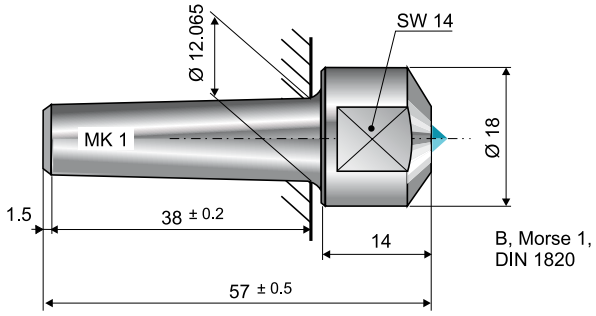


A, Morse 1, DIN 1820

B

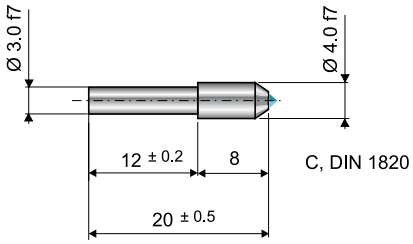


B, Morse 0, DIN 1820



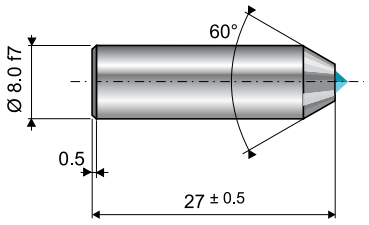
B, Morse 1, DIN 1820

C



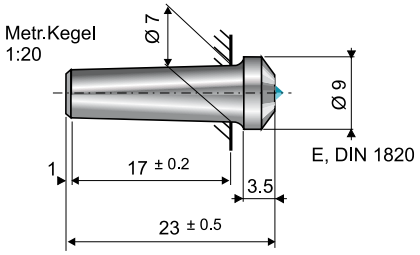
C, DIN 1820

D



D, DIN 1820

E



E, DIN 1820

Shaping tools

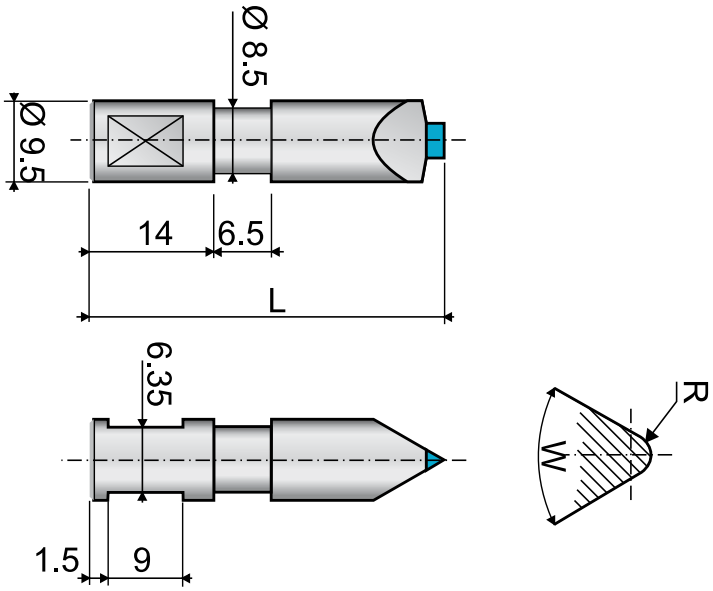
Profiling and copy dressing of grinding wheels makes high demands on profile retention capability and thus on wear resistance of the diamond tool.

Wherever diamond blade type tools cannot meet these requirements due to the specific grinding wheel geometry, precision ground shaping tools are the solution. Shaping tools feature the unique «structure-cut» to ensure optimum tool life, they are manufactured only from the highest grade of natural diamonds and undergo stringent quality control during manufacturing.

Important point to consider

- Choose a diamond with the largest included angle and toughest geometric shape allowed by the profile requirements.
- Use a drag angle, where possible, to maximize cutting edge life.
- Make sure that the tool is rigidly mounted.
- Follow machine manufacturer's instructions and recommendations.

«DIAFORM» profiling diamonds



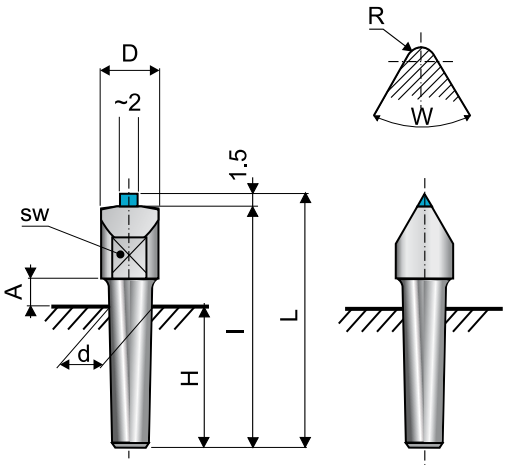
Dimensions			Quality and Article No.		
L	**W**	**R**	**SUPER**	**STANDARD**	**ECO**
S 35mm	60°	Ebauche	DFEXS60Eb	DFSTS60Eb	DFDIS60Eb
S	60°	0.05	DFEXS60050	DFSTS60050	DFDIS60050
S	60°	0.125	DFEXS60125	DFSTS60125	DFDIS60125
S	60°	0.25	DFEXS60250	DFSTS60250	DFDIS60250
S	60°	0.5	DFEXS60500	DFSTS60500	DFDIS60500
S	40°	0.05	DFEXS40050	DFSTS40050	DFDIS40050
S	40°	0.125	DFEXS40125	DFSTS40125	DFDIS40125
S	40°	0.25	DFEXS40250	DFSTS40250	DFDIS40250
S	40°	0.5	DFEXS40500	DFSTS40500	DFDIS40500
L 44.5mm	60°	Ebauche	DFEXL60Eb	DFSTL60Eb	DFDIL60Eb
L	60°	0.05	DFEXL60050	DFSTL60050	DFDIL60050
L	60°	0.125	DFEXL60125	DFSTL60125	DFDIL60125
L	60°	0.25	DFEXL60250	DFSTL60250	DFDIL60250
L	60°	0.5	DFEXL60500	DFSTL60500	DFDIL60500
L	40°	0.05	DFEXL40050	DFSTL40050	DFDIL40050
L	40°	0.125	DFEXL40125	DFSTL40125	DFDIL40125
L	40°	0.25	DFEXL40250	DFSTL40250	DFDIL40250
L	40°	0.5	DFEXL40500	DFSTL40500	DFDIL40500

Various shaping and profiling diamonds

For «Studer» profiling machines

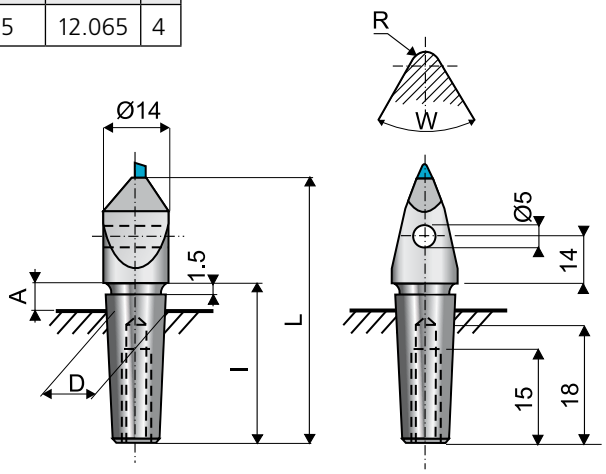
Article No.	D	d	A	H	l	L
83	10	*6	2	18.5	20.5	30
84	13	**9.045	5	25	30	43.5

* As per taper gauge K 54
** As per taper gauge Morse 0

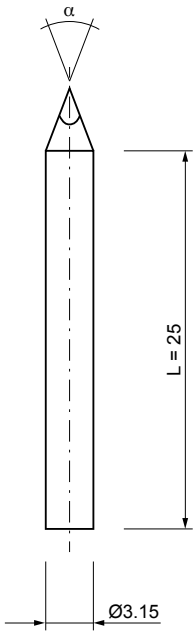


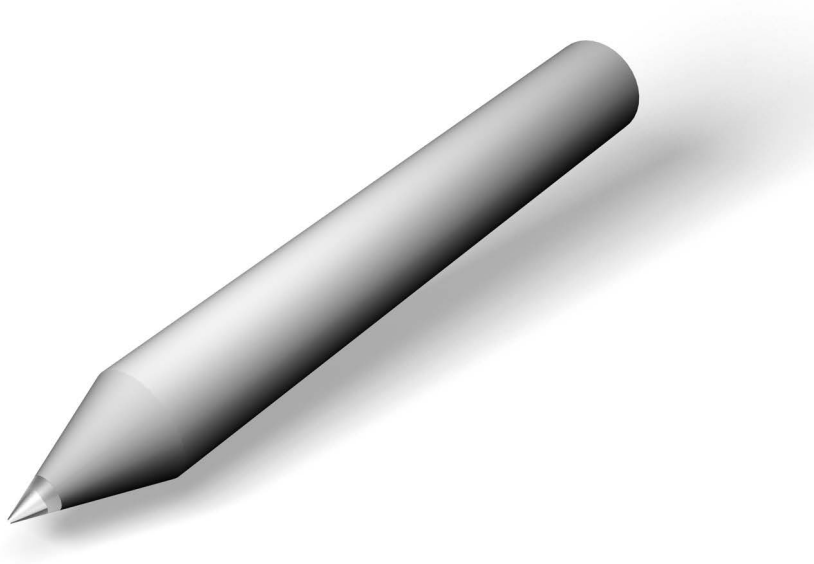
Various profiling diamonds

Article No.	Machine	W	R	L	l	A	D	H
75	Fortuna	45°	0.2 + 0.1	42	24	5	12.065	8
76	Fortuna	55°	0.2 + 0.1	42	24	5	12.065	8
77	Schaudt	70°	0.4	44	30	3	12.17	4
78	Naxos Union	58°	0.5	47	32	5.5	12.065	4



Conical centered dressing diamonds





Article No.	Taper	Diamond ø at the base
KZ600.8-1.0	60°	0.8 – 1.0
KZ601.1-1.3		1.1 – 1.3
KZ601.3-1.5		1.3 – 1.5
KZ601.5-1.8		1.5 – 1.8
KZ750.8-1.0	75°	0.8 – 1.0
KZ751.1-1.3		1.1 – 1.3
KZ751.3-1.5		1.3 – 1.5
KZ751.5-1.8		1.5 – 1.8
KZ900.8-1.0	90°	0.8 – 1.0
KZ901.1-1.3		1.1 – 1.3
KZ901.3-1.5		1.3 – 1.5
KZ901.5-1.8		1.5 – 1.8

Cluster type dressers

Cluster type diamond dressers consist of a number of small natural rough diamonds of good crystal character, set in a geometric patterns in single layer and sintered in to a special wear resistant bond.

The cluster type diamond dresser is ideal for coarse or rough dressing of grinding wheels in sizes up to 80 grit (mainly rough grinding or grinding to eliminate imbalance). The diamonds can be fully utilised without resetting or re-sharpening.

Dressing costs are substantially reduced as the diamonds used in this type of dresser are much smaller in size than single point diamond dressers, so they are much cheaper.

Cluster type diamond dressers give rapid-dressing without scoring and produce a consistent even surface on the grinding wheel. These dressers are resistant to shock and impact.

The dressing face of the cluster type diamond dresser should be set at an angle of 90° to the grinding wheel so that all the diamond points are in contact at the same time.

Depth of cut per stroke of the dresser: 0.01-0.05 mm max.

Feed rate - in mm per revolution:

0.3 -1.5 mm max.

Finer infeeds & smaller cuts will produce higher surface finishes. Normal wheel speeds should be used.

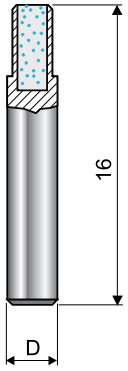
An adequate supply of coolant should be used both before and during the dressing operation, in order to prolong tool life.

Holders for fragmented and multigrain diamonds

For types S8 / IN / M8 / M6 / BR

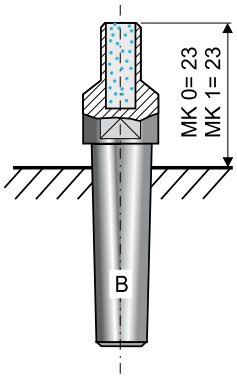
Cylindrical holder

Article No.	Description
HZ625	ø 6 x 25 mm
HZ840	ø 8 x 40 mm
HZ880	ø 8 x 80 mm
HZ1050	ø 10 x 50 mm
HZ10100	ø 10 x 100 mm
HZ1260	ø 12 x 60 mm
HZ12120	ø 12 x 120 mm



Morse taper shank as per DIN 1820

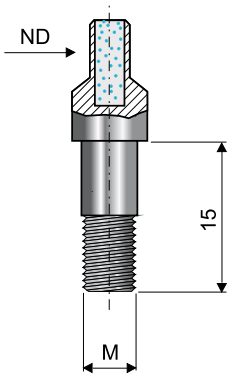
Article No.	Description
HMK0ALG	A, Morse 0
HMK0BLG	B, Morse 0
HMK1ALG	A, Morse 1
HMK1BLG	B, Morse 1
with cooling grooves	plus



with collar

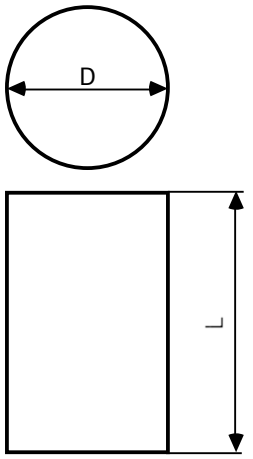
Holder with thread

Article No.	Description
H63M6	ND-63 M6
H64MF6	ND-64 MF6 x 0.75



M = 6
M = 0.75

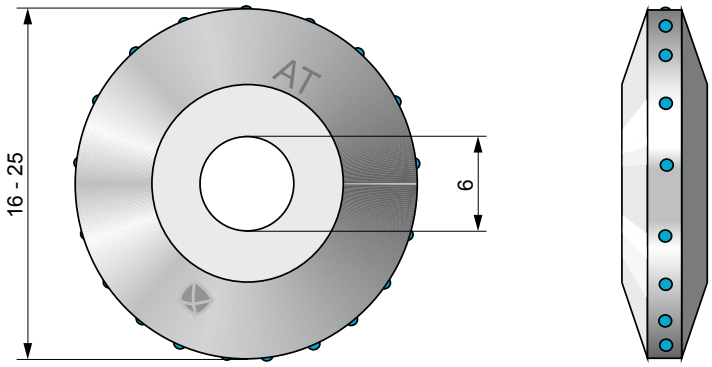
Multigrain diamonds – diamond inserts



Ø x L	Disk grain size	Type	Article No.
8.0 x 10.0	46 – 80	M8 300	M8300
8.0 x 8.0	46 – 80	M8 150	M8150
6.0 x 10.0	46 – 80	M6 150	M6150
Diamond inserts in metal-ceramic compound. Non-greasy, non-slip.			

Ø x L	Disk grain size	Type	Article No.
6.5 x 8.0	46 – 80	BR 100	MBR100
8.0 x 9.5	46 – 80	BR 200	MBR200
9.5 x 9.5	46 – 80	BR 300	MBR300
9.5 x 9.5	46 – 80	BR 375	MBR375
9.5 x 9.5	18 – 46	BC 375	MBC375
Diamond inserts in good-quality compound for highly demanding cases, e.g. silicon carbide grinding disks, etc.			

«AT EXTRA» diamond profiling wheel



1 row of diamonds
Approx. 20 stones
Carat: 1.00

Article No.	
DRPAT	AT EXTRA MK1

Blade dressers analysis of economy consideration & process advantages

Introduction:
Blade dressers are basically conceived from the multipoint wheel dressing concept - as an extension to the areas with a stringent control demand on quality & economy. The basic advantages which have led to the extensive used of blade dressers are:

1. They are very economical in comparison with single-point dressers.
2. Higher form retention capability compared to single point dressers.
3. Minimum in-process service attention compared to any other dressers due to their self-wearing property.
4. They are ideally suited for optimum dressing conditions and in tum for optimum grinding conditions.
5. Greater flexibility in selection from a wide range of dressers to suit different grinding wheel specifications and grinding conditions.

The following paragraphs offer in-depth study and detailed analysis of the above attributes.

Economic considerations:
Blade diamonds are composed of thin natural diamond needles which are much cheaper than larger single point diamonds in direct consideration ofweight basis. The impact of this economy will be felt to a greater extend when we try to replace the costlier chisel points, high-precision single point and indexable crowns.

Form retention capability:
A single point or a chsel point has a limitation that in certain special application like dressing of wheels, within 15 to 20 hours of running, the condition of the dresser tips deteriorate to such a degree that the repeatability of form & related tolerances on the components are adversely affected. This results in the necessity to reset the dressers with fresh cutting points.

Blade dressers are designed to utilize their full life span with minimum deterioration of form and tolerances.

Minimum in-process service attention:
Normally, when a single point or a chisel point dresser is mounted, the machine operator has to «watch» for a number of defects on the component.

1. «Glazing» of the wheel due to «blunting» of diamonds.
2. Loss of form & profiles.
3. Breaking of wheel corners:
4. Appearance of «unstraightness» due to varying load conditions on the dressers.

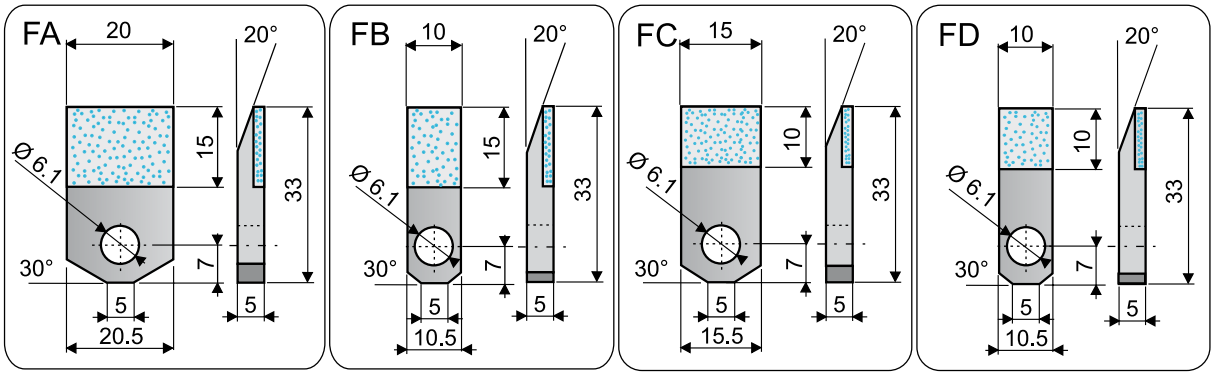
Blade dressers have been developed on the «fix and forget» principal – a concept of the right choice of dresser for an operation – the machine operator only needs to have a look at the machine when the dresser is fully used up.

Optimised conditions of the grinding wheel:
Modern grinding technology makes it possible to optimise a grinding process at the barest minimum operational cost – provided the very starting point of the operation, namely dressing, is optimised. A proper dressing demands the following conditions on the grinding wheel surface.

1. A pure abrasive action – no «rubbing» action.
2. Proper fracture of individual grains to expose maximum abrasive area for grinding.
3. Minimum «filling» of bonding cavities on the wheel surface to minimise friction during grinding operation.
4. Minimum «grain pull out»

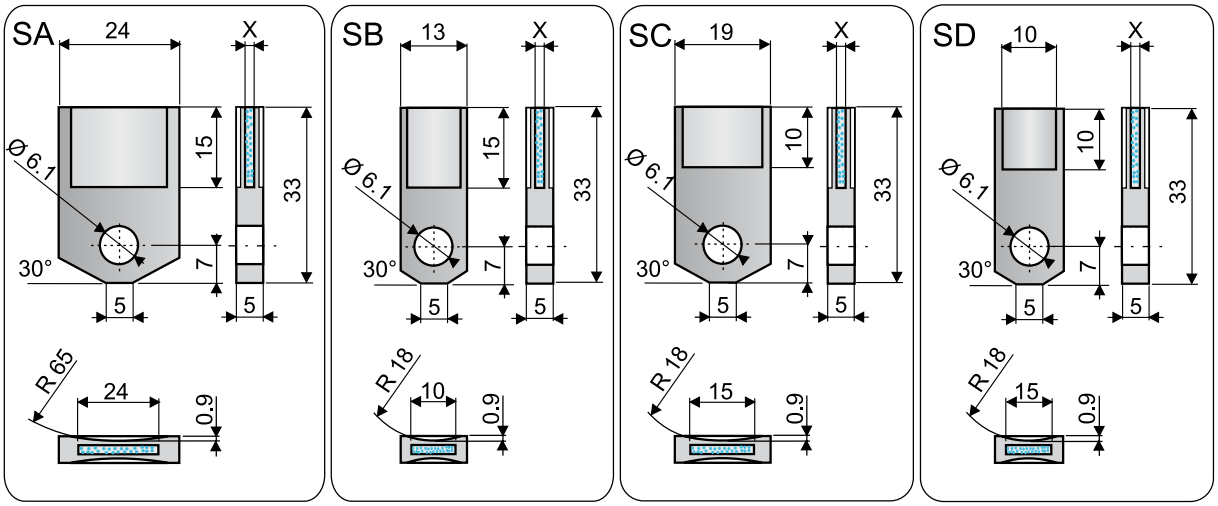
Conclusion:
Blade dressers have been developed over the last decade through extensive field trials with renowned engineering firms. The benefits derived have been passed on to several companies, through substantial reduction in their manufacturing costs.

Diamond dressing plates Type F



Article No.	Type	Grain size x	Dimensions
FA090	Dressing plate with diamond points FA-090	0.90	20 x 15
FA110	Dressing plate with diamond points FA-110	1.10	20 x 15
FA140	Dressing plate with diamond points FA-140	1.40	20 x 15
FAK18	Dressing plate with diamond grit FA-K18	18 Mesh	20 x 15
FB075	Dressing plate with diamond points FB-075	0.75	10 x 15
FB090	Dressing plate with diamond points FB-090	0.90	10 x 15
FB110	Dressing plate with diamond points FB-110	1.10	10 x 15
FB140	Dressing plate with diamond points FB-140	1.40	10 x 15
FBK18	Dressing plate with diamond grit FB-K18	18 Mesh	10 x 15
FC090	Dressing plate with diamond points FC-090	0.90	15 x 10
FC110	Dressing plate with diamond points FC-110	1.10	15 x 10
FC140	Dressing plate with diamond points FC-140	1.40	15 x 10
FCK18	Dressing plate with diamond grit FC-K18	18 Mesh	15 x 10
FD075	Dressing plate with diamond points FD-075	0.75	10 x 10
FD090	Dressing plate with diamond points FD-090	0.90	10 x 10
FD110	Dressing plate with diamond points FD-110	1.10	10 x 10
FD140	Dressing plate with diamond points FD-140	1.40	10 x 10
FDK18	Kornfliese FD-K18	18 Mesh	10 x 10

Diamond dressing plates Type S



Article No.	Type	Grain size x	Dimensions
SA090	Dressing plate with diamond points SA-090	0.90	20 x 15
SA110	Dressing plate with diamond points SA-110	1.10	20 x 15
SA140	Dressing plate with diamond points SA-140	1.40	20 x 15
SB075	Dressing plate with diamond points SB-075	0.75	10 x 15
SB090	Dressing plate with diamond points SB-090	0.90	10 x 15
SB110	Dressing plate with diamond points SB-110	1.10	10 x 15
SB140	Dressing plate with diamond points SB-140	1.40	10 x 15
SC090	Dressing plate with diamond points SC-090	0.90	15 x 10
SC110	Dressing plate with diamond points SC-110	1.10	15 x 10
SC140	Dressing plate with diamond points SC-140	1.40	15 x 10
SD075	Dressing plate with diamond points SD-075	0.75	10 x 10
SD090	Dressing plate with diamond points SD-090	0.90	10 x 10
SD110	Dressing plate with diamond points SD-110	1.10	10 x 10
SD140	Dressing plate with diamond points SD-140	1.40	10 x 10

Multipoint indexable crown

EM-36/EM-24
90° truncated cone diamond crown

A multigrain diamond dresser into which sharp natural diamonds are set by hand. 12-way spacing makes it possible to put the crown-shaped wheel into a new operating setting as soon as the last setting used no longer cuts.

Use

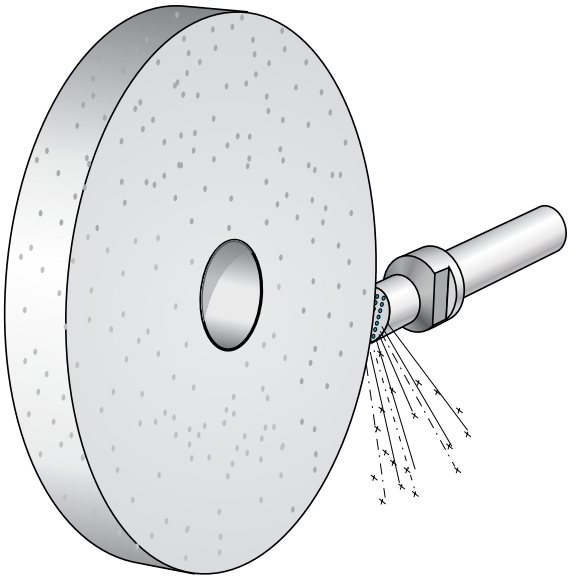
For all types of larger disk where fine dressing is of the utmost importance.

Advantages

- Diamonds can be used without any residues and without remounting
- Because two or more diamond tips are always in operation, the share of the work for each stone is reduced and therefore the service life of the tool increased
- A larger surface area of the disk can be dressed with a monograin diamond in a shorter time
- As different tips are in operation, the feed rate can be increased
- A good, fine disk surface is achieved thanks to the perfect crystal forms of the individual diamonds
- Can also be used for dressing disk sides without adjusting the fixing

Article No.	Description
DREM24	Diamond crown EM24 - 24 diamonds Total 2.5 carat
DREM36	Diamond crown EM36 - 36 diamonds Total 3.5 carat Disk diameter from 600 MK1 holder included in price Other holders: MKO + cyl. ø 10 x 50 mm

Multigrain dresser with stepped design

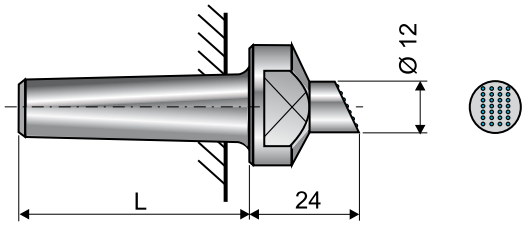


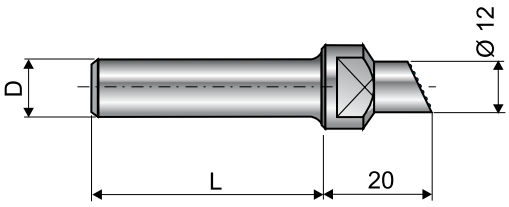
Excellent dressing properties, non-greasy, constant grip to the last grain

Diamond inserts in a metal-ceramic compound
7 superimposed lines each with 4 diamonds = 28 diamond grains

Inserts are available in holders as per the following chart
or according to your own specification

Article No.	Description
MTR	Only insert ø 12 x12
Holder specifications	
MTRHMKOB28	B, Morse 0 x 28
MTRHMK1B43	B, Morse 1 x 43
MTRHZ1050	10 x 50
MTRHZ1250	12 x 50
MTRHZ1450	14 x 50





Dressing block sintered / vacuum brazed

This tool has been developed for the cost-effective dressing of grinding disks from surface grinding machines.

Advantages

a) Removes all deformations very quickly and thoroughly.
b) Requires practically no setting-up time.
c) Guarantees you a consistent, regular finish.
d) Long-lasting, each diamond grain works efficiently.

How to use

1. Fix the dresser in such a way that the arrows are parallel to the spindle.
2. Move smoothly backwards and forwards.
3. A max. of 0.5 mm can be removed from the grinding disk in a single movement.
4. Coolants will extend service life.

Article No.	Description
MDBS	Sintered
MDBV	Diabraze (vacuum-brazed)

Diamond grit impregnated dressers

Diamond grit impregnated dressers have been developed from multi-point dressers. In contrast to the latter they are manufactured from crushed diamond grit rather than a larger number of small natural diamonds. The advantage of the diamond impregnated dresser lies in its exceptional sharpness, which results from sharp edges and points of the broken diamond grit.

Diamond grit impregnated dressers are ideally suited to the following applications, dressing resin, vitreous and rubber bond, fine grit and even so-called «grit free» grinding wheels, as well as boron carbide grinding wheels, dressing single profile threaded and V-profile grinding wheels for general dressing operations on centreless, cylindrical and surface grinding machines.

Diamond grit impregnated dressers are more economical because of their low initial cost and their resistance to shock and impact which prevents shattering.

Dressing times are reduced as higher feed rates can be used. There is an unlimited number of sharp pull-out-free cutting edges contained in the crushed diamond grit.

Diamond grit impregnated dressers demand greater care in selecting the correct dresser for a given application. The bond and diamond grit size used are both variable according to the type of grinding wheels to be dressed. The size of the diamond grit particles should be matched to the grit size of the grinding wheel.

Instructions for Use:

Normal dressing speeds are used. A plentiful supply of coolant should be provided both before and during dressing to prolong dresser life. The diamond grit impregnated cutting face of the dresser should be set at an angle of 90° to the grinding wheel to be dressed, so that all the cutting edges of the diamond grit are able to make contact with the wheel face.

The feed rates used may be double those used with single-point diamond dressers.

The depth of cut should be as follows:	
finishing	approx 0.01 mm
rough grinding	approx 0.02 mm

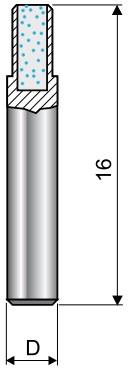
Note: While ordering please specify «diameter» & «length» dimensions & bond.

Holders for fragmented and multigrain diamonds

For types S8 / JN / M8 / M6 / R / BR

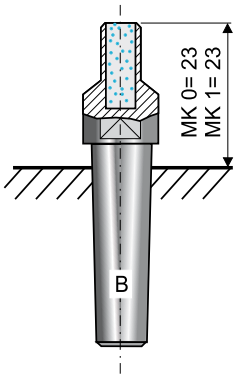
Cylindrical holder

Art. No.	Description
HZ625	ø 6 x 25 mm
HZ840	ø 8 x 40 mm
HZ880	ø 8 x 80 mm
HZ1050	ø 10 x 50 mm
HZ10100	ø 10 x 100 mm
HZ1260	ø 12 x 60 mm
HZ12120	ø 12 x 120 mm



Morse taper shank as per DIN 1820

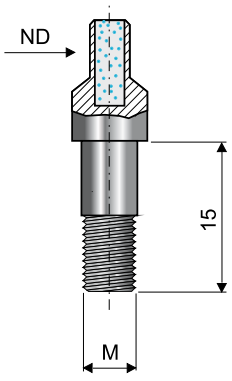
Art. No.	Description
HMK0ALG	A, Morse 0
HMK0BLG	B, Morse 0
HMK1ALG	A, Morse 1
HMK1BLG	B, Morse 1
With cooling grooves	plus



with collar

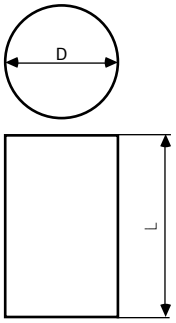
Holders with thread

Art. No.	Description
H63M6	ND-63 M6
H64MF6	ND-64 MF6 x 0.75



M = 6
M = 0.75

Diamond grit impregnated dressers



Diamond inserts in metal-ceramic compound for normal use

D x L	Disk grain size	Article No.
8.0 x 10.0	K 80	S8 K 80
8.0 x 10.0	K 70	S8 K 70
8.0 x 10.0	K 50	S8 K 50
8.0 x 10.0	K 30	S8 K 30
8.0 x 10.0	K 18	S8 K 18
6.0 x 10.0	K 100	S6 K 100
6.0 x 10.0	K 80	S6 K 80
6.0 x 10.0	K 70	S6 K 70
6.0 x 10.0	K 50	S6 K 50
6.0 x 10.0	K 30	S6 K 30
6.0 x 10.0	K 18	S6 K 18
5.0 x 5.0	K 18	S5 K 18

Diamond inserts for fine dressing work

D x L	Disk grain size	Article No.
3.5 x 7.0	K 400	S00 IN 130
3.5 x 7.0	K 320	S 0 IN 130
3.5 x 7.0	K 220	S 1 IN 130
3.5 x 7.0	K 180	S 2 IN 130
3.5 x 7.0	K 150	S 3 IN 130
3.5 x 7.0	K 120	S 4 IN 130
3.5 x 7.0	K 100	S 5 IN 130
3.5 x 7.0	K 80	S 6 IN 130
3.5 x 7.0	K 60	S 7 IN 130
3.5 x 7.0	K 46	S 8 IN 130
3.5 x 7.0	K 36	9 IN 130
6.5 x 7.0	K 320	0 IN 309
6.5 x 7.0	K 220	1 IN 309
6.5 x 7.0	K 180	2 IN 309
6.5 x 7.0	K 150	3 IN 309
6.5 x 7.0	K 120	4 IN 309
6.5 x 7.0	K 100	5 IN 309
6.5 x 7.0	K 80	6 IN 309
6.5 x 7.0	K 60	7 IN 309
6.5 x 7.0	K 46	8 IN 309
6.5 x 7.0	K 36	9 IN 309

«EXTRA» grit impregnated dressers for high demands in respect of surface quality and disk cutting force

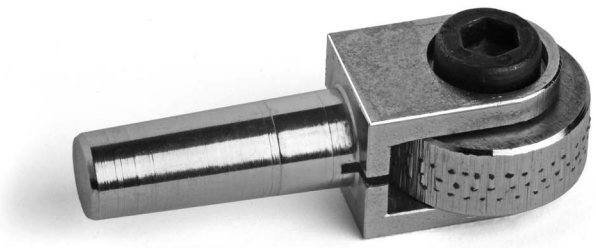
Disk ø mm	Disk grain size	Inserts	Type	Article No.
- 25	36-60	ø 2 x 6	A	S2AEX
	60-100		B	S2BEX
	120-320		C	S2CEX
- 100	36-60	ø 3 x 10	A	S3AEX
	60-100		B	S3BEX
	120-320		C	S3CEX
	240-500		D	S3DEX
	500 +		E	S3EEX
100-300	36-60	ø 4 x 10	A	S4AEX
	60-100		B	S4BEX
	120-320		C	S4CEX
	240-500		D	S4DEX
	500 +		E	S4EEX
300-450	36-60	ø 5 x 10	A	S5AEX
	60-100		B	S5BEX
	120-320		C	S5CEX
	240-500		D	S5DEX
	500 +		E	S5EEX
+ 500	36-60	ø 6 x 10	A	S6AEX
	60-100		B	S6BEX
	120-320		C	S6CEX
	240-500		D	S6DEX
	500 +		E	S6EEX

Holder for «EXTRA» grit impregnated dressers

Dimensions	Article No.
ø 8 x 110	HZ8100
ø 10 x 110	HZ10110
ø 12 x 110	HZ12110
MKOA/CMOA	HMK0ALG
MK1A/CM1A	HMK1ALG

Multigrid disc type diamond dressers

Article No.
DR6017
Internal + surface grinding
Disk grain size 60 – 200
ø 20 – 200
Width max. 50
3 rows of diamonds
approx. 80 stones
Ct. 1.75
DR8020
Cylindrical + surface grinding
Disk grain size 80 – 300
ø 50 – 500
Width max. 80
3 rows of diamonds
approx. 120 stones
Ct. 2.00
DR8030
Cylindrical + surface grinding
Disk grain size 36 – 80
ø 200 – 750
Width max. 300
4 rows of diamonds
approx. 120 stones
Ct. 3.00
Holder
MK0 + MK1
Cyl. ø 10 + ø 12 mm



PCD/MCD dressers

The purchasing terms and conditions for natural diamonds on the world market and the requirements on dressing have led in recent times to a situation whereby the demand for polycrystalline and monocrystalline diamonds has increased dramatically.

Polycrystalline and monocrystalline diamonds are supplied in a small rod shape with a square-shaped, or, if required, rectangular-shaped cross-section.

Polycrystalline/monocrystalline dressers are used for the dressing of conventional carborundum discs and above all for sintered aluminium oxide and silicon carbide grinding discs.

Other areas of application:

- For controlled grinding processes
- For CNC dressing (repeatable grinding conditions)
- Use on round, internal, centreless and surface grinding machines, for plunge-cut, oscillation and profile grinding

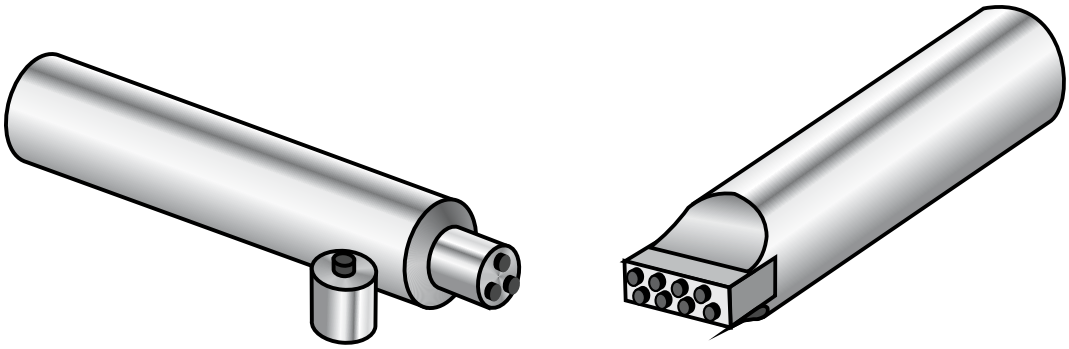
Conditions of use

- Briefly clamp and fully tighten dressing diamond
- Adequate cooling increases the service life of a diamond
- Dressing infeed 0.01 - 0.03 mm
- Dressing feed 0.05 - 0.2 mm/U

Advantages

- No truing, therefore maintenance-free
- Effective width remains consistent
- Low internal stresses and free of inclusions
- Consistent quality of individual diamonds, i.e. no sorting necessary
- Continuity of performance

DIASYNT-Dresser

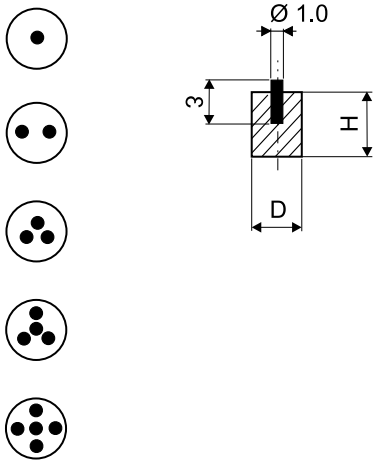


Dresser with polycrystalline diamond

Available as cyl. rods ø 1.0 x 3 mm
Sintered into cylindrical or plate-shaped inserts

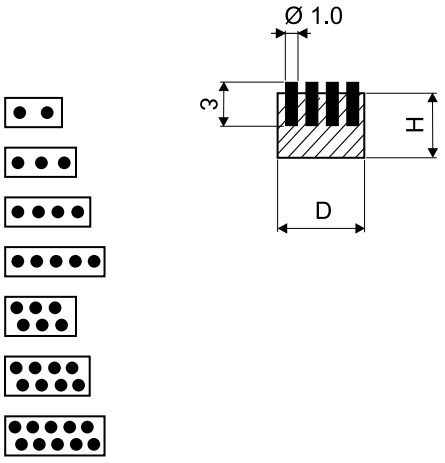
CYLINDER

No. of rods	D x H	Article No.
1	4 x 5	130E4Z11
1	5 x 6	130E4Z21
2	5 x 5	150E4Z12
2	5 x 6	150E4Z22
3	5 x 5	150E4Z13
3	7 x 6	150E4Z23
4	6 x 6	150E4Z14
4	9 x 7	150E4Z24
5	8 x 6	150E4Z15
5	11 x 7	150E4Z25



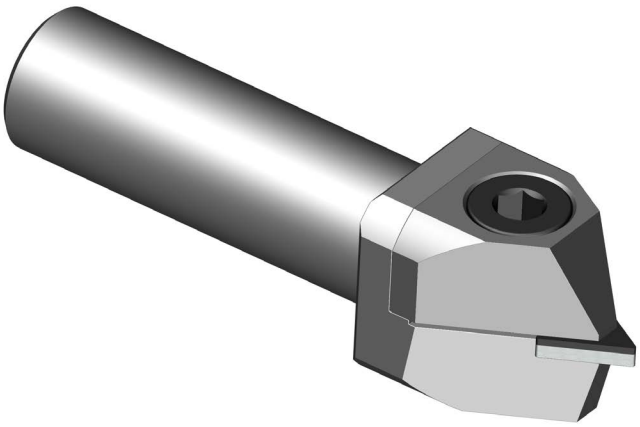
PLATE

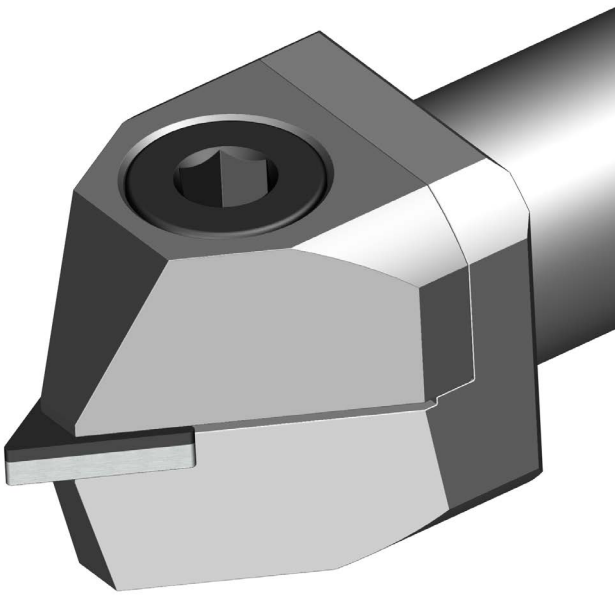
No. of rods	L X B X H	Article No.
2	5 x 3 x 5	190E4P12
2	6 x 4 x 6	190E4P22
3	7 x 3 x 5	190E4P13
3	10 x 4 x 6	190E4P23
4	9 x 3 x 5	190E4P14
4	15 x 4 x 7	190E4P24
5	12 x 3 x 6	190E4P15
5	11 x 7 x 7	190E4P15
6	8 x 5 x 6	190E4P16
6	12 x 7 x 7	190E4P26
8	10 x 5 x 6	190E4P18
8	15 x 7 x 8	190E4P28
10	14 x 5 x 6	190E4P20



Mounting of inserts and holders as per specification

«Trio Universal» Diasynt-Dresser

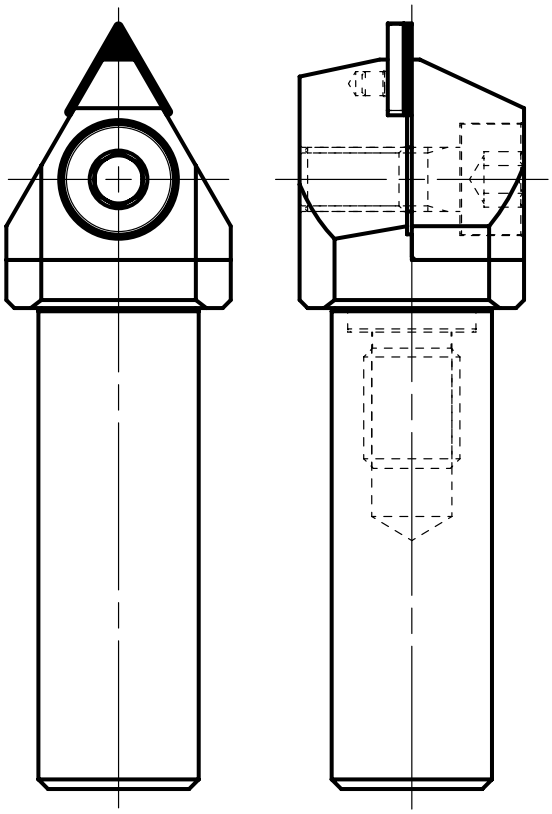




Dressing tool with «DIASYNT» dressing insert in polycrystalline diamond

The fixture for DIASYNT dressing inserts is designed in such a way that it can be screwed onto a shank of your choice.

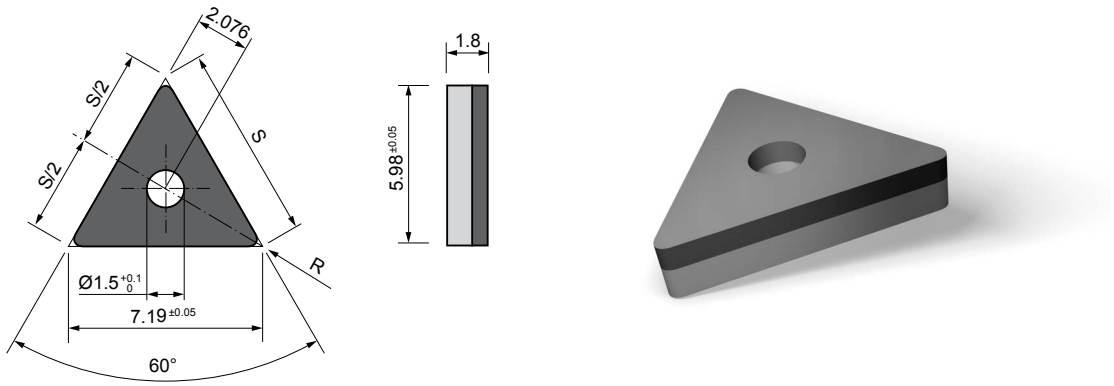
The DIASYNT triangular dressing insert has three tips that can be changed if required. The insert is self-centering with a pin and stop.



Application

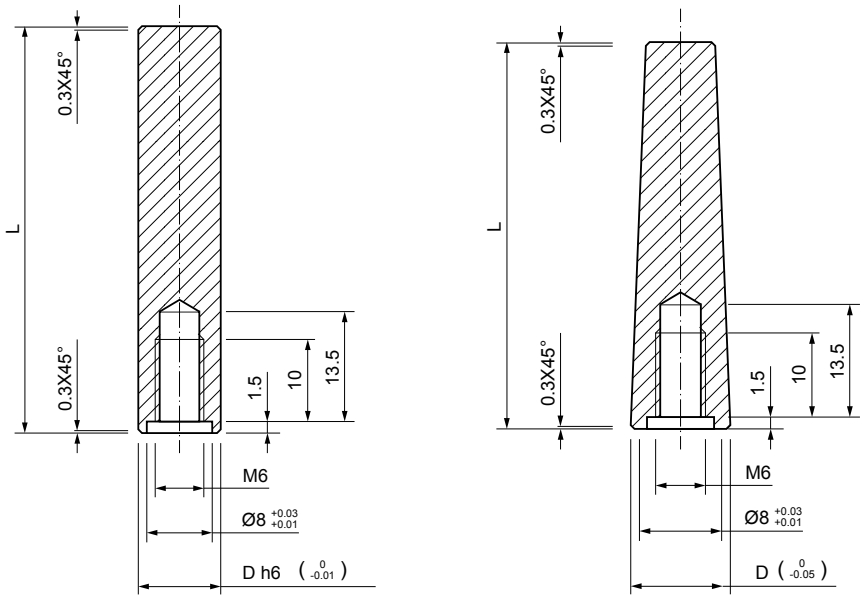
«TRIO UNIVERSAL» DIASYNT dressers are only recommended for disks with a grain of 80 or finer. Cooling is absolutely essential.

Diasynt inserts



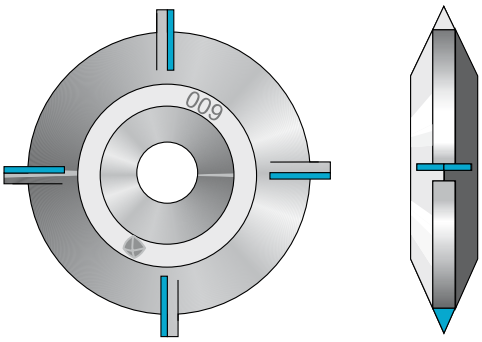
Article No.	
B-T71/60/025/00	No radius
B-T71/60/025/25	R = 0.25
B-T71/60/025/50	R = 0.50

Holders



Article No.		
HTRIOU	«Trio Universal» holder	
HTRIO0840	ø 8 x 40	
HTRIO1050	ø 10 x 50	
HTRIO1260	ø 12 x 60	
HTRIODFL + S	Diaform L + S	
HTRIOMK0	Morse taper shank 0	L = 27
HTRIOMK1	Morse taper shank 1	L = 41
HTRIOMK1-S	Morse taper shank 1 short,	L = 24

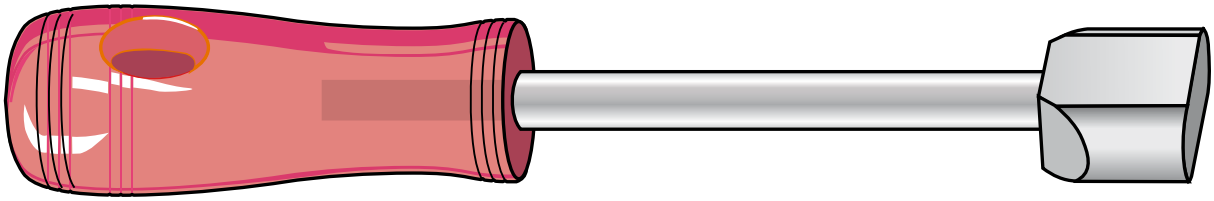
PCD profiling wheel



Article No.	Description
DRPDS460	60° angle with 4 DIASYNT inserts, rough
DRPDS460/0.1	Ditto, sharpened incl. bevel of 0.1 mm
DRPDS460/0.2	Ditto, sharpened, but tip with 0.2 mm radius
DRPDS460/0.5	Ditto, sharpened, but tip with 0.5 mm radius
HRTSCH	Holder for Tschudin

Hand dresser

«UNIVERSAL» hand dresser

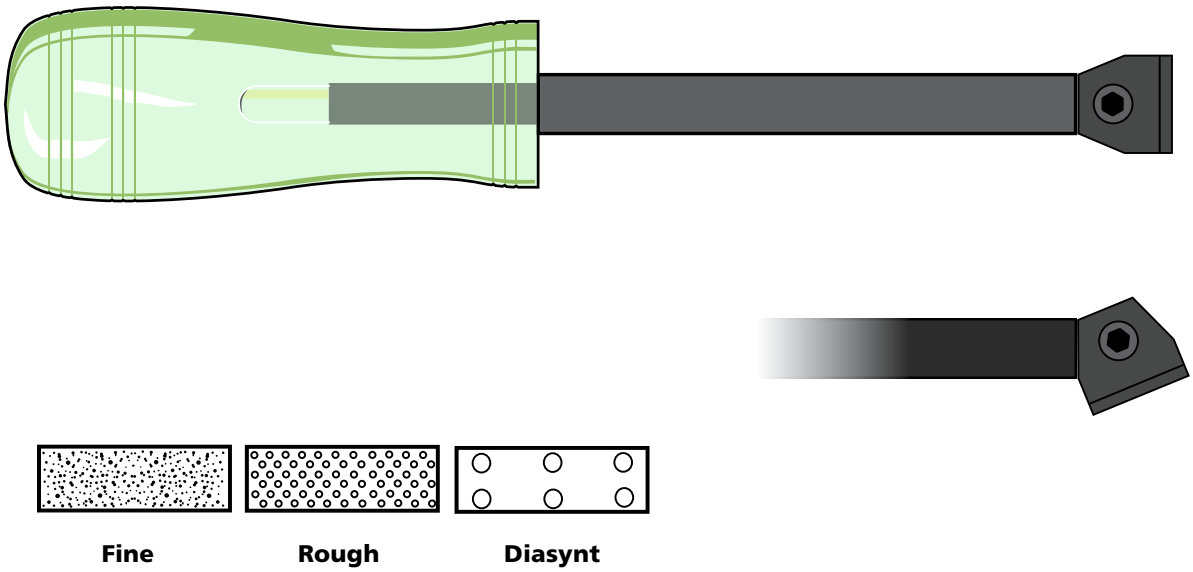


Advantages

- Maintenance-free
- Can be used universally
- Top-quality performance
- Shortened working times
- Long service life
- Very good cutting properties
- Carbide compound
- Cost-effective
- Reasonable price

Article No.	Type	
RDUNIVERSAL	«UNIVERSAL» Set	Holder and insert
RDUNIV/Eins	Insert only	
HRDUniv	Holder only	

«DUPOS» hand dresser



Advantages

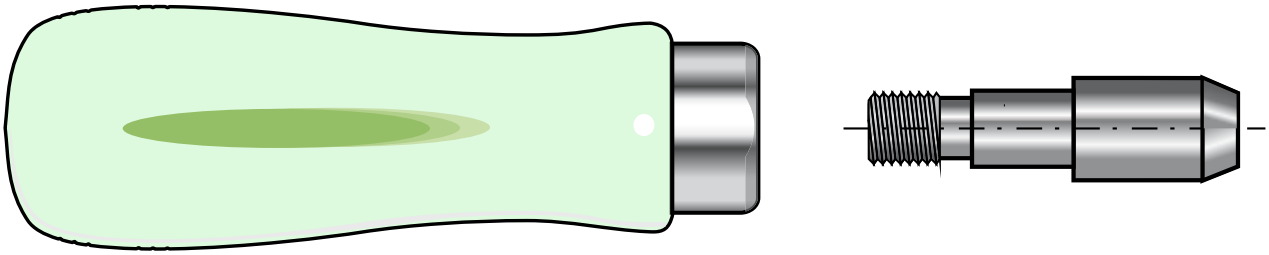
- Replaceable diamond inserts for rough machining and finishing disks.
- Excellent cutting surfaces on disk thanks to even arrangement.
- Can be adjusted from both sides for dressing edges.
- No risk of accidents thanks to fixed connection between holder and insert.

Application

- Fine insert for disks with grain of 80 - 100.
- Rough insert for disks with grain of 18 - 80.
- Diasynt insert for roughest disks.

Article No.	Type
HDUP	Holder only
SDUP	Dupos insert, fine
MDUP	Dupos insert, rough
MDSDUP	Dupos insert, DIASYNT
«DUPOS» Set	Holder, rough and fine inserts

«MINI» multigrain hand dresser



«EXTRA» multigrain insert ø 8 x 6 mm
Type B in plastic holder, interchangeable

Application
Dressing and profiling grinding disks with a grain of 60 - 100 and cupped disks with a grain of 46.

Article No.	
MHAMi	Multigrain insert
HMi	Holder
MHAMiK	Complete hand dresser

Hand dressers with diamond in cylindrical holder

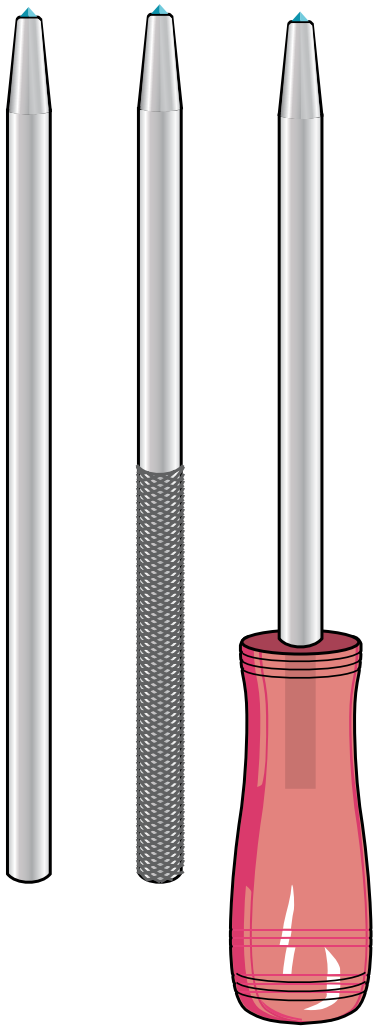
Diamond in cylindrical holder

Holder, shiny Holder Article No.	**Holder, knurled** Holder Article No.	Holder dimensions in mm Diameter x length
20	25	8 x 160
21	26	10 x 180
22	27	12 x 180
23	28	14 x 200

When ordering, please specify disk diameter or diamond weight and holder number.

Diamond in holder with grip

Article No.	Holder dimensions in mm Diameter x overall length
30	10 x 210
31	12 x 240



WIRZ DIAMANT

WIRZ DIAMANT LTD.
Mattenstrasse 11, CH-2555 Brügg
P.O. Box
CH-2501 Biel-Bienne

Phone +41 32 481 44 22
Fax +41 32 481 44 21
eMail info@wirzdiamant.ch

08032014