



***Leaders in Superabrasive
Finishing Systems***



**Hyprez® Diamond Polishing
Compounds, Machines and
Accessories for the Mould and Die
Industry**

Mould & Die Polishing Products



Engis® is a world leader in the manufacture of diamond polishing compound. In fact, the very first product manufactured by Engis® at its inception in 1938 was diamond compound for high precision military applications. We now not only have 80+ years of manufacturing experience behind us, but have complemented it with expertise in both diamond characterization and carrier chemistry. Our ISO 9001 quality certification ensures that Engis® brings strict disciplines to our manufacturing processes.

At the very core of the Engis® Corporation is our “Systems Approach”. We not only offer quality products for sale, but we also provide complete solutions to our customers’ application challenges. For the mould and die polishing market this involves:

Diamond compounds as well as other polishing products, rotary and reciprocating hand tools, and operator experience and techniques.

Engis® truly is a single source for all of your polishing needs. Because we recognise that polishing is a system, Engis® offers a full range of high quality rotary and reciprocating tools as well as machine accessories and consumables.

We know that it is customer service that will differentiate Engis® from other suppliers. Our total commitment to our customers means that we service everything we sell. You can purchase from Engis® knowing you will have complete factory support for technical questions and repairs.

And, to complete the package of total customer service, we have experienced tool and die makers on staff who can draw upon their own time on the bench to assist you with your polishing challenges or in selecting the right product.

In summary, at Engis® it is our intent to go beyond being just a provider of quality products, but to partner with our customers to provide the best possible finishes in the shortest amount of time and at the lowest cost.



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Compounds for every application

A comprehensive range of DiaMold® and Hyprez® Diamond Compounds for all variables involved in polishing. By using the proper compound, in conjunction with the proper equipment and accessories, you can be assured of consistent, repeatable results of the highest quality. Balancing our expertise in grading and micronizing of diamonds, along with knowledge of chemistry, compounding techniques, carrier formulations, and concentration factors, Engis® is able to offer every mould maker a compound to meet their specific need. Available in micron sizes from 1/10 to 60.

DiaMold® Compounds



Formulated for general purpose use, an economic solution that delivers quality results in many mould & die applications.

Hyprez® L Compound



For use on harder materials, such as tungsten carbide tooling & ceramics due to enhanced surface tension properties. Withstands frictional heat generated during use.

Hyprez® W Compound



Water soluble formula that cleans easily from the workpiece. Suitable for high luster polishing, but which might be affected by an oil-based compound.

Hyprez® SC Compound



Superior lubrication properties that enhance cut rate without sacrificing finish. Adheres to workpiece/ tool. High vaporization point permits working on precooled molds.

Hyprez® Five-Star



Combines the excellent cutting characteristics of natural diamond with the durability of synthetic diamonds, into an all-purpose, precision blend. Clean up with either oil or water-based products. Eliminates polishing steps, resulting in better quality finish produced in less time.

	Chemistry		Materials				Performance		
	Oil Based	Water Based	Carbides	Tool Steels	Ceramics	Aluminum	High Luster/ High Performance	Toolroom Applications	General Purpose
DiaMold®	●			●					●
Five Star®	●	●	●	●		●	●		
L Compound	●		●		●	●		●	
W Compound		●					●	●	●
SC Compound	●		●		●				

Hyprez® Diamond Compounds

Hyprez® Diamond Formulas are enhanced products of the highest quality, the result of Engis® deep understanding of diamonds. Our expertise on how to mill, shape and grade diamonds of various types and friabilities is matched. Coupled with this experience is our knowledge of chemistry, compounding techniques, carrier formulations and concentration factors.

This wealth of technical know-how, combined with our ISO 9001 certified quality systems, have made Hyprez® the most trusted name in diamond compounds throughout the world.



Understanding Our Formulas for Compounds & Slurries



{8 (W) 35-MA

The type of diamond used in the formula:
MA (monocrystalline), PC (polycrystalline)
or NAT (virgin natural).

Diamond concentration shown by a code number, or
by MED (medium), STD (standard) or STR (strong)

Type of carrier -- (W) water soluble,
(OS) oil soluble or special formula

Micron size of diamond in the
compound or slurry

Hyprez® Five-Star® Diamond Compound – The Mould Finisher’s Choice

Manufactured & Natural
Diamond Blend – Ideal for
Hand Finishing of Moulds and
dies

Hyprez Five-Star® is a universal compound for use in virtually all applications. It is the first diamond compound to combine the excellent cutting capability of natural diamonds and the extended durability of manufactured diamonds — in a precision blend that assures faster cutting and long service life.

Proven Formulation

One of the world’s most widely used diamond compounds, Hyprez Five-Star® is formulated to withstand severe lapping conditions without loss of cutting quality. The use of a stable carrier assures sustained particle suspension throughout the process cycle.

Better Coverage

Hyprez Five-Star® compound’s unique blend of natural and manufactured diamonds also provides more surface coverage and improved impregnation of laps.

2-Way Solubility

Five-Star® diamond compound can be used with Hyprez® OS Type IV (oil soluble) or Type W (water soluble) lubricants to meet specific requirements of material and surface finish.

Lubricant

Use OS Type IV (oil soluble) or

W (water soluble) lubricant.

Available Packaging

- 10-gram, 20-gram syringe
- 5-gram Hyplicators
- Other packaging available on request.

Concentration

For concentration recommendation, consult your Engis representative.



Micron Size	Product Code Concentration	Compound Color	Application	Concentration
1/10	1/10-FS/480	Grey	Final Polishing	Standard
	1/10-FS/475			Strong
1/4	1/4-FS/480	Grey	Final Polishing	Standard
	1/4-FS/475			Strong
1	1-FS/48	Blue	Final Polishing	Medium
	1-FS/47			Standard
	1-FS/45			Strong
3	3-FS/48	Green	Final Polishing	Medium
	3-FS/47			Standard
	3-FS/45			Strong
	3-FS/40			Strong
6	6-FS/45	Yellow	Lapping and Pre-polishing	Medium
	6-FS/42			Standard
	6-FS/375			Strong
8	8-FS/40	Red	Lapping and Pre-polishing	Medium
	8-FS/375			Standard
	8-FS/35			Strong
14	14-FS/40	Brown	Lapping and Pre-polishing	Medium
	14-FS/35			Standard
	14-FS/30			Strong
25	25-FS/40	Mahogany	Rapid Stock Removal	Medium
	25-FS/35			Standard
45	25-FS/30	Purple	Rapid Stock Removal	Strong
	45-FS/40			Medium
	45-FS/35			Standard
60	45-FS/30	Orange	Rapid Stock Removal	Strong
	60-FS/30			Standard
90	60-FS/25	White	Rapid Stock Removal	Strong
	90-FS/30			Standard
	90-FS/25			Strong

Hyprez® L Compound

For Tungsten Carbide & Mould Materials

L diamond compound is specially formulated for use with harder materials. Typical applications include finishing tungsten carbide, tooling and moulds.

Oil-soluble for better application

Hyprez® Formula L is a diamond particle suspension which is not affected by dilution. It will hold to vertical surfaces, slots, ribs and other hard to reach areas. The compound can be thinned to any desired consistency with Hyprez® OS Type IV or Hyprelube® lubricants. It utilizes a special chemical carrier with increased surface tension to improve tool adhesion.

Withstands Frictional Heat

The consistency of Hyprez® L formula is not affected by frictional heat generated during use. Only minimal lubrication is required for optimal results.

For polishing of molds and dies, L diamond compounds are the premium formulations that polishers prefer.

L formula diamond compound is available with Hyprez® monocrystalline (MA) and polycrystalline synthetic (PC) diamond

Formula L Compound Grade	Micron Size Range	Approximate Mesh Size Comparison	Color Code Identification	Diamond Concentration
1/10	0-1/5	240,000	Grey	Standard
1/4	0-1/2	100,000	Grey	Standard
1/2	0-1	60,000	Grey	Standard
1	0-2	14,000	Blue	Standard Strong
3	2-4	8,000	Green	Standard Strong
6	4-8	3,000	Yellow	Standard Strong
8	6-12	1,800	Red	Standard Strong
14	10-20	1,200	Brown	Standard Strong
25	22-36	600	Mahogany	Standard Strong
45	36-54	325	Purple	Standard Strong
60	54-80	270	Orange	Standard Strong
90		230	White	Standard Strong

Available Packaging

- 10-gram, 20-gram syringe
- 5-gram Hyplicators
- Other packaging available on request.

Hyprez® W Compound

Hyprez® W Compound

A water-soluble formula that cleans easily from the workpiece, Hyprez® W is recommended for areas requiring a very high luster, but which might be affected by an oil-base compound.

general use by the die and mould industry and for precision hand lapping. For additional lubrication, use W lubricant.



All grades of Hyprez compounds are available with Hyprez monocrystalline (MA) and polycrystalline synthetic (PC) Diamond

Grade W was the first commercially successful diamond compound. Formulated by Engis®, it is still in

Classifications For General Use	W Compound Grade	Micron Size Range	Approximate Mesh Size Comparison	Color Code Identification	Diamond Concentration
For Operations Requiring Precise Finishes And Tolerances	1/10-W-475-MA	0-1/5	240,000	Grey	Standard
	1/4-W-475-MA	0-1/2	100,000	Grey	Standard
	1-W-48-MA	0-2	14,000	Blue	Medium
	1-W-47-MA				Standard
1-W-45-MA	Strong				
Final Finishing Grades For Most Moulds, Dies, Flat Lapping And Assorted Production Lapping	3-W-48-MA	2-4	8,000	Green	Medium
	3-W-47-MA				Medium
	3-W-45-MA				Standard
	3-W-40-MA				Strong
	6-W-45-MA	4-8	3,000	Yellow	Medium
	6-W-42-MA				Standard
6-W-375-MA	Strong				
Grades Most Commonly Used As First Step In Finishing Carbides, Steels And Production Lapping	8-W-40-MA	6-12	1,800	Red	Medium
	8-W-375-MA				Medium
	8-W-35-MA				Standard
	8-W-30-MA				Strong
For Very Fast Stock Removal.	14-W-40-MA	10-20	1,200	Brown	Medium
	14-W-35-MA				Standard
	14-W-30-MA				Strong
	25-W-40-MA	22-36	600	Mahogany	Medium
	25-W-35-MA				Standard
	25-W-30-MA				Strong
For Very Fast Stock Removal.	45-W-40-MA	36-54	325	Purple	Medium
	45-W-35-MA				Standard
	45-W-30-MA				Strong
For Very Fast Stock Removal.	60-W-30-MA	54-80	270	Orange	Standard
	60-W-25-MA				Strong
	90-W-30-MA			White	Standard
90-W-25-MA	Strong				

Lubricant	Use W (water soluble) lubricant with W compound
Available Packaging	• 5-gram Hyplicator, 10 gram & 20 gram plastic syringe • Other packaging available.
Concentration	The above compounds are all normally available from stock. Other concentrations are available on request.

Hyprez® SC Compound



Super-cut compound gets the job done quicker! The new Hyprez® SC diamond compound has been specifically formulated with the polishing professional in mind. In the past, a compound that cut quickly might leave a higher finish, resulting in additional finishing steps to massage the mould back to its original state. Any time saved on the front end was lost in the final polish; to address this challenge the engineers at Engis® have developed Hyprez® SC.

An exceptionally sharp diamond particle type has been selected and the PSD (particle size distribution) optimized for superior cutting action.

In addition, the chemists at Engis® have formulated a new carrier with special lubricating properties which enhance the cut rate without sacrificing finish. Taking into consideration that larger moulds must often be polished in situ, the carrier has a high vaporization point, which permits working on moulds which have not yet cooled. Hyprez® SC takes the compromise out of polishing. This breakthrough formula results in faster stock removal and fewer polishing steps which lead to lower costs, improved productivity, and better quality components.

Hyprez® SC has been tested at premiere mould shops with outstanding results.

Features & Benefits

- New sharper diamond particles
- Optimized particle size distribution
- New carrier with superior lubrication qualities
- Better adhesion to the felt or wood bob
- Not “greasy” like standard compounds
- Easier to view the work piece while polishing
- Higher vaporization point

Available Packaging

- 5 gram syringe
- 20 gram syringe
- Call for other sizes



Before and After photos of an A2 component finished with 3 micron SC compound on a felt wheel

Micron Size	Product Code	Compound Colour	5 Gram Part No.	20 Gram Part No.
1	1(SC)STR	Ivory	500.1164	500.1168
3	3(SC)STR	Yellow	500.1174	500.1178
6	6(SC)STR	Orange	500.1124	500.1128
9	9(SC)STR	Green	500.1114	500.1118
20	20(SC)STR	Blue	500.1104	500.1108
30	30(SC)STR	Red	500.1134	500.1138
45	45(SC)STR	Brown	500.1144	500.1148
60	60(SC)STR	Natural	500.1154	500.1158

DiaMold® Compound

DiaMold® Diamond Compound is a diamond polishing compound specially formulated for use in mould & die applications.

Proven Formulation

DiaMold® Diamond Compound will withstand severe lapping conditions without loss of cutting quality. The use of a stable carrier assures sustained particle suspension throughout the process cycle.

Better Coverage

DiaMold® Compound's unique blend also provides more surface coverage and improved impregnation of lapping tools.

Oil-Soluble

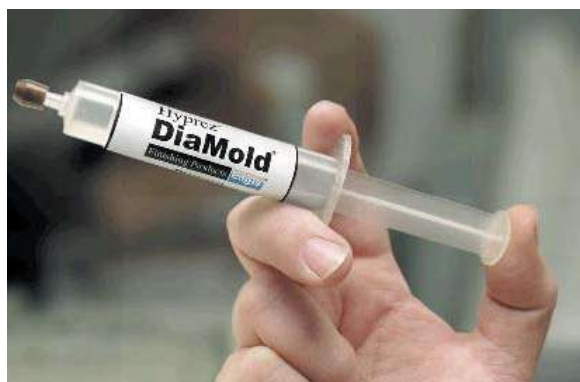
DiaMold® Diamond Compound can be used with Hyprelube and Hyprez® OS Type IV (oil soluble) lubricants to meet specific requirements of material and surface finish.

Great Advantages

DiaMold® Diamond Compound offers these outstanding advantages:

- Superior surface tension
- Consistent viscosity
- Does not evaporate
- Oil-based
- Pleasant odour
- Economical
- Aggressive removal rates
- High adhesion to tools and surfaces
- Generates highly reflective surface
- Easily cleans with Hyprelube Lubricant

Mold & Die Polishing Compound for the finishing specialist who demands the best!



DiaMold® Diamond Compounds are available in several dispensing containers:

- 10 gram syringe
- 20 gram syringe
- 10 gram dip jar

Ordering guide:

Specify quantity, micron size, type of compound, container size and type,
i.e. 3 pcs. 6-DiaMold Diamond Compound 20 gram syringe.

Micron Size	Product Code	Compound Color	Application
1	1-DiaMold	Blue	Final Polishing
3	3-DiaMold	Green	Final Polishing
6	6-DiaMold	Yellow	Lapping & Pre-Polishing
8	8-DiaMold	Red	Lapping & Pre-Polishing
14	14-DiaMold	Brown	Lapping & Pre-Polishing
25	25-DiaMold	Mahogany	Rapid Stock Removal
45	45-DiaMold	Purple	Rapid Stock Removal
60	60-DiaMold	Orange	Rapid Stock Removal

For best results, use DiaMold® Lubricants. They are specially formulated to work with DiaMold® Diamond Compounds.

Lubricants

- Hyprelube Lubricant
- OS Type IV (oil-soluble)

Available Packaging

- 10 gram syringe
- 20 gram syringe
- 10 gram dip jar
- Other packaging on request

High Intensity Polish

- No harsh odours or smells
- Easily applied and removed
- Produces a high finish with very little effort
- Can be used on brass, bronze, chrome, aluminum and other metals
- Removes rust deposits
- Removes tarnish, dirt and oils
- Leaves protective film which retards oxidation and rust
- Use after diamond polishing to remove haze

High Intensity Polish (HIP) safely removes plate-out, oxidation and stains on fine tooling surfaces quickly and cost-effectively from any metal surface. It is ideal for all types of moulds, dies and fixtures. It restores surface finish while providing high luster sheen. Easier to remove than other polishes, it wipes on and off without leaving a residue. Non-hazardous and non-corrosive, it cleans and removes haze from diamond finished moulds safely, without causing spiral webs, cattails or other fine surface scratches. HIP is offered in 50 gram, 250 gram, 500 gram and 1,000 gram containers.



ORDERING GUIDE

Size	Parts No.
50 grams	HIP.50
250 grams	HIP.250
500 grams (1/2 kilo)	HIP.500
1,000 grams (1 kilo)	HIP.1000

Hyprez® Lubricants

Importance of proper lubrication

Lubricants used with any diamond compound should be compatible with the carrier used to give the best cutting action possible, maintain even dispersion of diamonds and produce uniform finishes. The proper lubricant will reduce lapping time and also reduce the amount of diamond compound needed to complete the lapping operation.

OS Lubricant

This low-viscosity, oil soluble lubricant is compatible with oil-based slurries and compounds, including Hyprez® Five Star®, Formula L, Hyprez® OS and S-1313-T4. In proper concentrations, it is also partially compatible with Hyprez® W compound.

W Lubricant

This water-based fluid is thicker than OS and is compatible with Hyprez® W compound and S-4889 slurry.

Hyprelube®

Hyprelube® is a synthetic based lubricant formulated to be used with either our Five-Star® or our DiaMold® diamond compounds. This superior lubricant, with its penetrating qualities and oil/water solubility, not only increases the cutting action, but assures superior lubrication of every diamond particle throughout the polishing cycle.





Lubricating Oil for Dipro-Fog MFA-K

The Dipro-Fog MFA-K oil was especially developed for the unique lubricating requirements of the Air Di-Profiler and Air Rotary Hand Piece.

Lubricant for Di-Profiler & Minimo Recipron

FNA-K

Use the FNA-K oil for lubricating your Di-Profiler or Recipron machines. This lubricant is specially formulated to reduce wear and prolong the life of your reciprocating hand pieces.

It is recommended that you use the FNA-K oil on your Di-Profiler and Recipron hand pieces daily. 1-2 drops will reduce heat and friction.



Hyprez® Polishing Stones MATERIALS AND APPLICATIONS



Section	Type	Abrasive	Color	Grits	CHARACTERISTICS AND APPLICATION
C-2	DM	Aluminum Oxide	Gray	150-600	Similar to the DS general purpose finishing stone. This stone is slightly harder and does not break down as rapidly as the DS. Engineered to cut very fast yet provides a smooth finish. Excellent for removing cutter marks on all tool and die steels.
C-3	EDM	White Aluminum Oxide	Dark Brown	100-600	The EDM stone is engineered for the removal of hard EDM scale. This stone is a soft stone which breaks down quickly and cuts freely.
C-3	DS	Regular Aluminum Oxide	Green / Tan	100-900	Very popular medium hard stone for all types of steel. Fast cutting, provides a fine, even finish and has the perfect breakdown for a finishing stone.
C-4	AL	White Aluminum Oxide	Tan	150-600	A specially treated, medium hard stone that cuts fast and leaves an excellent finish. It works well on aluminum, not scratching or tearing the surface.
C-4	RG	Green Silicon Carbide	Green	120-600	A medium stone with premium silicon carbide grains. Cuts very fast, yet provides an excellent finish on most die and mold steel types ranging from 28 to 58 Rc. Also permits finishing on aluminum, cast iron and bronze.
C-5	HY	White Aluminum Oxide	Cream / Ivory	1200 - 600	Extremely well liked, this medium hard stone is treated with a special oil to resist loading. Cuts very fast yet provides smooth finishes on most tool and die sheets. 220 grit and 320 grits work well on hard EDM scale.

DM

Similar to the DS general purpose finishing stone. This stone is slightly harder and does not breakdown as rapidly as the DS. Engineered to cut very fast yet provides a smooth finish.

Excellent for removing cutter marks on all tool and die steels.

- General purpose
- Fast cutting
- Consistent breakdown
- For use on all tool steels



Size	Pcs/ Box	150	180	220	320	400	600
1/16 x 1/4 x 6	12	0810179		0812039	0813239	0814059	0816119
1/16 x 1/2 x 6	12	0810129		0812109	0813249	0814099	0816209
1/8 x 1/8 x 6	12	0810159	0811129	0812159	0813299	0814129	0816259
1/8 x 1/4 x 6	12	0810199	0811179	0812239	0813339	0814199	0816299
1/8 x 1/2 x 6	12	0810229	0811239	0812259	0813359	0814219	0816319
1/8 x 1 x 6	12	0810259	0811289	0812319	0813369	0814229	0816339
5/32 x 5/32 x 6	12	0810309	0811359	0812359	0813399	0814259	0816399
1/4 x 1/4 x 6	12	0810379	0811399	0812369	0813409	0814369	0816409
1/4 x 1/2 x 6	12	0810429	0811429	0812429	0813429	0814429	0816429
1/4 x 1 x 6	6	0810459	0811499	0812739	0813499	0814499	0816469
3/8 x 3/8 x 6	12	0810489		0812789	0813539	0814529	0816559
1/2 x 1/2 x 6	6	0810539	0811549	0812839	0813549	0814559	0816629
1/2 x 1 x 6	4	0810579	0811579	0812869	0813559	0814609	0816649
1 x 1 x 6	2	0810629	0811639	0812899	0813599	0814659	0816699
1/4 TRI x 6	6	0810659		0812909	0813619	0814699	
3/8 TRI x 6	6	0810699		0812919	0813649	0814709	
1/4 RND x 6	6	0810739		0812959	0813679	0814889	0816709
3/8 RND x 6	6	0810789		0812979	0813719	0814899	0816759
1/2 RND x 6	6	0810999		0812999	0813749	0814959	

EDM

Engineered for the removal of hard EDM scale. This stone is a soft grade which breaks down faster and works excellently when used by hand.

Size	Pcs/ Box	100	120	150	180	220	280	320	400	600
1/16 x 1/4 x 6	12		0212609	0213709	0214809	0215909	0217009	0218109	0219209	0221409
1/16 x 1/2 x 6	12	0211609	0212709	0213809	0214909	0216009	0217109	0218209	0219309	0221509
1/8 x 1/8 x 6	12				0215009	0216109		0218309	0229409	0221609
1/8 x 1/4 x 6	12	0211809	0212909	0214009	0215109	0216209	0217309	0218409	0219509	0221709
1/8 x 1/2 x 6	12	0211909	0213009	0214109	0215209	0216309	0217409	0218509	0219609	0221809
1/8 x 1 x 6	12	0212009	0213109	0214209	0215309	0216409	0217509	0218609	0219709	
5/32 x 5/32 x 6	12		0213209		0215409	0216509		0218709	0219809	0222009
1/4 x 1/4 x 6	12	0212309	0213409	0214509	0215609	0216709	0217809	0218909	0220009	0222209
1/4 x 1/2 x 6	12	0212409	0213509	0214609	0215709	0216809	0217909	0219009	0220109	0222309
1/4 x 1 x 6	6	0212509	0213609	0214709	0215809	0216909	0218009	0219109	0220209	0222409

DS

Very popular medium hard stone for all types of steel. Fast cutting, provides a fine, even finish and has the perfect breakdown for a finishing stone.

Size	Pcs/ Box	100	150	180	220	280	320	400	500	600	900
1/16 x 1/4 x 6	12	0232109	0233409		0236009	0237309	0238609	0239909	0241209	0242509	0245109
1/16 x 1/2 x 6	12	0232209	0233509		0236109		0238709	0240009		0242609	0245209
1/8 x 1/8 x 6	12	0232309	0233609	0234909	0236209		0238809	0240109		0242709	0245309
1/8 x 1/4 x 6	12	0232409	0233709	0235009	0236309	0237609	0238909	0240209	0241509	0242809	0245409
1/8 x 1/2 x 6	12	0232509	0233809	0235109	0236409	0237709	0239009	0240309	0241609	0242909	0245509
1/8 x 1 x 6	12	0232609	0233909	0235209	0236509	0237809	0239109	0240409	0241709	0243009	
5/32 x 5/32 x 6	12	0232709	0234009	0235309	0236609		0239209	0240509	0241809	0243109	0245709
1/4 x 1/4 x 6	12	0232909	0234209	0235509	0236809	0238109	0239409	0240709	0242009	0243309	0245909
1/4 x 1/2 x 6	12	0233009	0234309	0235609	0236909	0238209	0239509	0240809	0242109	0243409	0246009
1/4 x 1 x 6	6	0233109	0234409	0235709	0237009	0238309	0239609	0240909	0242209	0243509	0246109
3/8 x 3/8 x 6	12	0233159	0234459		0237059	0238359	0239659	0240959		0243559	
1/2 x 1/2 x 6	6	0233209	0234509	0235809	0237109	0238409	0239709	0241009	0242309	0243609	0246209
1/2 x 1 x 6	4	0233309	0234609	0235909	0237209	0238509	0239809	0241109	0242409	0243709	0246309
1 x 1 x 6	2	0233319	0234619	0235919	0237219		0239819	0241119	0242419	0243719	
1/4 TRI x 6	6		0234639		0237239		0239839	0241139			
3/8 TRI x 6	6		0234649		0237249		0239849	0241149			
1/4 RND x 6	6		0234669		0237269		0239869	0241169		0243769	
1/2 RND x 6	6		0234689		0237289		0239889	0241189			
3/8 RND x 6	6		0234679		0237279		0239879	0241179		0243779	

A / L

A specially treated, medium hard stone that cuts fast and leaves an excellent finish. Similar to AOT, but breaks down faster. It works well on aluminum, not scratching or tearing the surface.

Size	Pcs/ Box	150	220	320	400	600
1/8 x 1/4 x 6	12	0381929	0383529	0384329	0385129	0385929
1/8 x 1/2 x 6	12	0381969	0383569	0384369	0385169	0385969
1/4 x 1/4 x 6	12	0382089	0383689	0384489	0385289	0386089
1/4 x 1/2 x 6	12	0382129	0383729	0384529	0385329	0386129
1/4 x 1 x 6	6	0382169	0383769	0384569	0385369	0386169



Stone Holder for Profilers

Part No. VEA

R G

A medium stone with premium silicon carbide grains. Cuts very fast, yet provides an excellent finish on most die and mould steel types ranging from 28 to 58 Rc. Also permits finishing on aluminum, cast iron and bronze.

Size	Pcs/ Box	120	150	220	320	400	600
1/16 x 1/2 x 6	12		0352059	0353059	0355059	0356059	0358059
1/8 x 1/4 x 6	12	0351139	0352139	0353139	0355139	0356139	0358139
1/8 x 1/2 x 6	12	0351179	0352179	0353179	0355179	0356179	0358179
5/32 x 5/32 x 6	12				0355259	0358259	0358259
1/4 x 1/4 x 6	12	0351299	0352299	0353299	0355299	0356299	0358299
1/4 x 1/2 x 6	12	0351339	0352339	0353339	0355339	0356339	0358339
1/4 x 1 x 6	6		0352379	0353379	0355379	0356379	0358379
3/8 x 3/8 x 6	12		0352419	0353419	0355419	0356419	
1/2 x 1/2 x 6	6		0352459	0353459	0355459	0356459	0358459
1/2 x 1 x 6	4		0352499	0353499	0355499	0356499	0358499
1 x 1 x 6	2		0352539	0353539	0355539	0356539	0358539
1/4 RND x 6	6			0353739	0355739	0356739	

HY

Extremely well liked, this medium hard stone is treated with a special oil to resist loading. Cuts very fast yet provides smooth finishes on most tool and die steels. 220 grit and 320 grits work terrifically on hard EDM scale.

Size	Pcs/ Box	120	150	220	320	400	600
1/16 x 14 x 6	12	0331019	0332019	0334019	0336019	0337019	0339019
1/16 x 1/2 x 6	12	0331059	0332059	0334059	0336059	0337059	0339059
1/8 x 1/8 x 6	12	0331099	0332099	0334099	0336099	0337099	0339099
1/8 x 1/4 x 6	12	0331139	0332139	0334139	0336139	0337139	0339139
1/8 x 1/2 x 6	12	0331179	0332179	0334179	0336179	0337179	0339179
1/8 x 1 x 6	12	0331219	0332219	0334219	0336219	0337219	
5/32 x 5/32 x 6	12	0331259	0332259	0334259	0336259	0337259	0339259
1/4 x 1/4 x 6	12	0331299	0332299	0334299	0336299	0337299	0339299
1/4 x 1/2 x 6	12	0331339	0332339	0334339	0336339	0337339	0339339
1/4 x 1 x 6	6	0331379	0332379	0334379	0336379	0337379	0339379
3/8 x 3/8 x 6	12	0331419	0332419	0334419	0336419	0337419	
1/2 x 1/2 x 6	6	0331459	0332459	0334459	0336459	0337459	0339459
1/2 x 1 x 6	4	0331499	0332499	0334499	0336499	0337499	0339499
1 x 1 x 6	2	0331539	0332539	0334539	0336539	0337539	0339539
1/4 TRI x 6	6				0336699	0337699	
3/8 TRI x 6	6	0331739		0334739		0337739	
1/2 TRI x 6	6	0331779					
1 TRI x 6	4	0331819					
1/4 RND x 6	6	0331899	0332899	0334899	0336899	0337899	0339899
3/8 RND x 6	6		0332939	0334939	0336939	0337939	0339939
1/2 RND x 6	6			0334979	0336979	0337979	0339979

Hyprez® Hyprelube® Polishing Stone Lubricant



16 oz. Dip Jar

Part No.510.2082

Now Hyprelube® is available in a wide mouth jar that can be used to pre-soak your polishing stones. This Dip Jar contains 16 fluid ounces of Hyprelube® which can be used not only for use with polishing stones, but is well suited for thinning diamond compounds. Hyprelube®'s versatility does not end there. It is also oil and water soluble.

Hyprez® Hyprelube®, polishing stones, diamond compounds and polishing tools and accessories are the perfect combination for all of your Mould & Die finishing tasks. You can look to Engis® for quality and service at affordable prices. Engis® stocks a large selection of diamond compounds, diamond & CBN grinding pins, wood and felt polishing bobs, polishing stones, ceramic stones and many other fine tools.

Micro motor rotary handpieces, ultrasonic polishing systems and reciprocating profilers are also available from Engis or local distributor. Call Engis® for the location of the nearest distributor. You will be glad you did!

Specially formulated to lubricate while cleaning and preventing stone loading, Hyprez® Hyprelube® is non- hazardous and environmentally friendly. Hyprelube® delivers all of these user friendly advantages:

- Excellent surface finishes
- Stones cut free
- Can be used for roughing and provides for fast cutting
- Economical because the jar can be refilled

Polishing Stone Applications Chart

Type	Surface	TOOL STEEL	ALUMINUM	NON-FERROUS	STAINLESS STEEL	EDM	Method	HAND	PROFILER	ULTRASONIC	Use	DRY	WET
STONES													
EDM	●					●		●	●			●	●
GENERAL PURPOSE													
DS	●	●	●	●	●			●	●			●	●
DM	●	●	●	●	●			●	●			●	●
SPECIALITY													
A/L	●	●						●	●				●
HY	●					●		●	●				●
SILICON CARBIDE													
RG	●	●	●					●	●			●	●

Meister Finish®

Meister Engis® Finish, XEBEC Diamond and Heat Resistant ceramic polishing stones are made of the finest ceramic fiber with a special resin developed originally for the aerospace industry. These virtually unbreakable polishing stones work well in small detail areas such as slots, ribs and other hard to polish areas of moulds and dies. They can be used either by hand or with a reciprocating profiler or best used with any Ultrasonic polishing system.

Since these superior ceramic polishing stones can be shaped easily and come in a variety of grits and sizes, it will make them one of the most valuable tools you will ever use for your most detailed moulds or dies.

There are 3 types of Engis®/XEBEC ceramic stones to tackle your jobs; Meister Finish®, XEBEC Diamond and Heat Resistant, each one designed for your specific task.

- High strength, resists breakage and tearing
- More efficient
- Uniformly fine finishes
- No clogging
- Low heat generation
- Efficiently finishes EDM discharge machining surfaces
- Easy removal of fine burrs
- The sides of the rod type stones can also be used for a variety of finishing tasks
- 7 grits in numerous sizes available

USAGE

- Perfect for precise finishing flat, curves, ribs, edges, etc. on dies and moulds
- High finishing efficiency can be attained without clogging, even for materials such as aluminum, copper, gun metal, etc.
- Use on narrow areas where standard stones are difficult to use
- Use on complex shapes where uniform finishing is difficult
- Meister Finish stones can be used with power tools (i.e., ultrasonic devices and pneumatic tools)



Stone Holders



Item Number	Length	Width of stick	
29950	For Profiler	1/8" Mandrel	A
29925	5-1/2"	3mm round	B
29940	5-3/4"	8-10mm stick	C
29935	5-3/4"	6mm stick	D
29930	5-3/4"	2-4mm stick	E
29945	Set of C,D & E		

100 mm Length	Dark Brown Equivalent to 220 Grit	Brown Equivalent to 300 Grit	Orange Equivalent to 400 Grit	Black Equivalent to 600 Grit	Blue Equivalent to 800 Grit	White Equivalent to 1000 Grit	Red Equivalent to 1200 Grit
.5 x 4	A-D-0504M	A-L-0504M	A-O-0504M	A-P-0504M	A-B-0504M	A-W-0504M	A-R-0404M
.5 x 6	A-D-0506M	A-L-0506M	A-O-0506M	A-P-0506M	A-B-0506M	A-W-0506M	A-R-0506M
.5 x 10	A-D-0510M	A-L-0510M	A-O-0510M	A-P-0510M	A-B-0510M	A-W-0510M	A-R-0510M
.8 x 4	A-D-0804M	A-L-0804M	A-O-0804M	A-P-0804M	A-B-0804M	A-W-0804M	A-R-0804M
.8 x 6	A-D-0806M	A-L-0806M	A-O-0806M	A-P-0806M	A-B-0806M	A-W-0806M	A-R-0806M
.8 x 10	A-D-0810M	A-L-0810M	A-O-0810M	A-P-0810M	A-B-0810M	A-W-0810M	A-R-0810M
1 x 4	A-D-1004M	A-L-1004M	A-O-1004M	A-P-1004M	A-B-1004M	A-W-1004M	A-R-1004M
1 x 6	A-D-1006M	A-L-1006M	A-O-1006M	A-P-1006M	A-B-1006M	A-W-1006M	A-R-1006M
1 x 8	A-D-1008M	A-L-1008M	A-O-1008M	A-P-1008M	A-B-1008M	A-W-1008M	A-R-1008M
1 x 10	A-D-1010M	A-L-1010M	A-O-1010M	A-P-1010M	A-B-1010M	A-W-1010M	A-R-1010M
3mm Diameter	P-M-30M	P-L-30M	P-O-30M	P-P-30M	P-B-30M	P-W-30M	P-R-30M

Engis®/XEBEC Diamond Ceramic Polishing Stones

Try these premium diamond ceramic stones on materials harder than 57 Rc. Slots, ribs, and detailed areas will be processed more efficiently without giving up quality. These stones have diamond throughout, can be shaped and will resist breakage. Try these with your ultrasonic polishing system.

Features:

- Efficiently and cleanly polishes materials harder than HRC57 such as cemented carbide and hardened steels
- Entire surface of the sticks and rods can be used effectively
- Can be shaped easily to desired shape
- Suitable for removing EDM scale, polishing ribs and deburring edges, as well as corners
- Far more efficient than electroplated diamond files, hand lappers, diamond pastes and powders
- Diamonds are embedded in layers, enabling them to be used completely without losing their effectiveness
- Lasts longer than an electroplated diamond file
- Polishes efficiently wet or dry
- Can be used with more efficiency when used with power tools (electric, air, or ultrasonic)
- Rod type stones can be used with rotary handpieces (max. 30,000 r.p.m.)

100 mm Length	Black 200 Grit	Blue/Green 400 Grit	Grey 800 Grit
.5 x 10	D-M-0510M	D-M-0510M	N/A
1 x 4	D-M-1004M	D-F-1004M	D-S-1004M
1 x 6	D-M-1006M	D-F-1006M	D-S-1006M
1 x 10	D-M-1010M	D-F-1010M	D-S-1010M
3 mm Dia.	N/A	PDF30M	N/A
3 mm Dia. x 50 mm	N/A	PDF305	N/A



Heat-Resistant Ceramic Abrasives

ENGIS® XEBEC Heat Resistant ceramic polishing stones have been designed for use with ultrasonic polishing systems. Where other ceramic stones can only withstand up to 100 degrees C, the Heat Resistant stones can withstand temperatures to 200 degrees C.

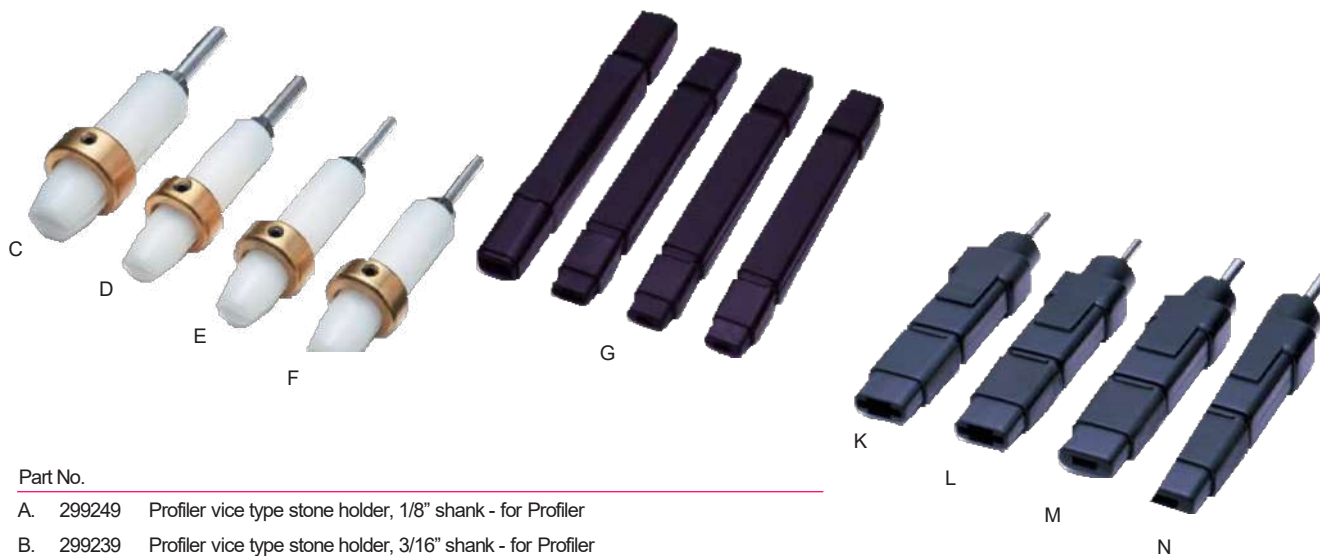
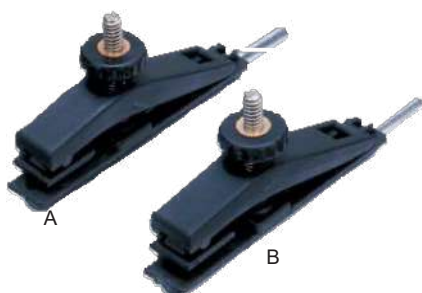
Designed for use with Ultrasonic Polishing Systems.

- Excellent Heat Resistance
- Doesn't Soften
- XEBEC has succeeded in increasing the resistance temperature from 100° C to 200° C with these Heat-Resistant Ceramic Abrasives
- Adding to the same performance of the Meister Finish (doesn't break or crack, excellent sharpness), their durability has been enhanced for prolonged use with Ultrasonic tools
- Most effective on removing EDM scale
- Can be used at full length for finishing slots or ribs

100 mm Length	Violet Equivalent to 120 Grit	Brown Equivalent to 220 Grit	Blue Equivalent to 800 Grit	Red Equivalent to 1200 Grit
1 x 4	A-V-1004M	H-D-1004M	H-B-1004M	H-R-1004M
1 x 6	A-V-1006M	H-D-1006M	H-B-1006M	H-R-1006M
1 x 10	A-V-1010M	H-D-1010M	H-B-1010M	H-R-1010M

Hyprez® Polishing Stone Holders

A new selection of Polishing Stone Holders is now available from Engis® DiaMold® products group. Holders for hand and machine polishing are listed below



Part No.

- A. 299249 Profiler vice type stone holder, 1/8" shank - for Profiler
- B. 299239 Profiler vice type stone holder, 3/16" shank - for Profiler
- C. 299609 Holder Pro for 1/4" Stone (Long), 3/16" shank - for Profiler
- D. 299639 Holder Pro for 1/4" Stone (Short), 3/16" shank - for Profiler
- E. 299679 Holder Pro for 1/8" Stone (Short), 3/16" shank - for Profiler
- F. 299549 Holder Pro for 1 mm ceramic stone, 3/16" shank
- G. 299159 4 piece hand stone holder kit. Holds round and all sizes of square and rectangular polishing stones from 1/16" to 1/2"
- K. 299199 1/8" x 1/2" & 1/4" x 1/4" - 1/8" Shank - for Profiler
- L. 299189 1/8" x 1/4" - 1/8" Shank - for Profiler
- M. 299169 1/8" x 1/4" - 3/16" Shank - for Profiler
- N. 299179 1/8" x 1/4" & 1/4" x 1/4" - 3/16" Shank - for Profiler

Stones, Lapping Stick & File Holders

The Hyprez® Stone and Stick Holder (VEA) will hold sticks and stones up to 1/2" diameter, round, square and rectangular at an angle for those hard-to-reach operations (45 to 90° angles).

The Hyprez® Stone and Stick Holder is for use with the Di-Profilor Reciprocating Hand Machine. It is designed to add greater flexibility to lapping operations.

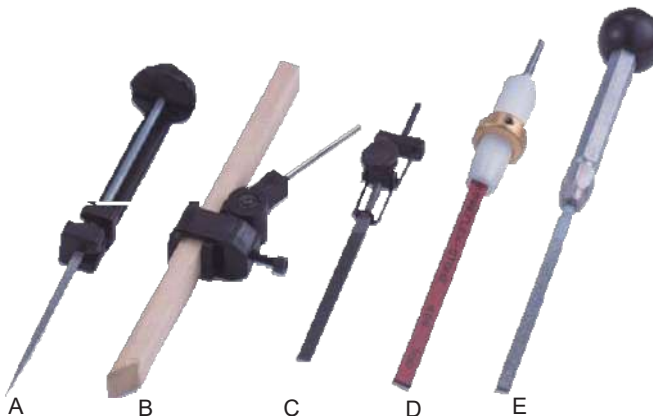
Stone Holder Kit
with accessories – Part No. SHK 101

Accessories include one each:

- Holder VEA
- Abrasive Stones 1/4" x 1/2" x 6"

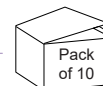
Stone Part Number:
0249109, 0254709, 0356339, 0358339,
0286409

• Hyprez® Lapping Sticks
D, SE, F, SG, H, SJ, K and SL



-
- A. FH.1 - File Holder
 - B. VEA - Stick & Stone Holder
 - C. FVA - File & Shoe Holder
 - D. 29950 - Hyprez® Ceramic Stone Holder
 - E. IF-20 - File Holder
-

Hyprez® Mounted Felt Bobs



Mandrel Mounted

Hyprez® Felt Bobs are made in a broad variety of sizes and degrees of hardness - for any finishing requirement. The mandrels are exactly centered for true-running operation. In ordering, specify part number and hardness desired.

CONES

Soft, Hard

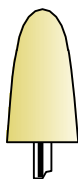
Diameter	Length	Shank
6mm	12mm	3mm or 1/8"
10mm	19mm	3mm or 1/8"
12mm	25mm	3mm or 1/8"
16mm	32mm	3mm or 1/8"
20mm	38mm	3mm or 1/8"
25mm	25mm	6mm or 1/4"
25mm	38mm	6mm or 1/4"

CYLINDERS

Soft, Hard

Diameter	Length	Shank
6mm	12mm	3mm or 1/8"
10mm	12mm	3mm or 1/8"
12mm	25mm	3mm or 1/8"
16mm	32mm	3mm or 1/8"
20mm	32mm	3mm or 1/8"
25mm	25mm	6mm or 1/4"
38mm	38mm	6mm or 1/4"

Other sizes available on request



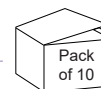
Cone



Cylinder



Hyprez® Wooden Bobs & Cones



Wooden Bobs

Hyprez® Bobs and Cones are available in both soft and hard wood options.

WOODEN BOBS

Soft, Hard

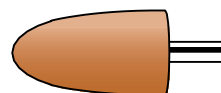
Diameter	Length	Spindle Diameter
8mm	12mm	3mm or 1/8"
12mm	20mm	3mm or 1/8"
16mm	28mm	3mm or 1/8"

WOODEN CONES

Soft, Hard

Diameter	Length	Spindle Diameter
8mm	12mm	3mm or 1/8"
12mm	20mm	3mm or 1/8"
16mm	28mm	3mm or 1/8"

Other sizes available on request



Hyprez® Lapping Sticks

Available in both hard and soft wood options.

Hyprez® Hard Wood Lapping Sticks

Designed for fast stock removal using Hyprez® Diamond Compounds.

Hyprez® Soft Wood Lapping Sticks

Designed for immediate and final polishing. Square and rectangular shapes are bevelled to 45 deg; round sticks are pointed.

All shapes are 150mm long.



All One Size and Wood Hardness
Contained in Each Package



Size (mm)	Shape
6 x 3 x 150	Rectangle
12 x 6 x 150	Rectangle
12 x 8 x 150	Rectangle
19 x 8 x 150	Rectangle
3 x 3 x 150	Square
6 x 6 x 150	Square
3mm Dia x 150	Round
4.5mm Dia x 150	Round
6mm Dia x 150	Round

Other sizes available on request



Hyprez® Polishing Brushes

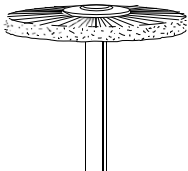
These top quality brushes will hold diamond compounds longer, provide more cutting action, at lower production costs.



Pencil Shape



Cup Shape



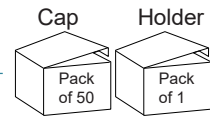
Wheel Shape

Type	Head Diameter	Shank Diameter	Material
Pencil	5.00mm	3/32"	Black Bristle
Cup	10.00mm	3/32"	White Nylon
Cup	10.00mm	3/32"	Black Bristle
Cup	12.00mm	3/32"	White Nylon
Cup	12.00mm	3/32"	White Bristle
Wheel	21.00mm	3/32"	White Nylon
Wheel	21.00mm	3/32"	Black Bristle

Other sizes available on request



Flexicap Seamless Throw-Away Caps



For grinding, deburring, tool and die work, and other production operations, Hyprez® Flexicaps are efficient and economical.

They are seamless, with multi-coated abrasives that assures constant cutting efficiency and uniform surface feet per minute. After repeated uses, only the throw-away cap is discarded - no need to waste an entire tool because of dimensional change.

The hard rubber holder is never exposed to wear.



Maximum Recommended Speeds

5mm Diameter	10,000 rpm
10mm Diameter	8,000 rpm
16mm Diameter	6,000 rpm

Flexicaps Square End		
Easy Order Packs of 50		
Diameter	Coarse	Fine
5mm	SC05	SF05
10mm	SC10	SF10
16mm	SC16	SF16

Rubber Holders		
Diameter	Shank	Code
5mm	1/8"	S05
10mm	1/8"	S10
16mm	1/4"	S16

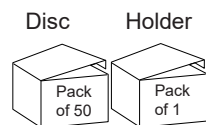
Flexicaps Round End		
Easy Order Packs of 50		
Diameter	Coarse	Fine
5mm	RC05	RF05
10mm	RC10	RF10
16mm	RC16	RF16

Rubber Holders		
Diameter	Shank	Code
5mm	1/8"	R05
10mm	1/8"	R10
16mm	1/4"	R16

Flexicaps Pointed End		
Easy Order Packs of 50		
Diameter	Coarse	Fine
5mm	PC05	PF05
10mm	PC10	PF10
16mm	PC16	PF16

Rubber Holders		
Diameter	Shank	Code
5mm	1/8"	P05
10mm	1/8"	P10
16mm	1/4"	P16

Flexidisc Multi Purpose Abrasive Discs



Self Adhesive Aluminium Oxide Abrasive Cloth Discs

The Flexidisc range can be used with most hand tools and flexible shaft units as the driving equipment.

Recommended Rotation Speeds:

- 1" Diameter - 7,500 rpm
- 2" Diameter - 4,500 rpm
- 3" Diameter - 2,500 rpm



Self Adhesive Abrasive Discs

Disc Diameter	Available Grit Size
1" - 25mm	60, 120, 180
2" - 50mm	60, 120, 180
3" - 75mm	60, 120, 180

Flexible Rubber Holders

Disc Diameter	Shaft Diameter
1"	1/8"
2"	1/4"
3"	1/4"

Foam Faced Rubber Holders

Disc Diameter	Shaft Diameter
1"	1/8"
2"	1/4"
3"	1/4"

Used for Contour Abrading

Self Adhesive Abrasive Strip Material

Available from 1" to 36" wide for specific applications

Please Note - Special Order Only

Helical Laps

Helical Laps provide a simple and economical solution for producing extremely fine tolerances and accuracies in bores and cylindrical parts. Helical Laps can adapt to be used on almost any machine with a rotation spindle, such as a lathe, drill or honing machine. Helical Laps are highly versatile tools that can be used in a wide range of materials and applications. Helical ID and OD Laps are manufactured from a proprietary grade of annealed grey cast iron with a grain structure designed to optimize the abrasive charging of the tool. The lap incorporates a helical slot to allow for expansion and contraction of the tool. Helical Laps are primarily finishing tools to bring parts to size, reduce the rough peaks of a surface and correct common imperfections in bore and cylinder geometry such as roundness, bellmouth and barrel shape. The tools are used with a lapping compound (diamond, aluminium oxide, silicon carbide, boron carbide, garnet) and typically, only a small amount of material is removed. The tools should always be ordered to the true ID or OD of the part to be worked and then they are manufactured with the correct starting size.



Helical Lap Uniform Expansion



Expanded Barrel Lap

Internal Laps

Internal laps mount on a tapered arbor or mandrel. The tool expands as the lap is moved up the tapered arbor. Because the internal taper of the lap is closely matched to the taper of the arbor, unlike barrel laps which only expand in the middle, Helical Laps expand uniformly across the entire length of the lap. This is a unique and key feature for achieving precise bore roundness and straightness. As stock is removed, simply tap the lap up the arbor. When Helical Laps are used in combination with our tightly graded, high quality lapping and polishing abrasives, exceptional bore surface finishes can be obtained. Standard lap diameters range from 3/64" up to 3". Other diameters (including metric) and lengths are available upon request. Standard size tools are generally in stock.

External Laps

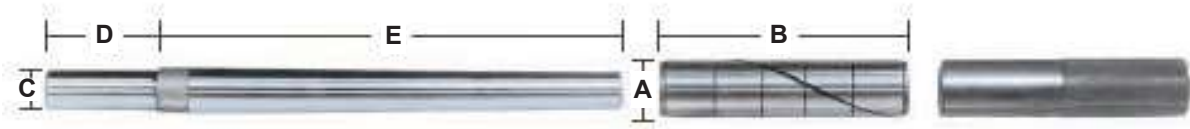
External lap insert sleeves are made slightly oversized to allow for starting clearance and are also designed to uniformly contract as the external lap holder is tightened. Worn lap inserts can be quickly replaced.

Abrasives

A special note about abrasives. It is possible to use Helical Laps to produce desired finishes easily and quickly; however, if more than one abrasive size is used, in order to achieve the desired finish in the least amount of time, it is highly recommended to keep separate laps dedicated to each abrasive size used. By following this recommendation, you will avoid having to go back to remove scratches produced by larger size abrasive particles.



Hyprez® Helical Laps - Internal

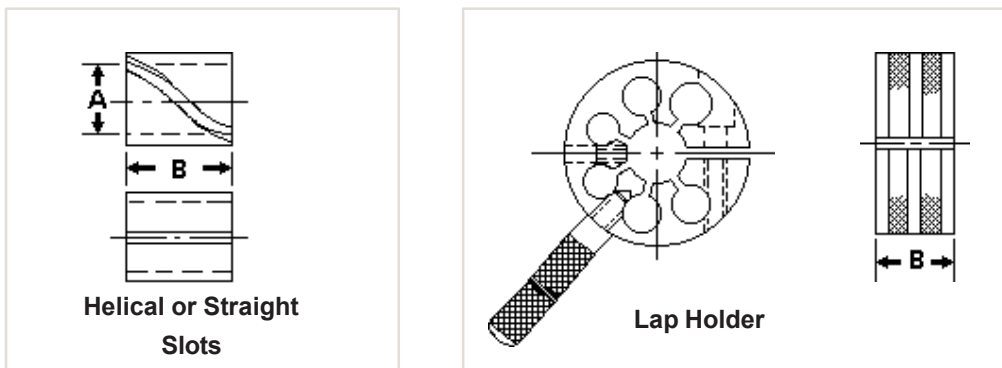


Standard Specification and Sizes

Internal Helical Slot Laps		Corresponding Arbor				Corresponding Expander Number
Lap Sizes (A)	Length (B)	Arbor Number	Shank Diameter (C)	Shank Length (D)	Taper Length (E)	
3/64	1/2	4/0	1/8	3/4	1 1/2	4/0
1/16 5/64	5/8	3/0	1/8	3/4	1 1/2	3/0
3/32 7/64	3/4	2/0	1/8	3/4	1 5/8	2/0
1/8 5/32 9/64 11/64	7/8	0	1/8	3/4	1 3/4	0
3/16 13/64	1 3/8	1	3/16	1	2 3/4	1
7/32 15/64	1 3/4	2	3/16	1	3	2
1/4 9/32 17/64 19/64	2	3	3/16	1	4	3
5/16 11/32 21/64 23/64	2	4	7/32	1	4	4
3/8 13/32 25/64 27/64	2 1/2	5	9/32	1 1/2	5	5
7/16 15/32 29/64 31/64	2 1/2	6	5/16	1 1/2	5	6
1/2 17/32 9/16 19/32 33/64 35/64 37/64 39/64	3 1/4	7	3/8	1 1/2	6	7
5/8 21/32 11/16 23/32 41/64 43/64 45/64 47/64	3 1/4	8	13/32	1 1/2	6	8
3/4 25/32 13/16 27/32 49/64 51/64 53/64 55/64	3 1/2	9	1/2	2	7	9
7/8 29/32 15/16 31/32 57/64 59/64 61/64 63/64	3 1/2	10	9/16	2	7	10

Larger diameter, metric sizes and specials can be quoted on request.

Hyprez® Helical Laps - External



Standard External Laps and Holders

Lap Sizes (A)	Holder Number	Length Short (B)	Length Medium (B)	Length Long (B)	Lap Sizes (A)	Holder Number	Length Short (B)	Length Medium (B)	Length Long (B)
Note : Length B of Holder must correspond with Length B of External Lap									
3/64 1/16 5/64 3/32 7/64 1/8	0	3/8	1/2	1	17/32 9/16 19/32 5/8	7	1/2	1	2
9/64 5/32 11/64 3/16	1	1/2	3/4	1 1/2	21/32 11/16 23/32 3/4	8	1/2	1	2
13/64 7/32 15/64 1/4	2	1/2	3/4	1 1/2	25/32 13/16 27/32 7/8	9	1/2	1	2
17/64 9/32 19/64 5/16	3	1/2	3/4	1 1/2	29/32 15/16 31/32 1	10	1/2	1	2
21/64 11/32 23/64 3/8	4	1/2	3/4	1 1/2	1 1/16 1 1/8 1 3/16 1 1/4	11	3/4	1 1/2	2 1/2
25/64 13/32 27/64 7/16	5	1/2	3/4	1 1/2	1 5/16 1 3/8 1 7/16 1 1/2	12	3/4	1 1/2	2 1/2
29/64 15/32 31/64 1/2	6	1/2	3/4	1 1/2	1 9/16 1 5/8 1 11/16 1 3/4 1 13/16 1 7/8 1 15/16 2	13	3/4	1 1/2	2 1/2

Minimo® One Series

The Minimo® One Series hand finishing system is designed to provide unsurpassed accuracy, reliability, power and versatility, while being comfortable and natural to use with minimum fatigue. An innovative hand switch, built right into the handpiece itself, is just one of many new features that makes Minimo® the most advanced and easy to use handpiece on the market.

Plus, when you use the Minimo® One system in conjunction with DiaMold® diamond compounds, lubricants and the full range of toolroom products from Engis®, you can be assured of high precision results, time and time again.

A - Collets can be changed easily using a V wrench.

B - Minimo® rotary heads utilize a simple tool changing mechanism that does not require wrenches or keys. Tools can be easily changed out by a quick turn of the collet release ring. This facilitates the use of polishing tools with different shank diameters by simply switching out the collets.

C - The Minimo® polishing system offers maximum flexibility with a wide range of both heads and motor assemblies. By optimizing the head and motor assembly combination for each application, you have the perfect tool for every job. The head can be mounted to a motor in a snap.

D - In addition to the On/Off switch on the power supply, each motor is supplied with its own On/Off switch. This allows the operator to stop and start the handpiece quickly, even when working out of reach of the power supply. The switch is inset in the tool to minimize the risk of accidentally starting the motor.

E - Removable Curled Power Cord

Easy Exchange of Collets (A)



Easy Exchange of Tools (B)



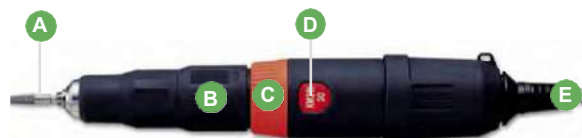
Versatility of Handpieces (C)



Hand Switch for Maximum Control (D)



Motor Model & Maximum Speed (x 1,000)



Minimo® One Handpieces & Head Attachments

Adding to the Minimo® One's versatility is a complete array of attachments, including heads, clamp heads and gear reduction units for more power.

Versatility of Handpieces: Minimo® One Rotary Handpieces consist of a combination of various heads and motor assemblies of different specifications. Different combinations of heads, motor assemblies and other attachments can customize the tool for different applications. Heads can be mounted to motors in a snap.

Variety of Handpieces: Engis® offers a full selection of handpieces, ranging from Standard, Slender and Heavy Duty Rotary units to POLYTOR Ultrasonic systems – the ideal solution for removing EDM scale.



Polytor Ultrasonic Handpiece



Standard Rotary Straight Head Handpiece



Rubron Lateral Swing Handpiece



Anglon Angle Head Handpiece



Mini-Belt Sander



Recipron Reciprocating Handpiece

Minimo® One Series – Table of Contents

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C 2212 DC Power Pack

2 Standard Handpiece Stations
60 VA
Input Voltage: AC230V ± 5% (50/60 Hz)
Output Voltage: DC 1-30 V AC
144mm (W) x 218mm (D) x 116mm (H)
5.5 lbs (2.5kg)



Features:

- This high-end power pack includes new functions for maximizing the performance of Minitor handpieces.
- The C2212 power pack identifies the type of handpieces which are connected indicates rotation speed and controls optimum torque.
- Also compatible with the earlier handpieces which do not have the motor identification chip.
- Convenient digital display of output rate (%).
- Includes RM11 Rubber Cradle, CA11 Power Cord, and PFU-2.0A Fuse

Product Details

- **Handpiece identification function:** When the Ver.2 handpieces is connected, the Power pack identifies its motor type, indicates its rotation speed and controls optimum Torque
- **Digital display:** Identifies a connected handpiece type, the power pack automatically selects its display type (rotation speed (x1000 min) or output rate (rate %))
- **Error code display function:** Errors of power pack or handpiece are indicated as error code on the display
- **Microcomputer control:** The high-end microcomputer control identifies the connected handpiece type and manages its optimum output
- **Rotation direction switch:** Allows the user to change the rotation direction of handpiece (forward or reverse).

P 30 Polytor Power Pack

1 Ultrasonic Handpiece Station
30 VA
Input Voltage: AC100~AC240V (50/60Hz)
Output Voltage: See Below
144mm (W) X 221mm (D) X 116mm (H)
Approx. 1.3kg



Features:

- The P30 is equipped with a feedback feature to detect overloading.
- Features an audible beep that lets you know when the handpiece is turned ON/OFF or when the tool is overloaded. This feature allows the handpiece to perform to its full capability without damaging itself or the power pack.
- Output Voltage: 27W max. (STROKE CONTROL, Power Mode on), 18W max. (STROKE CONTROL, Power Mode off), and 18W max. (VOLTAGE CONTROL)
- Includes RM11 Rubber Cradle.
- CA11(115V) power cord and US21 Ultrasonic handpiece are sold separately.

- **LED load meter:** Loaded condition in operation is displayed on LED meter. Error is alerted by LED meter and sound when overloading.

- **External I/O signal control function is standard:** Input/output signals are available from the foot switch socket located on the back of the power pack.

- **Foot Switch holding function (when using V301 foot switch):** Rotation speed set by the variable foot switch can be maintained by pressing the hand switch.

- **NEW BRAKING SYSTEM:** Quick braking system stops the handpiece immediately. In addition, they system can quickly change rotation speed shifting from high to low speed.

US21 Polytor (Ultrasonic)

The POLYTOR handpiece (US21) is indispensable for mold finishing, providing powerful and stable ultrasonic vibration.

The US21 is great for small and intricate work especially in slots and ribs where hand work is difficult. Because the reciprocation is short and moves with ultrasonic speed, the tool tip can be used in corners, wall ends and for fine detail work.

Since the frequency is adjusted automatically, operation of the US21 is simple and easy. Because of the tool's aggressive cutting action, processing time is reduced dramatically, saving 70 to 75% of finishing time while improving quality. A large variety of tools for use with the US21 are available for cleaning up milled and EDM surfaces to mirror polishes

POLYTOR HANDPIECE US21



Features & Benefits

- Removing EDM scale
- Convenient for pattern cutting of printed circuit boards
- Ideal for deburring, grinding, cutting, polishing and honing
- Finishing precious metals and jewels

The Hand Switch enables the tool to be switched ON/OFF on the handpiece side as well; this offers maximum convenience when work requires frequent switching ON/OFF or when working out of reach of the Power Pack. This adoption of the new mechanism improves the switch durability as well.

Features & Benefits

- Compact and lightweight
- Built-in ON/OFF SWITCH
- Removable curled power cord makes storage convenient
- Employs an advanced high performance oscillating unit
- Compatible with P30 Power Pack

Standard Tools (1 pc each)

- SA8103 holder with SA4102 diamond file
- SA8151 holder with SA5005 ceramic stone





Toolholder Selection for Polytor Ultrasonic

SA8101	d = Ø1mm	
SA8102	d = Ø2mm	
SA8103	d = Ø3mm	
SA8104	d = Ø4mm	
SA8151	t = 1mm	
SA8152	t = 2mm	
SA8153	t = 3mm	
SA8154	t = 4mm	
SA8181	t = 0.5mm	
SA8182	t = 1mm	

Standard Rotary Handpieces

The Minimo[®] One Handpieces are designed to provide the user with unsurpassed versatility with its quick-change H011 Standard Head options. Minimo[®] heads and motors have matching threads which make changing a straight tool to a 90 degree tool a very simple process. Tool change is a 1/4 turn process without the need of a special wrench or spanners.

Each motor has an On/Off switch on its side for one-hand operation. Ø2.34mm and Ø3.00mm collets are standard with each handpiece. Seven other collets sizes are available and sold separately.

V112H		2,000 - 50,000 RPM
V212H		2,000 - 40,000 RPM
M112H		1,000 - 35,000 RPM
M212H		1,000 - 30,000 RPM
V212		1,000 - 25,000 RPM
M112		2,000 - 20,000 RPM
M212		1,000 - 15,000 RPM
M112G		660 - 6,600 RPM

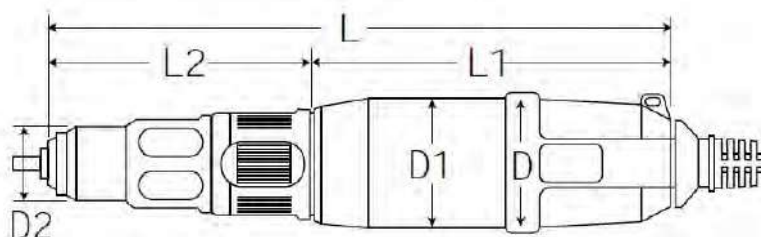
Minimo[®] One Handpieces are used with C2212 Power Pack

Standard Rotary Specifications

	<u>V112H</u>	<u>M212H</u>	<u>M112H</u>	<u>V212H</u>
	Ultra-high speed	High speed	High speed	High speed
Motor Model	KV112H	KM212H	KM112H	KV212H
Head Model	H011	H011	H011	H011
Hand Switch Color	Ivory	Red	Violet	Pink
Speed Range RPM	2,000–50,000	3,000–30,000	3,500–35,000	2,000–40,000
Input Voltage (D.C.V.)	3–30	3–30	3–30	3–30
No-load Current (D.C.A.)	0.45	0.40	0.35	0.40
Maximum Torque (cN.M)	2.3	2.8	3.4	2.7
Weight (g) [not including cord]	204	290	232	240

Dimensions (mm)

L	147	167	160	149
L1	76	96	89	78
L2	71	71	71	71
D	Ø29	Ø33	Ø29	Ø33
D1	Ø26.4	Ø30.4	Ø26.4	Ø30.4
D2	Ø14.5	Ø14.5	Ø14.5	Ø14.5



Standard Rotary Specifications (Cont.)

Speed	Medium speed	Medium speed	Medium speed	Geared low speed
Motor Model	KM212	KM112	KV212H	KM112G
Head Model	H011	H011	H011	H011
Hand Switch Color	Green	Blue	Orange	Yellow
Speed Range RPM	1,500–15,000	2,000–20,000	2,500–25,000	660–6,600
Input Voltage (D.C.V.)	3–30	3–30	3–30	3–30
No-load Current (D.C.A.)	0.30	0.30	0.40	0.34
Maximum Torque (cN.M)	5.9	4.5	3.9	9.8
Weight (g) [not including cord]	290	232	240	273

Dimensions (mm)

L	167	160	149	176
L1	96	89	78	105
L2	71	71	71	71
D	Ø33	Ø29	Ø33	Ø29
D1	Ø30.4	Ø26.4	Ø30.4	Ø26.4
D2	Ø14.5	Ø14.5	Ø14.5	Ø14.5

Collet Selection Table (Standard Rotary)



Code	KP-050 (mm)	KP-051 (mm)	KP-007 (mm)	KP-005 (mm)	KP-052 (mm)	KP-031 (mm)	KP-036 (mm)	KP-032 (mm)	KP-033 (mm)
Inside Diameter (mm)	Ø1.0	Ø1.2	Ø1.4	Ø1.6	Ø1.8	Ø2.0	Ø2.34 (3/32")	Ø3.0	Ø3.175 (1/8")

Slender Rotary Handpieces

These are small and lightweight handpieces with precision balanced motors for vibration-free operation – very comfortable to hold and use for very long periods of time.

Ø2.34mm and Ø3.00mm collets are standard with each handpiece. Seven other collets size are available and sold separately.

V112HS



2,000 - 50,000 RPM

M112HS



1,000 - 35,000 RPM

M112S



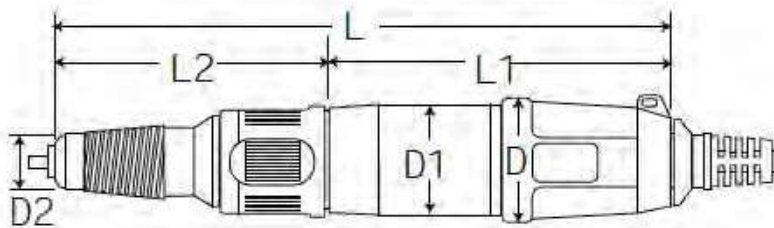
1,000 - 20,000 RPM

Slender Rotary Specifications

	V112HS	M112HS	M112S
Speed	Ultra-high speed	High speed	Medium speed
Motor Model	KV11H	KM21H	KV11
Head Model	H021	H021	H021
Hand Switch Color	Ivory	Pink	Blue
Input Voltage (D.C.V.)	3–30	3–30	3–30
No-load Current (D.C.A.)	0.45	0.40	0.30
Maximum Torque (cN.M)	2.3	2.7	4.5
Weight (g) [not including cord]	192	228	222

Slender Rotary Specifications (Cont.)

	<u>Dimensions (mm)</u>			
L	145	158	147	158
L1	76	89	78	89
L2	69	69	69	69
D	Ø29	Ø29	Ø33	Ø29
D1	Ø26.4	Ø26.4	Ø30.4	Ø26.4
D2	Ø10.8	Ø10.8	Ø10.8	Ø10.8



Minimo[®] Heavy-Duty Rotary Handpieces

The Minimo[®] Heavy Duty Handpiece Series is designed with a reinforced housing. It accepts shank sizes up to 6.35mm for heavy cuts and provides unsurpassed versatility with its quick-change head options. Minimo[®] heads and motors have matching threads which makes changing a straight tool to a 90 degree tool a very simple process without the need of a special wrench or spanners. Each motor has an on/off switch on its side for one-hand operation.

M 2 1 2 H D High Speed Handpiece

Offers a robust reinforced head housing for added strength and easy grip. Accepts larger shank diameter tooling up to 1/4" diameter. Head is easily removed from its screw mount and replaced with other optional heads. Used with C2212 Power Pack.

Technical Data

- **Standard Rotary**
- **Standard Collets: Ø3.00mm & Ø6.00mm**
- **Speed Range: 3,000-30,000 RPM**



Head: H031
Motor: KM212H/ 3,000-30,000 RPM

M212D Medium Speed Handpiece

The lower RPM of this tool offers a higher torque load ratio than the faster RPM model shown on the previous page. Used with the C2212 Power Pack

Technical Data

- Standard Rotary
- Standard Collets: Ø3.00mm & Ø6.00mm
- Speed Range: 1,500-15,000 RPM

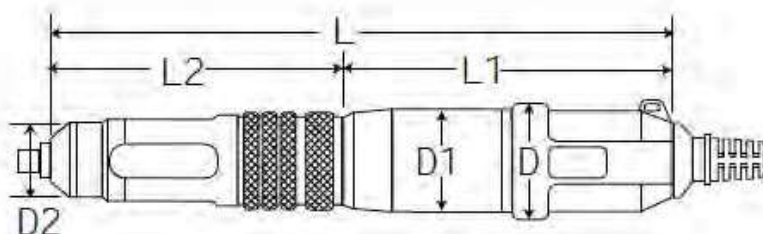


Head: H031
Motor: KM212 / 1,500-15,000 RPM

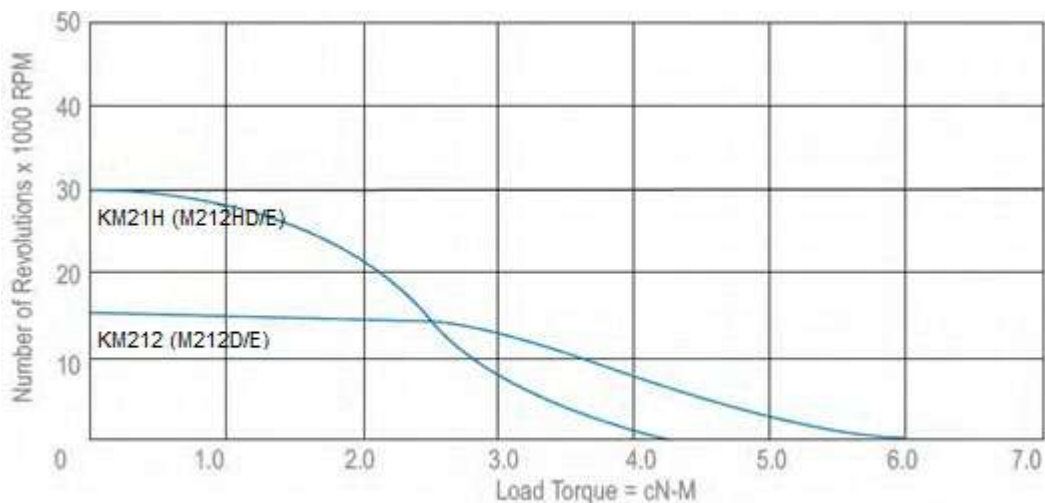
Heavy Duty Rotary Specifications

	M212HD	M212D
Speed	High speed	Medium speed
Motor Model	KM212H	KM212
Head Model	H031	H031
Hand Switch Color	Red	Green
Speed Range RPM	3,000–30,000	1,500–15,000
Input Voltage (D.C.V.)	3–30	3–30
No-load Current (D.C.A.)	0.40	0.30
Maximum Torque (cN.M)	4.2	5.9
Weight (g) [not including cord]	350	351
Dimensions (mm)		
L	177	177
L1	96	96
L2	81	81
D	Ø33	Ø33
D1	Ø30.4	Ø30.4
D2	Ø20	Ø20

Heavy Duty Rotary specifications (cont.)



Speed/ Torque Curve (data for different motor models)



Collect Selection Table (heavy duty rotary)



Code	KP-061 (mm)	KP-062 (mm)	KP-063 (mm)	KP-066 (mm)	KP-067 (mm)	KP-060 (mm)	KP-064 (mm)
Inside Diameter (mm)	Ø2.34 (3/32")	Ø3.0	Ø3.175 (1/8")	Ø4.0	Ø5.0	Ø6.0	Ø6.35 (1/4")

M212LRV Rubron System

The Rubron is a unique handpiece with lateral (side-to-side) movement adjustable up to 1.6mm, ideal for finishing narrow slots and grooves, plus deep recesses where precise control is needed.

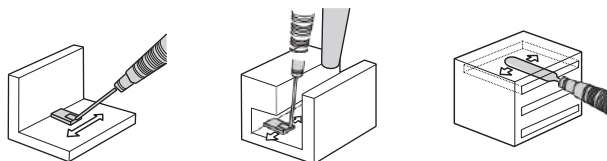
The Rubron has a tapered toolholder nose to aid in getting into those hard-to-reach areas.

The V-shaped tool holder chuck mounts shank sizes from 1.5 to 4.7mm shafts.

The motor has a built-in ON/OFF switch for easy one-hand operation and is powered by the C2212 Power Pack.



Head: H311
Motor: KM212L / 800-8,000 RPM

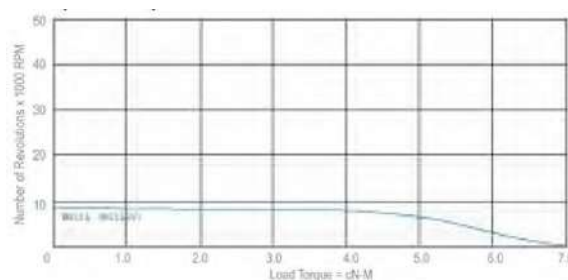


Examples of applications

Rubron Specifications

	M212LRV
Frequency (times/min)	800 – 8,000
Head Amplitude (mm)	0–1.6
Tool Shank Diameters (mm)	1.5–4.7
Input Voltage (D.C.V.)	3–30
No-load Current (D.C.A.)	0.25
Maximum Torque (cN-M)	6.9
Hand Switch Color	Black
Weight (g)	300

Speed/ Torque Curve



Note: The amplitude depends on the length of the tool used.

Anglon System

Anglon tools are offered with heavy duty 90° or 120° angled head designs suitable for grinding and polishing of both flat and curved surfaces, especially on those hard-to-reach internal surfaces.

Each tool features a built-in ON/OFF switch, two standard collets (3/32" & 1/8") and a quick and easy tool changing mechanism - no wrenches are required!

Anglon tools offer quick and easy tool exchange - simply turn the collet release ring to lock or remove the tool.



M112GRAD Low Speed Tool with 90° angle head

Technical Data

- Standard Collets: Ø3.00mm & Ø2.34mm
- Speed Range: 620 - 6,200 RPM
- High torque
- Used with C2212 Power Pack



Head: H221
Motor: KM112G

M212RAD Medium Speed Tool with 90° angle head

Technical Data

- Standard Collets: Ø3.00mm & Ø2.34mm
- Speed Range: 1,420 - 14,200 RPM
- Used with C2212 Power Pack



Head: H221
Motor: KM212

M112GA Low Speed Tool with 120° angle head

Technical Data

- Standard Collets: Ø3.00mm & Ø2.34mm
- Speed Range: 630 - 6,300 RPM
- High torque
- Used with C2212 Power Pack



Head: H231
Motor: KM112G

M212A Medium Speed Tool with 120° angle head

Technical Data

- Standard Collets: Ø3.00mm & Ø2.34mm Speed Range: 1,440 - 14,400 RPM
- Used with C2212 Power Pack

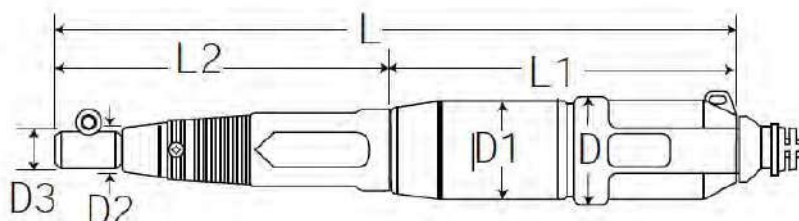


Head: Head: H231
Motor: KM212

Anglon Specifications

	M112GRAD	M212RAD	M112GA	M212A
Speed	Low speed high torque	Medium speed	Low speed high torque	Medium speed
Motor Model	KM112G	KM212	KM112G	KM212
Head Model	H221	H221	H231	H231
Hand Switch Color	Yellow	Green	Yellow	Green
Speed Range RPM	620–6,200	1,420–14,200	630–6,300	1,440–14,400
Input Voltage (D.C.V.)	3–30	3–30	3–30	3–30
No-load Current (D.C.A.)	0.35	.40	0.35	0.40
Maximum Torque (cN.M)	9.8	5.9	9.8	5.9
Weight (g) [not including cord]	368	387	351	395
Dimensions (mm)				
L	167	158	183	174
L1	105	96	105	96
L2	62	62	78	78
D	Ø29	Ø33	Ø29	Ø33
D1	Ø26.4	Ø30.4	Ø26.4	Ø30.4
H	47.5	47.5	47.5	47.5

Anglon Specifications (cont.)

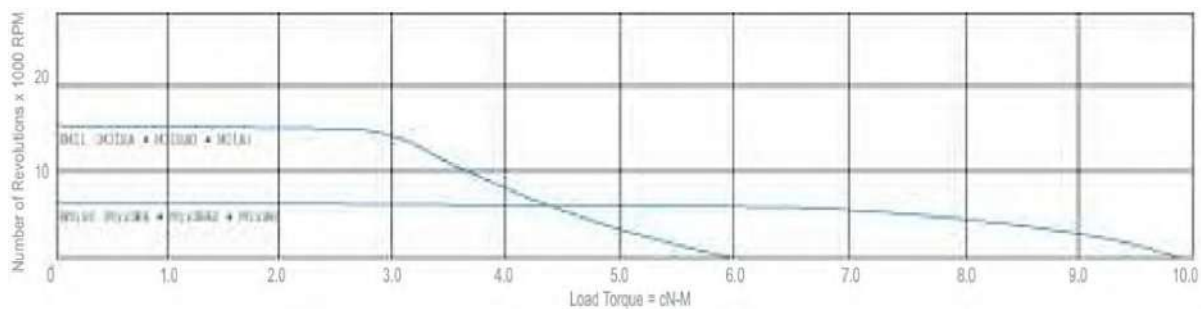


Collet Selection Table (Anglon Tools)



Code	KP-050 (mm)	KP-051 (mm)	KP-007 (mm)	KP-005 (mm)	KP-052 (mm)	KP-031 (mm)	KP-036 (mm)	KP-032 (mm)	KP-033 (mm)
Inside Diameter (mm)	Ø1.0	Ø1.2	Ø1.4	Ø1.6	Ø1.8	Ø2.0	Ø2.34 (3/32")	Ø3.0	Ø3.175 (1/8")

Speed/Torque Curve (data for different motor models)



RE 112 & RE 212

The Recipron handpiece generates a reciprocating stroke, ideal for filing, lapping, stoning, polishing and scraping operations. Comfortable hand fitting pistol grip with built-in ON/OFF SWITCH provides greater processing accuracy. Smooth operation, vibration free. Eliminates operation fatigue.

RE 112 :

- Stroke range: 0 - 8 mm
- Stroke speed: 260 - 3,500 times/min.
- Stroke-oriented type

RE 212 :

- (Speed model) Stroke range: 0 - 2 mm
- Stroke speed: 460 - 7,000 times/min.
- Speed-oriented type

Power Pack : Used with C2212 Power Pack.

Features & Benefits

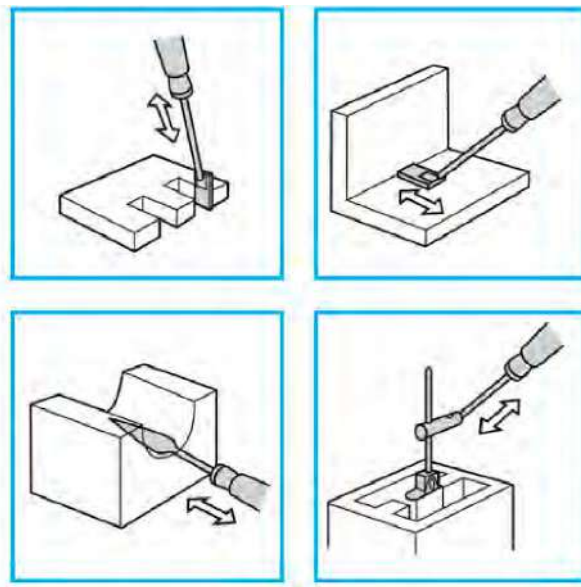
- **Slim and smooth body shape allows more accurate processing.**
- **2 modes of the tool holder action. When the spindle securing knob is released, the toolholder will rotate freely, ensuring tools to fit the surface of the workpiece.**
- **Built-in ON/OFF SWITCH.**
- **2 models to choose from.**

The Hand Switch is standard equipment on the pistol-shaped handpiece. To ensure manipulations by the fingertip only, the switch is recessed at a position on the grip where you can easily use it.



Hand Switch enables quick and easy ON/OFF operations

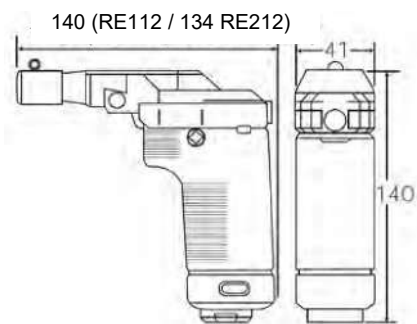
Examples of applications below:



Recipron Specifications

	RE112	RE212
Stroke (m/min)	0–8	0–2
Speed Range (times/min)	260–3,500	460–7,000
Input Voltage (D. C. V.)	3–30	3–30
No-load Current (D. C. A.)	0.3	0.35
Diameter of Mountable Shafts (mm)	2.0–6.35	2.0–6.35
Carbon Brush	KE-580	KE-580
Weight (g)	790	783

Dimensions



A handy type belt sander, equipped with ON/OFF SWITCH, that exerts its great effect in deburring, grinding and polishing.

- Flexibly addresses machining of small parts and objects of complicated shapes.
- A large variety of exclusive endless belts are available that are suitable for various materials including metals, ceramics, stone and wood.
- Quick and easy exchange of belts.
- Optional belt arms are available, which allow you to extend the scope of applications.
- Built-in ON/OFF SWITCH.
- Removable curled power cord makes storage convenient.

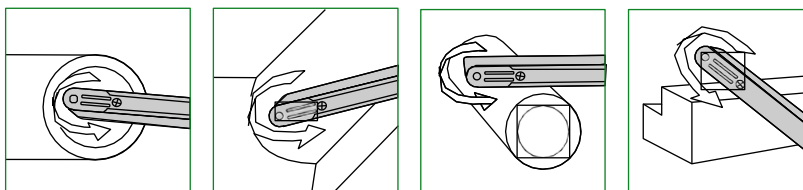
Power Pack : used with C2212 power packs.

Hand Switch enables quick and easy ON/OFF operations

The Hand Switch is standard. To ensure manipulations by the fingertip only, the switch is built in at a position on the grip where you can use it easily.



Examples of applications



BS312

The main body is equipped with the belt arm H82 as standard; belts with a width of 6 or 8 mm can be used.

MINI BELT SANDER SPECIFICATIONS

• Model	BS312	Dimensions
• No-load Belt Speed (m/min)	49 - 2,700	
• Input Voltage (D.C.V.)	3 - 30	
• No-load Current (D.C.A.)	0.3	
• Carbon Brush	KE-580	
• Weight (g)	440	

- Abrasive belt for the Mini Belt Sander (Circumference: 300mm)

* In addition to the belts described here, many others are available; please see Section O-1.

• Sand Belt		• Diamond Belt (Soft type)	
W = 4mm	W = 8mm		
#80 F 1001	#80 F 1021	#180 F 1121	#600 F 1125
#120 F 1002	#120 F 1022	#240 F 1122	#800 F 1126
#180 F 1003	#180 F 1023	#320 F 1123	#1000 F 1127
#320 F 1004	#240 F 1024	#400 F 1124	
W = 6mm	#320 F 1025		
#80 F 1011	#400 F 1026		
#120 F 1012	#600 F 1027		
#180 F 1013	#800 F 1028		
#320 F 1014	#1000 F 1029		

- Belt Arm

Standard Outfit

H82 Standard belt arm (applicable belt width: 6 and 8 mm)



Option

H81 Thin belt arm (applicable belt width: 4 and 6 mm)





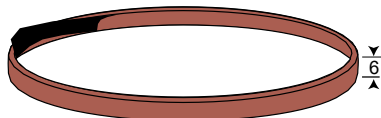
Mini Sand Belts

(circumference 300 mm)

- These belts are only applicable to MINIMO MINI BELT SANDER
- There are various types of belts of different materials. Wide selection available.

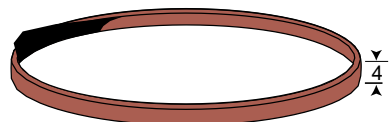
Standard type sand belts for MINI BELT SANDER are strong in cutting power and resist clogging.

There are sand belts with three different widths (4 mm, 6 mm and 8 mm) applicable to metal or wood grinding.



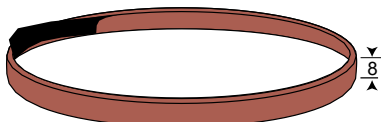
6mm

#80	F 1011
#120	F 1012
#180	F 1013
#320	F 1014



4mm

#80	F 1001
#120	F 1002
#180	F 1003
#320	F 1004



8mm

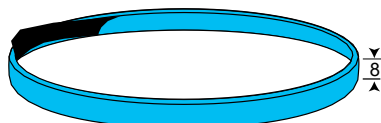
#80	F 1021
#120	F 1022
#180	F 1023
#240	F 1024
#320	F 1025
#400	F 1026
#600	F 1027
#800	F 1028
#1000	F 1029

Zirconia Belt

(circumference 300 mm)

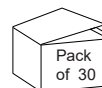
Coated with zirconia grains developed for hard-to-cut materials such as aluminum die-cast. Because of the special coating method used for zirconia grains, stable cut ability can be maintained to create smooth and uniform surfaces under diverse cutting conditions. These belts are capable of deburring such metals as aluminum, brass and stainless steel.

(Not applicable to the Angle arm.)



Width 8 mm

#80	F 1091
#120	F 1092





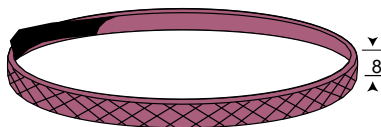
Diamond Belt/Hard Type

(circumference 300 mm)

Hard type cloth belts specially coated with diamond grains.

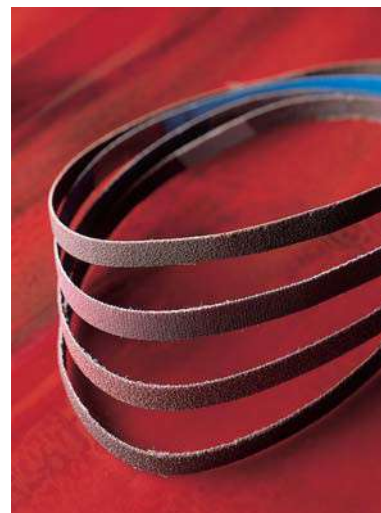
Diamond mesh pattern makes it easy to remove the grinding debris and reduce heat. These belts are most suitable for surface finishing or deburring of ceramic, grinding of stone or glass or surface finishing of dies. Because of the properties of the diamond grains and the hardness of sand belt base material, their grain size is slightly rougher than that of sand paper.

(Not applicable to the Angle arm.)



W = 8mm

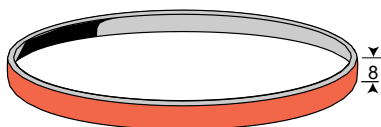
#80	Black	F 1101
#120	Sky Blue	F 1102
#180	Orange	F 1103
#240	Green	F 1104
#320	Purple	F 1105
#400	Brown	F 1106
#600	Red	F 1107
#800	White	F 1108
#1000	Pink	F 1109



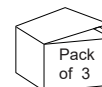
Diamond Belt/Soft Type

(circumference 300 mm)

Soft type twill cloth belt specially coated with diamond grains. Aside from excellent grinding ability and soft contact, they also feature a perfect fit with round work pieces. They are most suitable for precision polishing of carbide, grinding or polishing of ceramics, stone and glass or surface finishing of dies.



#180	F 1121
#240	F 1122
#320	F 1123
#400	F 1124
#600	F 1125
#800	F 1126
#1000	F 1127



Ranging from the ultra-high speed type to the low speed geared type, 7 types of micromotors, each with distinctive features, are available in the product line. Engis[®] unique product line answers a wide variety of customer needs.

The handpiece can be separated. The motor from the head; and can be purchased separately.

KV112H **Ultra-high speed type**

Speed Range: 2,000-50,000 RPM

Torque: 230g-cm

Carbon brush: KE-605

Hand Switch Color: Ivory



KM112H

Speed Range: 1,000-35,000 RPM

Torque: 350g-cm

Carbon brush: KE-575

Hand Switch Color: Violet



KM212H

Speed Range: 1,000-30,000 RPM

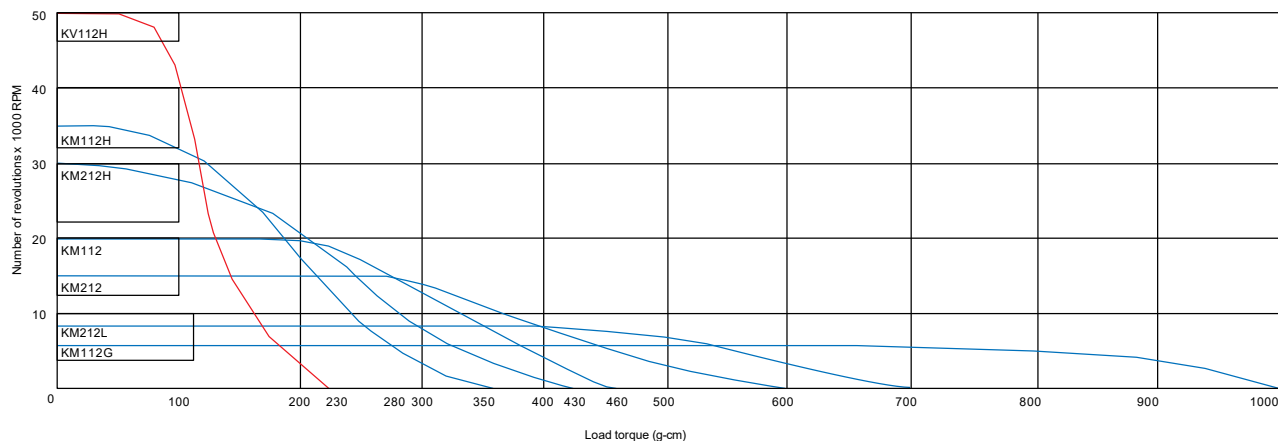
Torque: 430g-cm

Carbon brush: KE-580

Hand Switch Color: Red



Speed/Torque Curve (data for different motor models)



K M 1 1 2

Speed Range: 1,000-20,000 RPM

Torque: 460g-cm

Carbon brush: KE-575

Hand Switch Color: Blue



K M 2 1 2

Speed Range: 1,000-15,000 RPM

Torque: 600g-cm

Carbon brush: KE-580

Hand Switch Color: Green



K M 2 1 2 L Low speed type

Speed Range: 800-8,000 RPM

Torque: 700g-cm

Carbon brush: KE-580

Hand Switch Color: Black



K M 1 1 2 G Low speed gear type

Speed Range: 660-6,600 RPM

Torque: 1,000g-cm

Carbon brush: KE-575

Hand Switch Color: Yellow



The most complete line of heads for a wide range of applications. Grinding, deburring, drilling, lapping, polishing and more can be performed using a combination of these heads and motors. Heads and motors are attached in a snap.

H 0 1 1

Standard Head

The most universal head.
Standard collets 2.34 & 3.00mm. KP-036 & KP-032



H 0 2 1

Slender Head

Slim & lightweight - suitable for delicate processing work.
Standard collets 2.34 & 3.00mm. KP-036 & KP-032



H 0 3 1

Heavy-Duty Head

Standard collets 3.00 & 6.00mm. KP-060 & KP-062



H 0 4 1

Long Slender Head

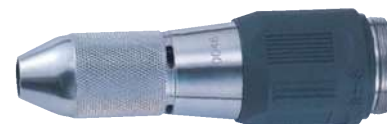
Ideal for hard to reach areas
with reach size 12mm x 72mm.
Standard collets 2.34 & 3.00mm. KP-036 & KP-032



H 0 5 1

Air Head

Produces a jet of air around the tool to blow shavings and dust off work area.
Standard collets 2.34 & 3.00mm. KP-036 & KP-032



H 2 1 1

Anglon Head 90°

Maximum speed - 15,000 RPM

Standard collets 2.34 & 3.00mm. KP-021 & KP-022



H 2 2 1

Heavy-Duty Anglon Head 90°

Maximum speed - 15,000 RPM.

Standard collets 2.34 & 3.00mm. KP-036 & KP-032



H 2 3 1

Heavy Duty Anglon Head 120°

Maximum speed - 15,000 RPM

Standard Collets 2.34 & 3.00mm. KP-036 & KP-032



H 3 1 1

Rubron Head (Adjustable swing up to 1.6 mm at chuck edge)

Maximum speed - 8,000 RPM



Collet Selection Table

Head Model	Inside Diameter (mm)									
HO11	ø 1.0	ø 1.2	ø 1.4	ø 1.6	ø 1.8	ø 2.0	3/32"	ø 3.0	1/8"	
HO21	KP-050	KP-051	KP-007	KP-005	KP-052	KP-031	KP-036	KP-032	KP-033	
HO41	Collet Code									
HO51										
H221										
H231										
Head Model	Inside Diameter (mm)									
HO31	3/32"	ø 3.0	1/8"	ø 4.0	ø 5.0	ø 6.0	1/4"			
	KP-061	KP-062	KP-063	KP-066	KP-067	KP-060	KP-064			
	Collet Code									

Head Model	Inside Diameter (mm)			
H211	3/32"	ø 3.0	1/8"	
	KP-021	KP-022	KP-025	
	Collet Code			

Reducer

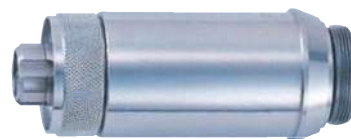
Gear Joint

The reduction gear joint; designed to use between head and motor.
Best suited to work requiring low revolution and high torque.

M G 0 3

Maximum speed 30,000 RPM 1/4 reduction ratio gear joint

Versatile joint with a built-in 1/4 reduction ratio gear, can be used with all listed heads, except Model H051 and H051P, and all motors with maximum speed 30,000 RPM or less. (Clamp section size: \varnothing 26 x 29.5)



Clamp Joint

For Integration into Machines

Installed in between head and motor, the clamp joint enables head to be used in integration with automatic machinery, etc.

E T 5 1

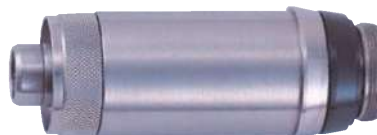
Clamp Joint Maximum speed 35,000 RPM

Compatible with all types of heads and of motors with maximum speed 35,000 RPM or less; can be clamp held on the Rotary, ANGLON, RUBRON and others.

(Clamp section size: \varnothing 26 x 40.6)

Clamp mount DM02

A mount for fixing the clamp head or clamp joint to machinery.

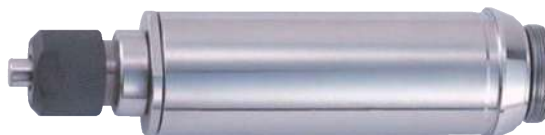


Heavy Duty Clamp Head - FX 91

Maximum shank diameter 6.35 mm

Employs a locking nut type of chucking mechanism ensuring more powerful chucking force.

- Standard Collet KP-126 (6.00mm)
(Clamp section size: \varnothing 26 x 70)



Foot Switch (Can be used with all POWER PACKS)

FS202

- An ON/OFF type foot switch.
- When pressed the hand piece is on, when released, the hand piece will stop.
(Cord length: 1.5 m)



VC302

- In addition to the ON/OFF switching, the speed control and power control for the POLYTOR action for the handpiece is provided depending on how far the pedal is depressed.
(Cord length: 1.5 m)



Power Cord for Handpiece

Cords for the D.C. motor Handpiece (with a 5-pin connector)

Curled cord CC7112

- (Length: 1.5 m)
- Power cord for the D.C. motor handpiece.
 - Standard accessory with the handpiece.



Extension cord CB2112

- (Length: 2 m)
- Straight extension cord for connecting the POWER PACK and the curled cord (CC7112).
 - Two or more extension cords can be connected.



Power Cord for Power Pack

Standard accessory with the POWER PACK

CA12

- (Length: 2 m)
- Power cord for all Minimo Power Packs (AC230V)



Curled cord CC811

- (Length: 1.5 m)
- Power cord for the POLYTOR ultrasonic handpiece.
 - Standard accessory with POLYTOR ultrasonic handpiece



Extension cord CB311

- (Length: 3 m)
- Straight extension cord for connecting the POWER PACK and the curled cord (CC811).
 - Two or more extension cords can be connected.



Tool Cases

Aluminum-made Carrying Case

- Conveniently portable, the robust aluminum carrying case houses the POWER PACK, handpieces and other accessories neatly and safely, provided with the padded interior

B X 0 1 Carrying Case (small)

Outside dimensions: 365 (W) x 210 (D) x 280 (H) mm
Weight: 2.6kg



B X 0 2 2 Carrying Case (large)

Outside dimensions: 470 (W) x 230 (D) x 340(H) mm
Weight: 4.2kg



Tool Stand/Rubber Cradle

Rubber Cradle

RM 1 1

- Handpiece stand made of rubber
- Can be used for all listed handpieces

Outside dimensions: 72(W) x 72 (D) x 30 (H) mm



Drill Stand

DS 5 2

- With a Rotary Handpiece installed, the drill stand is used for drilling, boring, grinding and other similar purposes.
- Can be used in combination with all listed handpieces except RECIPRON and BELT SANDER.
- The handpiece can be set both in vertical and horizontal positions.

Table Dimensions:	132 (W) x 200 (D) x 30 (H) mm
Height of the Support:	230 mm (Effective height: 90 mm)
Weight:	5.4kg
Maximum Slide Stroke:	25 mm
Accessories:	Motor sleeve (1 set) Hexagonal bar wrench (1 set)



Clamp Mount

DM 0 2

- Used to hold the clamp head, the gear joint or the clamp joint in place so the tool rest on the machine such as a lathe.
- DM02 and the axis of a clamped head are parallel to each other.



Spherical Vice

V 1 5 1

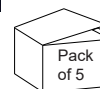
- V-shaped grooves on the jaws ensure workpiece is held evenly.
- Detachable adjusting handle.

- Dimensions (mm):
Sphere diameter: 130
Height: 165
Base width: 60
Max. mouth width: 62
Sphere depth: 50
Weight: 8.5 Kg

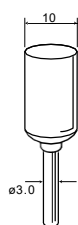


Tools for Angle Rotary Handpiece

- Soft rubber pads available in 4 different diameters (ø 10 mm, ø 20 mm, ø 30 mm, ø 40 mm) are available.
- Pressure sensitive adhesive (PSA) backing enables you to replace discs in a snap. This tape also serves as a cushion to enable softer contact with work pieces.
- Sandpaper discs are resistive to grain chipping and clogging with aggressive cutting action.
- Zirconia discs use zirconia grains developed especially for hard-to-cut materials.

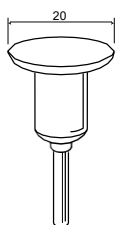


Abrasive Disc & Polishing Disc Holders

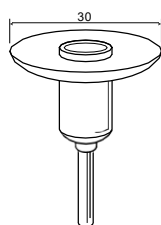


SHANK = ø3.0MM

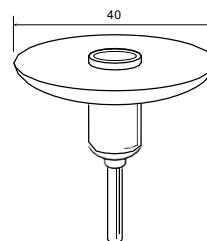
F 2001



F 2002



F 2003



F 2004



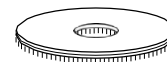
Soft Rubber Pads

These discs are used to mount pressure sensitive adhesive (PSA) backed abrasive polishing discs to the smooth side. The opposite side has a velcro type surface that is used to work with the below rubber disc. Provides quick change capabilities without having to discard adhesive or polishing disc.

These rubber discs mount to the disc holder with PSA backing. The disc face has a velcro type surface used to mount the PSA backed disc above (F 2041, F 2041, F 2043).

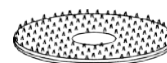
PSA Backing Discs

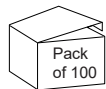
ø21	F 2041
ø31	F 2042
ø40	F 2043



PSA

ø21	F 2046
ø31	F 2047
ø40	F 2048

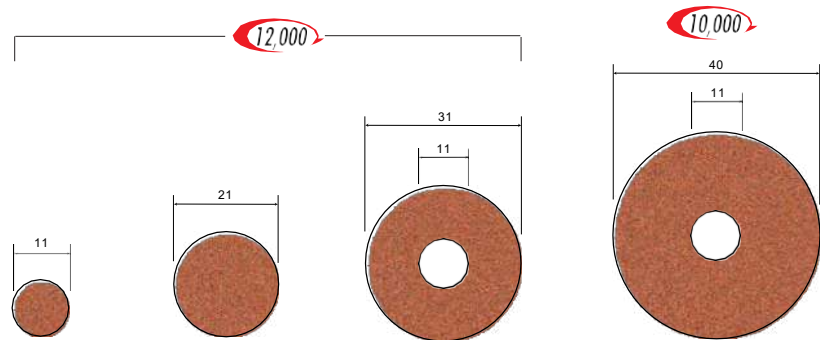




Sandpaper Disc (with PSA backing)



These flexible discs are made of aluminum oxide resin bonded for great durability. The pressure sensitive adhesive (PSA) backing can withstand the heat generated by high friction. PSA discs will hold until removed by hand. There is a peel-off backing on each disc to maintain adhesive freshness.



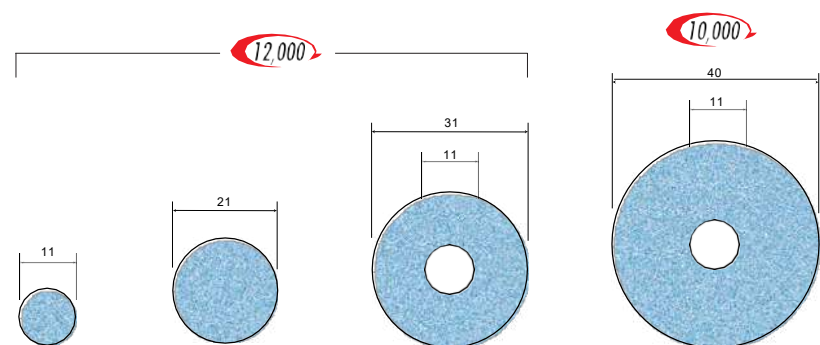
Abrasive Disc

#60	F 2101	F 2121	F 2141	F 2161
#80	F 2102	F 2122	F 2142	F 2162
#120	F 2103	F 2123	F 2143	F 2163
#180	F 2104	F 2124	F 2144	F 2164
#240	F 2105	F 2125	F 2145	F 2165
#320	F 2106	F 2126	F 2146	F 2166
#400	F 2107	F 2127	F 2147	F 2167
#600	F 2108	F 2128	F 2148	F 2168
#800	F 2109	F 2129	F 2149	F 2169
#1000	F 2110	F 2130	F 2150	F 2170

Zirconia Disc (with PSA backing)



These Zirconia discs are used on hard- to-grind materials. Fast and clean cutting, they are available in 4 grit sizes and supplied with PSA backing.



Zirconia Disc

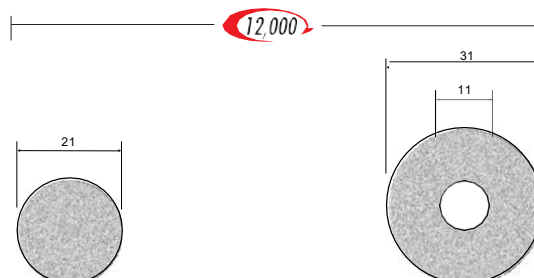
#60	F 2251	F 2261	F 2271	F 2281
#80	F 2252	F 2262	F 2272	F 2282
#120	F 2253	F 2263	F 2273	F 2283



Metal-base Diamond Disc (with PSA backing)

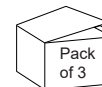
These metal-base diamond discs are thin metal discs plated with diamond grains. Suitable for various materials such as sintered hard alloy, ceramics, glass, etc.

Also supplied with PSA backing.

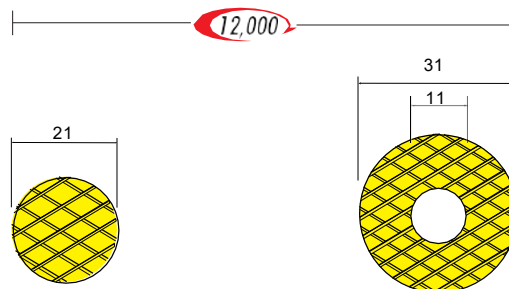


#140	F 2311	F 2321
#220	F 2312	F 2322
#320	F 2313	F 2323
#400	F 2314	F 2324
#600	F 2315	F 2325
#800	F 2316	F 2326
#1000	F 2317	F 2327
#2000	F 2318	F 2328

Cloth-base Diamond Disc (with PSA backing)



These cloth-base diamond discs are soft cloth discs plated with diamond grains. Suitable for sintered hard alloy, ceramics and glass.



Grit	Color		
#120	Sky Blue	F 2361	F 2371
#180	Orange	F 2362	F 2372
#240	Green	F 2363	F 2373
#320	Purple	F 2364	F 2374
#400	Brown	F 2365	F 2375
#600	Red	F 2366	F 2376
#800	White	F 2367	F 2377
#1000	Pink	F 2368	F 2378
#1500	Blue	F 2369	F 2379
#3000	Yellow	F 2370	F 2380

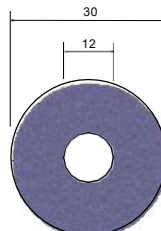




Rubber Disc (with PSA backing)

WADisc-formed abrasive rubber

12,000



Thickness 1.5 mm

#60	F 2661
#80	F 2662
#120	F 2663

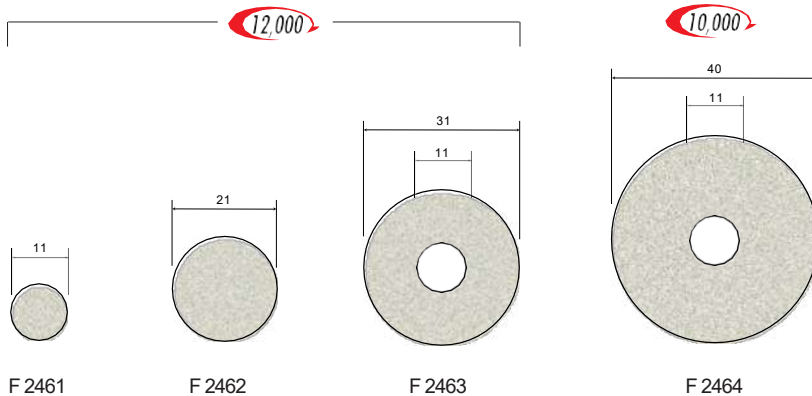


Felt Disc (with PSA backing)

(Thickness 2 mm)

These felt discs are compressed dense structures of carefully selected fine, quality wool.

These discs should be used with a Hyprez diamond polishing compound and Hyprelube lubricant. Rich in elasticity, they fit well with curved surfaces and are applicable to finish polishing.

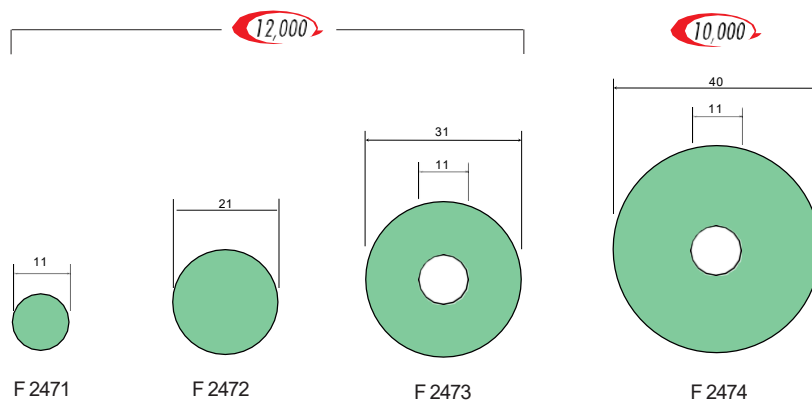




Green Felt Disc (with PSA backing)

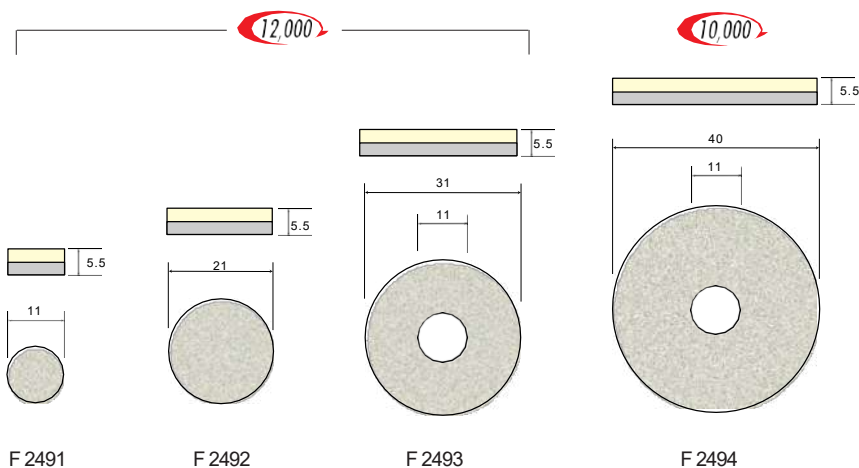
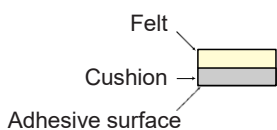
(Compound impregnated.
Thickness 2 mm)

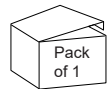
These green felt discs are compressed dense structure of carefully selected fine, quality wool impregnated with chromium oxide polishing compound. They are directly applicable to finish polishing, precision polishing and glossing, and require no polishing compounds.



Felt Disc with Soft Cushion (with PSA backing)

These felt discs have a soft cushion inserted between contact surface and felt disc so that they fit well with curved surfaces and enable impact-free polishing.



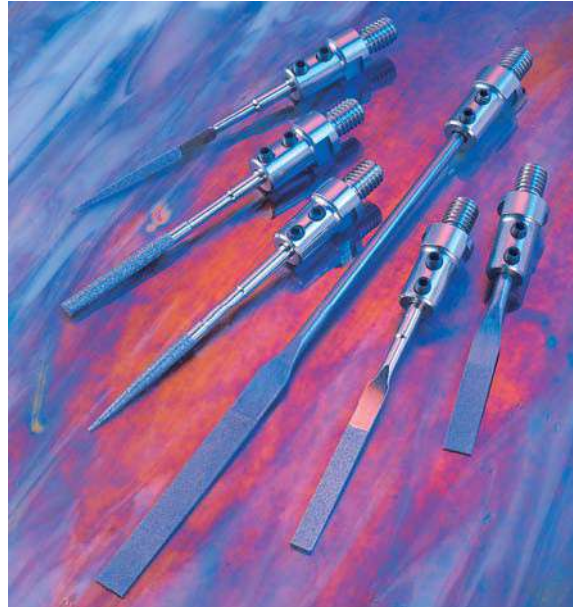


Electroplated Diamond Files

These electroplated files are made of solid steel that are electroplated with precision graded diamond particles.

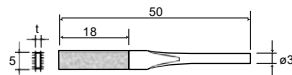
Specifically designed for intricate surfaces and hard to reach areas. Excellent for removing tool marks prior to stoning or intermediate finishing.

These files are for mounting to Polytor US21 or US17 tool-holders, part number F5253.

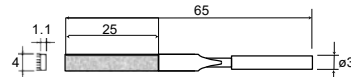


ELECTROPLATED DIAMOND FILES

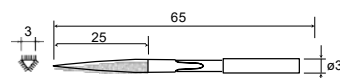
- #200 (t=0.7mm) F 4011
- #400 (t=0.6mm) F 4012
- #600 (t=0.5mm) F 4013
- #800 (t=0.5mm) F 4014
- #1000 (t=0.5mm) F 4015



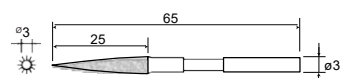
- #170 F 3011—plated one side
- #170 F 3016—plated two sides



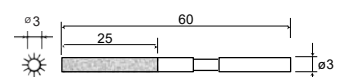
- #170 F 3061



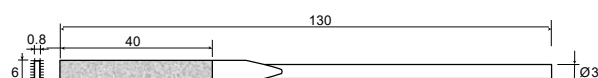
- #170 F 3071



- #170 F 3076



- #170 F 5181



- #170 F 5191—plated one side
- #170 F 5192—plated two sides



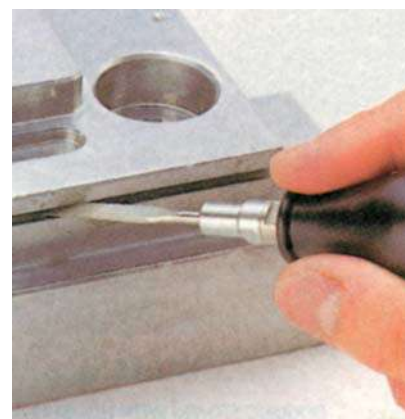
Electroplated Diamond Files (Ultra Thin)

These files are made with solid steel that are electroplated with precision graded diamond particles specifically designed for intricate surfaces and hard to reach areas.

Excellent for removing tool marks prior to stoning or intermediate finishing.

Ultra thin files allow for reaching areas that are difficult to reach, and they are flexible.

These files are for mounting to Polytor US21 or US17 tool-holders, part number F5253.



ELECTROPLATED DIAMOND FILES (Ultra Thin)

#200	F 3141	
#200	F 3146	
#400	F 3147	
#600	F 3148	
#200	F 3151	
#400	F 3152	
#600	F 3153	
#200	F 3156	
#400	F 3157	
#600	F 3158	
#200	F 3161	
#400	F 3162	
#600	F 3163	

Motor system with flexible shaft

jokeFlex Premium Plus



jokeFlex Premium PLUS

Minimised noise emission
The most powerful joke motor of all time
Compatible with accessories from the previous generation Flexible shafts with silicon hose

Our flexible shaft system for today and the future. The core is the motor with an impressive 1,000 watts power. The noise level is reduced to a pleasant level in spite of increased power. The motor can be used in a hanging or lying position. Thanks to the robust construction of the suspension and shaft connection, it is optimally equipped for a hard day's work.

The matching **joke Premium Plus handpieces** fulfill all requirements which are expected of a modern handpiece. They lie comfortably and securely in the hand, muffle vibrations effectively and tire the worker's hand over long working periods. This is achieved by the uniformly narrow handle made of special rubber which is used in all handpieces. At least equally important: the inside. And also here high tech is the key. The handpieces are very robust and have a closed double bearing inside. The result is extremely quiet-running operation. Further advantages of the Premium Plus hand-pieces: changing the tool in seconds, without pinning.

The joke Premium Plus handpieces are available in a straight design or with a 90° angle head. The handpieces are of course also available in Rapid-Change design which connects to the motor system in a second. A closer look at the angle handpiece is worth-while: the slim, almost filigree head gives you the opportunity of reaching and processing even otherwise difficult to access areas of the workpiece.

jokeFlex Premium Plus



**Handpiece
joke Premium
Plus**
Order No. 0 030 200
Collet Typ GH



**Angle-handpiece
joke Premium Plus**
Order No. 0 030 250
Collet Typ WH



**Technical
handpiece THSZ/N**
Order No. 0 030 004
Collet Typ GH




**Angle-
handpiece
VTN-N 90°**
Order No. 0 031 341
Collet Typ WH



**Angle-
handpiece
VTN-S/N**
Order No. 0 031 540
Collet Typ GH



**Rapid-chuck
handpiece TH-M II**
Order No. 0 030 640
Collet Typ TH



**Hemisphere handpiece
NHG-L**
Order No. 0 031 400
Collet Typ WH



**Hand-filing machines
DIPROFIL®
Di-Pro FXK-N, Mark II**
Order No. 0 001 503-N



**Hand-filing machines
DIPROFIL®
FPK/R, Mark II**
Order No. 0 005 151-N



**Flexible shafts
Premium Plus**

Standard motor connection
Spring clip 1.1 m
Order No. 0 015 800
Rapid-Change 1.1 m
Order No. 0 015 900

**Quick-change
motor connection**
Spring clip 1.1 m
Order No. 0 016 800
Rapid-Change 1.1 m
Order No. 0 016 900



**Motor
jokeFlex Premium Plus**
Order No. 0 016 550



**Foot control
Premium**
Order No. 0 016 600




**Quick coupling system
joke Rapid-Change**
Coupling piece
Order No. 0 015 250
Connector plugs for
handpieces



**Suspension device,
clamp-on**
Order No. 0 020 200

jokeFlex Premium Plus flexible shafts

The Premium Plus flexible shafts are consistently optimised to suit everyday requirements in industry. The silicone hose offers many advantages:

- Utmost flexibility and suppleness
- Extremely smooth running (owing to minimised vibrations)
- Very quiet
- No heat generation

For connecting the handpieces, our flexible shafts offer you a choice between a spring clip and the joke Rapid-Change quick coupling system. This innovative system allows safe handpiece change in a few seconds without any “fumbling around”. Shafts with a hook spring are also available on request.

On the motor side, a choice of shafts with standard motor connection or the joke Quick-Change “premium connection” is available.

Shaft connectors



Flexible shaft with spring clip



Flexible shaft with hook ring

Motor connectors



joke Quick-Change motor connector



Standard motor connector (with pins)



Flexible shaft with Rapid-Change coupling

Flexible shaft with Rapid-Change coupling



Flexible shaft with spring clip



Motor connection	Dimensions	Order No.
Standard	1,100 mm	0 015 900
Quick - Change	1,100 mm	0 016 900
Standard	1,100 mm	0 015 800
Quick-Change	1,100 mm	0 016 800

jokeFlex Premium Plus motor system

Our flexible shaft system for today and the future. The core is the motor with an impressive 1,000 watts power. The noise level is reduced to a pleasant level in spite of increased power. The motor can be used in a hanging or lying position. Thanks to the robust construction of the suspension and shaft connection, it is optimally equipped for a hard day's work.

The matching joke Premium Plus handpieces fulfill all requirements which are expected of a modern handpiece. They lie comfortably and securely in the hand, muffle vibrations effectively and tire the worker's hand over long working periods. This is achieved by the uniformly narrow handle made of special rubber which is used in all handpieces. At least equally important: the inside. And also here high tech is the key. The handpieces are very robust and have a closed double bearing inside. The result is extremely quiet-running operation. Further advantages of the Premium Plus hand-pieces: changing the tool in seconds, without pinning.

The joke Premium Plus handpieces are available in a straight design or with a 90° angle head. The handpieces are of course also available in Rapid-Change design which connects to the motorsystem in a second. A closer look at the angle handpiece is worthwhile: the slim, almost filigree head gives you the opportunity of reaching and processing even otherwise difficult to access areas of the workpiece.

Motor jokeFlex Premium Plus

Order No.



Robust construction (shaft connection and suspension)
pleasant noise level, can be used lying and hanging, compatible with foot controller
Premium
Rotational speed: max. 18,000 1/min
Power: 1,000 W input, 700 W output
Dimensions (H x W x D): 240 x 105 x 95 mm
Weight: 1. kg
Cable length: 2. m
Shaft connection: Quick-Change

0 016 550

Advantage package jokeFlex Premium Plus

Design

Order No



This advantage package for getting started straight away includes:
1 x motor Premium Plus (Order No. 0 016 550)
1 x foot controller Premium (Order No. 0 016 600)
1 x flexible shaft Premium Plus 1.1 m length (Order No. 0 016 800, for Rapid-Change Order No. 0 016 900)

Standard

0 016 850

Rapid-Change

0 016 850R

Foot control Premium, Motor system with flexible shaft

Order No.



To adjust motor speed by foot action
Speed range: 3,000 to 22,000 1/min
Speed restriction: 10,000 to 22,000 rpm
Dimensions: Ø 190 (230 with pedal) x 200 mm
Weight: 2 kg
Supply voltage: 230 volts, 50 Hz
Cable length: 2.8 m

0 016 600

Suspension device G2, height adjustable

Fixable to the workbench max. 70 mm
Clamping range: between 700 and 1,100 mm
Height adjustable: cantilever arm adjustable
Depth adjustable: by max. 300 mm, lockable in any desired position
Colour: blue/silver

0 020 200


Spring clip, Standard



Proven steel design, pack contents: 20 pieces

0 015 201

jokeFlex Premium Plus Handpieces

Handpiece joke Premium Plus		Type	Order No.
	Rotational speed:	max. 22,000 1/min	Standard 0 030 200
	Collet:	GH (Ø 3 mm in scope of delivery)	Rapid-Change 0 030 200R
	Dimensions:	Ø 25 x 138 mm	
	Weight:	160 g	
	Scope of delivery:	including tool set	

Collet type GH



Dimensions

Ø 2.35 mm – 3/32"	0 030 010
Ø 3 mm	0 030 013
Ø 6 mm	0 030 016

Driver



0 030 205


Connector plug



Rapid change to
joke Premium Plus handpieces

0 015 285

Angle-Handpiece 90° joke Premium Plus

Angle-Handpiece 90° joke Premium Plus		Type	Order No.
	Rotational speed:	max. 18,000 1/min, clockwise rotation	Standard 0 030 250
	Collet:	WH (Ø 3 mm in scope of delivery)	Rapid-Change 0 030 250R
	Dimensions:	Ø 26 x 165 mm (head Ø 17 x 27 mm)	
	Weight:	170 g	
	Scope of delivery:	including tool set	

Collets, type WH



Dimensions

Ø 2.35 mm – 3/32"	0 031 301
Ø 3 mm	0 031 302

Driver



0 030 205





Connector plug







Rapid change to
joke Premium Plus handpieces

0 015 285

jokeFlex Premium Plus Handpieces cont.

Handpiece THSZ/N		Type	Order No.
	Collet:	GH (Ø 3 mm in scope of delivery)	Standard 0 030 004
	Speed:	max. 18,000 1/min	Rapid Change 0 030 004R
	Dimensions:	Ø 24 x 132 mm	
	Weight:	120 g	
	Scope of delivery:	wrench, clamping pin	
Collet type GH		Dimensions	
		Ø 2.35 mm – 3/32"	0 030 010
		Ø 3 mm	0 030 013
		Ø 6 mm	0 030 016
Driver for Rapid-Change			0 015 262
			
Connector plug			0 015 261-1
	Rapid change to Handpiece THSZ/N (order no. 0 030 004, 0 030 005 and 0 030 006)		

Angle-handpiece VTN-N 90°		Type	Order No.
	70 mm telescope-type extendable angle head with 90° head adjustment, clockwise rotation	Standard	0 031 341
	Collet:	WH (Ø 2.35 and Ø 3 mm in scope of delivery)	Rapid-Change
	Speed:	max. 18,000 1/min	
	Dimensions:	Ø 24 x 175 mm (head Ø 17 x 30 mm)	
	Weight:	185 g	
	Scope of delivery:	tool kit	
Collets, type WH		Dimensions	
		Ø 2.35 mm – 3/32"	0 031 301
		Ø 3 mm	0 031 302
Driver			0 015 264
			
Connector plug			0 015 263
	Rapid change to Anglehandpiece VTN/N		

joke Classic Line Handpieces

Angle-handpiece VTN-S/N



Collet: GH (Ø 3 and Ø 6 mm in scope of delivery)
 Speed: max. 18,000 1/min
 Rotation: clockwise
 Dimensions: Ø 24 x 171 mm (head Ø 24 x 40 mm)
 Weight: 240 g
 Scope of delivery: tool kit

Type	Order No.
Standard	0 031 540
Rapid-Change	0 031 540R

Collet type GH



Driver



Connector plug



Rapid change for
anglehandpiece VTN-S/N

Dimensions

Ø 2.35 mm – 3/32"	0 030 010
Ø 3 mm	0 030 013
Ø 6 mm	0 030 016

0 031 563

0 015 265

Rapid-chuck handpiece TH-M II

This Rapid-chuck handpiece was designed for lighter jobs involving frequent tool changes. The selected tools are clamped in using the clamping lever fitted on the top.



Collet: TH (Ø 3 mm in scope of delivery)
 Speed: max. 15,000 1/min
 Dimensions: Ø 21.9 x 139 mm
 Weight: 107 g

Type	Order No.
Standard	0 030 640
Rapid-Change	0 030 640R

Collets, type TH



Driver

Connector plug



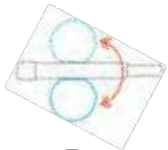
Rapid Change suitable for the TH-M II quick release
handpiece (0 030 640)

Dimensions	Order No.
Ø 2.35 mm	0 030 641
Ø 3 mm	0 030 642

0 030 666

0 015 273

Hemisphere Handpiece NHG-L



Easy change between right and left-handed use!

Our special recommendation for polishing jobs (for example, when using rings for finishing).
The hemisphere attached to the handle provides a fatigue-free handrest and can be adapted for either right or left-handed users.



Telescopically extendable angle head (70 mm), with 125° head adjustment, anticlockwise rotation
 Collet: WH
 Speed: max. 11,000 1/min
 Dimensions: Ø 18 x 190 mm (head Ø 18 x 30 mm)
 Weight: 250 g
 Scope of delivery: Collet Ø 3 mm, holder for ring Ø 12 mm, tool kit

Type	Order No.
Standard	0 031 400
Rapid Change	0 031 400R

Collets, type WH



Dimensions

Ø 2.35 mm – 3/32"	0 031 301
Ø 3 mm	0 031 302

Driver



0 015 256

Connector plug



Rapid change for hollow handpiece

0 015 255

Collets for handpieces

Collets M8 x 0.75 for

- Technical handpiece TH-SZ, THSZ/N and Premium
- Angle handpiece VTN-SN
- Handpiece NHK-L
- Handpiece NHK-R



Diameter	Order No.
Ø 2.35 mm - 3/32"	0 030 010
Ø 3.0 mm	0 030 013
Ø 6.0 mm	0 030 016
Ø 0.5 mm	0 030 040
Ø 0.6 mm	0 030 041
Ø 0.7 mm	0 030 042
Ø 0.8 mm	0 030 043
Ø 0.9 mm	0 030 044
Ø 1.0 mm	0 030 011
Ø 1.1 mm	0 030 045
Ø 1.2 mm	0 030 046
Ø 1.3 mm	0 030 047
Ø 1.4 mm	0 030 048
Ø 1.5 mm	0 030 049
Ø 1.6 mm	0 030 050
Ø 1.8 mm	0 030 051
Ø 2.0 mm	0 030 012
Ø 2.5 mm	0 030 052
Ø 3.5 mm	0 030 053
Ø 4.0 mm	0 030 014
Ø 4.5 mm	0 030 054
Ø 5.0 mm	0 030 015
Ø 5.5 mm	0 030 055
Ø 1/8"	0 030 017
Ø 1/4"	0 030 018

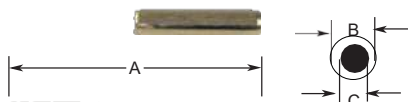
Collets M5 x 0.5 for

- Angle handpiece VTN and VTN/N
- Handpiece NHG-L
- Handpiece NHG-R

Diameter	Order No.
Ø 2.35 mm - 3/32"	0 031 301
Ø 3.0 mm	0 031 302
Ø 0.6 mm	0 031 330
Ø 1.0 mm	0 031 332
Ø 1.2 mm	0 031 333
Ø 1.5 mm	0 031 334
Ø 2.0 mm	0 031 336
Ø 2.5 mm	0 031 337
Ø 1/8"	0 031 322

Reduction bushes

Type RHA



Type RHB



Reduction collet



A mm	Ø B mm	Ø C mm	Order No.
14	3	2.35	0 545 286
28	3	2.35	0 545 287
25	6	3	0 545 288

Diprofil® Di-pro • FXK-N • FPK/R

Hand-filing machine Diprofil® FPK/R, Mark II



Stroke length: 0 – 6 mm, (recommended 0.5 – 3 mm)
 No. of strokes: max. 8,000 strokes/min
 (5,000 – 6,000 strokes/min recommended)
 Tool receptacle: Ø 2 – 6.4 mm
 Insertion depth: 40 mm
 Vibration: 5.79 – 13.37 m/s²
 Sound level: < 70 dB(A) at 7,000 strokes/min
 (acc. to ISO 15744)
 Weight: 575 g
 Scope of delivery: storage case, tool set, oil, extension tube/finger protection bush, replacement friction bearing and felts, lubricating oil

Type	Order No.
Standard	0 005 151-N
Rapid-Change	0 005 151R-N

Driver 0 015 252

Connector plug 0 015 251



Rapid change for Diprofil Hand-filing Machine

Hand-filing machine Diprofil® Di-Pro FXK-N, Mark II



Stroke length: 0.5 – 6 mm (recommended 0.5 – 3 mm)
 No. of strokes: max. 7,000 strokes/min,
 (5,000 – 6,000 strokes/min recommended)
 Tool receptacle: Ø 2 – 6.4 mm
 Insertion depth: 40 mm
 Vibration: 1.55 – 5.08 m/s²
 Sound level: < 75 dB(A) at 7,000 strokes/min
 Weight: 700 g
 Scope of delivery: Storage case, tool set, extension tube, finger protection bush, counterweights replacement friction bearing and felts, lubricating oil

Type	Order No.
Standard	0 001 503-N
Rapid-Change	0 001 503R-N

Driver 0 015 252

Connector plug 0 015 251



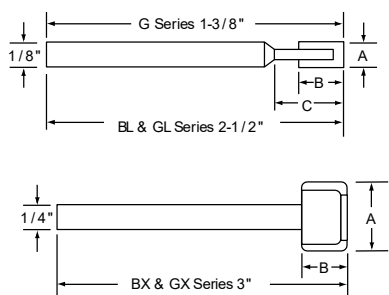
Rapid change for Diprofil Hand-filing Machine



Precision Plus Electroplated Diamond & CBN Grinding Pins

Featuring hardened steel shanks and bonded diamond or CBN particles, these precision grinding pins are ideal for use on jig and internal grinding machines and/or hand tools. Through our Electrogrip® process, particle exposure is maximized, assuring a free cutting action that greatly reduces heat and wear.

When ordering: Specify catalog number and grit size. Special pins quoted upon request (please furnish print or sketch).

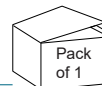


BL (CBN) & GL (Diamond) Series Pins - Specifications

CBN Grit Size	Catalog Number	Diamond Grit Size	Catalog Number	A	B	C
140/170	BL.20	Coarse	GL.20	.020	1/16	1/8
	BL.25	140/170	GL.25	.025	3/32	1/4
	BL.30	Fine	GL.30	.030	3/32	1/4
	BL.35	200/230	GL.35	.035	3/32	1/4
80/100	BL.40		GL.40	.040	1/8	3/8
	BL.45	Coarse	GL.45	.045	1/8	3/8
	BL.50	Fine	GL.50	.050	1/8	3/8
	BL.50-1	200/230	GL.50-1	.050	1/8	1"
	BL.55		GL.55	.055	1/8	3/8
80/100	BL.60		GL.60	.060	1/8	3/8
	BL.60-1	Coarse	GL.60-1	.060	1/8	1"
	BL.70	100/120	GL.70	.070	5/32	1/2
	BL.70-1	Fine	GL.70-1	.070	5/32	1"
	BL.80	200/230	GL.80	.080	5/32	1/2
	BL.80-1		GL.80-1	.080	5/32	1"

CBN Grit Size	Catalog Number	Diamond Grit Size	Catalog Number	A	B	C
80/100	BL.90		GL.90	.090	5/32	1/2
	BL.90-1		GL.90-1	.090	5/32	1"
	BL.100	Coarse	GL.100	.100	5/32	1/2
	BL.100-1	100/120	GL.100-1	.100	5/32	1"
	BL.110	Fine	GL.110	.110	5/32	1/2
	BL.110-1	200/230	GL.110-1	.110	5/32	1"
	BL.125		GL.125	.125	5/32	1/2
	BL.125-1		GL.125-1	.125	5/32	1"
	BL.141		GL.141	.141	1/4	—
	BL.156	Coarse	GL.156	.156	1/4	—
80/100	BL.188	100/120	GL.188	.188	1/4	—
	BL.218	Fine	GL.218	.218	1/4	—
	BL.250/2	200/230	GL.250/2	.250	1/8	—
	BL.250/4		GL.250/4	.250	1/4	—





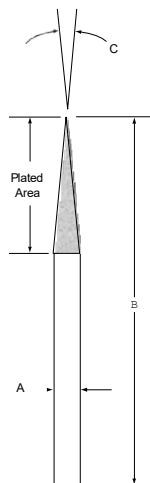
Precision Plus Diamond-Plated Taper Pins

These diamond-plated taper pins are ideal for grinding or ripping tungsten carbide drawing dies for the wire and tube industries, and for cold heading dies. You get fast, efficient and precise grinding, with long wear.

Specifications

Part Number	A	B	C
GLT.125.10	1/8"	2-1/2"	10P
GLT.125.12	1/8"	2-1/2"	12P
GLT.125.16	1/8"	2-1/2"	16P
GLT.125.26	1/8"	2-1/2"	26P
GLT.250.10	1/4"	3"	10P
GLT.250.12	1/4"	3"	12P
GLT.250.16	1/4"	3"	16P
GLT.250.26	1/4"	3"	26P

When Ordering: Specify grit desired;
80/100 Coarse or 200/230 Fine.



G (Diamond) Series Pins — Specifications

Diamond Grit Size	Catalog Number	A	B	C
Coarse	G.20	.020	1/16	1/8
140/170	G.25	.025	3/32	1/4
Fine	G.30	.030	3/32	1/4
200/230	G.35	.035	3/32	1/4
Coarse	G.40	.040	1/8	3/8
100/120	G.45	.045	1/8	3/8
Fine	G.50	.050	1/8	3/8
200/230	G.55	.055	1/8	3/8
	G.60	.060	1/8	3/8
	G.70	.070	5/32	1/2
Coarse	G.80	.080	5/32	1/2
100/120	G.90	.090	5/32	1/2
Fine	G.100	.100	5/32	1/2
200/230	G.110	.110	5/32	1/2
	G.125	.125	5/32	1/2

BX (CBN) & GX (Diamond) Series Pins - Specifications

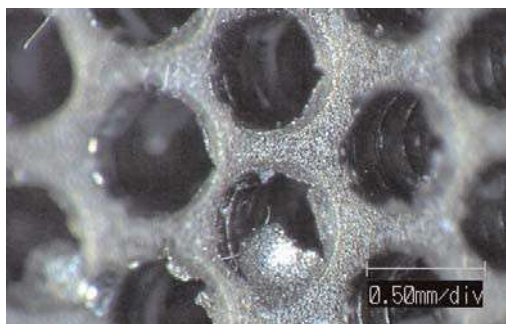
CBN Grit Size	Catalog Number	Diamond Grit Size	Catalog Number	A	B
	BX.141		GX.141	9/64	1/4
	BX.156		GX.156	5/32	1/4
	BX.188		GX.188	3/16	1/4
	BX.218	Coarse	GX.218	7/32	1/4
80-100	BX.250/2	100/120	GX.250/2	1/4	1/8
	BX.250/4	Fine	GX.250/4	1/4	1/4
	BX.312/2	140/170	GX.312/2	5/16	1/8
	BX.312/4		GX.312/4	5/16	1/4
	BX.312/6		GX.312/6	5/16	3/8
	BX.375/2		GX.375/2	3/8	1/8
	BX.375/4		GX.375/4	3/8	1/4
	BX.375/6	Coarse	GX.375/6	3/8	3/8
80/100	BX.500/4	100/120	GX.500/4	1/2	1/4
	BX.500/6	Fine	GX.500/6	1/2	3/8
	BX.500/8	140/170	GX.500/8	1/2	1/2
	BX.750/4		GX.740/4	3/4	1/4
	BX.750/8		GX.750/8	3/4	1/2



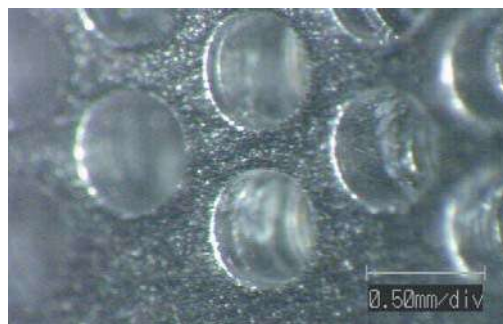
Ceramic Fiber Technology for Fast, Efficient Deburring & Finishing

The new DiaMold Ceramic Fiber brush by XEBEC is the first one of its kind that utilises ceramic fiber bristles to make up a cup-type brush. By working the brush on the end of the bristles, the cutting action remains constant and allows for efficient and fast removal of burrs generated from milling, drilling or grinding operations. The brush and sleeve combination that make up the brush have been designed to be used on various automated machine systems such as machining centres, transfer lines and robotic controlled systems.

- Deburr and finish in one operation
- Use in automated machinery
- Long-lasting ceramic fiber bristles
- Easy to use
- Replaceable brush
- Two finishing grades available
- Six sizes to choose from
- End-type brushes for use with rotary hand tools



Drilled holes 0.5 mm dia. (.020") tool steel



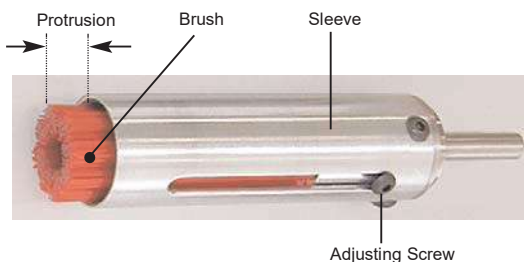
Deburred using All-CB25M brush



Phone case finished with A21-CB40M



The cup brush assembly is made up of the brush (replaceable) and the sleeve. Sizes available are 100, 60, 40, 25, 15 and 6 mm.



← Cup Brush Assembly

End Brush →



ORDERING GUIDE

CUP BRUSHES (for use with machining centres, milling machines and robots)					
Complete Assembly (Brush and Sleeve)					
(see below for specifications)					
Grit Size	Brush Dia.	Assembly Part No.	Grit Size	Brush Dia.	Assembly Part No.
	100mm	A11-CB100M-KIT		100mm	A21-CB100M-KIT
	60mm	A11-CB60M-KIT		60mm	A21-CB60M-KIT
A11	40mm	A11-CB40M-KIT	A21	40mm	A21-CB40M-KIT
	25mm	A11-CB25M-KIT		25mm	A21-CB25M-KIT
	15mm	A11-CB15M-KIT		15mm	A21-CB15M-KIT
	6mm	A11-CB06M-KIT		6mm	A21-CB06M-KIT
Replacement Sleeves					
Part Number	Type	Shank Size	Sleeve Dia.	OAL	
S100M	100mm	16mm	110mm	75mm	
S60M	60mm	12mm	65mm	75mm	
S40M	40mm	8mm	45mm	140mm	
S25M	25mm	8mm	30mm	140mm	
S15M	15mm	6mm	18mm	90mm	
S06M	6mm	6mm	10mm	70mm	
Replacement Cup Brushes					
Part Number	Grit Size	Fiber Colour	Diameter	Length	
A11-CB100M	A11	Red	100mm	75mm	
A11-CB60M	A11	Red	60mm	75mm	
A11-CB40M	A11	Red	40mm	75mm	
A11-CB25M	A11	Red	25mm	75mm	
A11-CB15M	A11	Red	15mm	50mm	
A11-CB06M	A11	Red	6mm	30mm	
A21-CB100M	A21	White	100mm	75mm	
A21-CB60M	A21	White	60mm	75mm	
A21-CB40M	A21	White	40mm	75mm	
A21-CB25M	A21	White	25mm	75mm	
A21-CB15M	A21	White	15mm	50mm	
A21-CB06M	A21	White	6mm	30mm	
End Brushes (for use with rotary hand tools)					
Part Number	Grit Size	Brush Colour	Dia.	OAL	Shank Size
A11-EB06M	A11	Red	6mm	20mm	3mm
A21-EB06M	A21	White	6mm	20mm	3mm



APPLICATION GUIDELINES

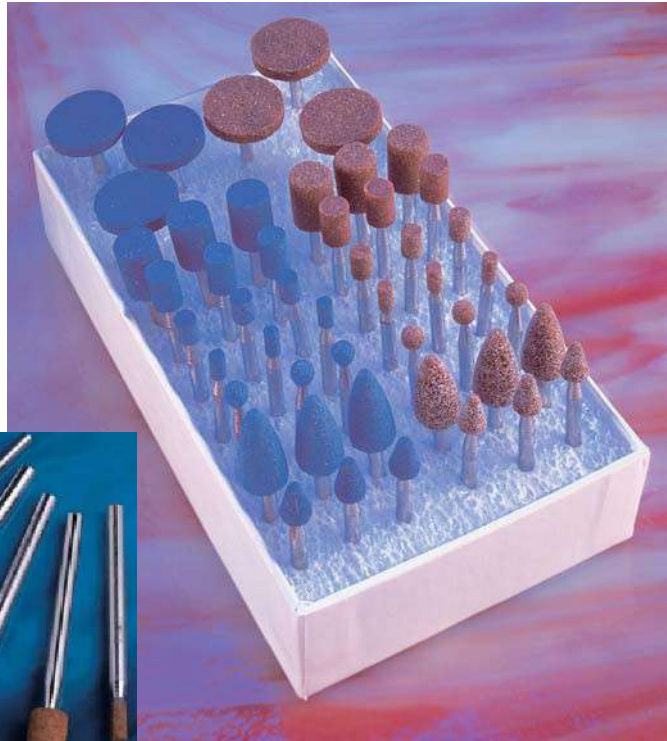
Materials						
Process	Steel	Copper	Aluminum	Magnesium	Titanium	Inconel
Dry	***	***	—	**	—	—
Wet	***	***	**	—	**	***
Operating Parameters						
Brush Dia.	Maximum RPM			Maximum Depth of Cut		
100mm	1,200			1.0 mm		
60mm	2,000			1.0 mm		
40mm	3,000			1.0 mm		
25mm	5,000			1.0 mm		
15mm	6,000			1.0 mm		
6mm	10,000			1.0 mm		

Mounted Points for Mould and Die Work

Engis® mounted abrasive points are designed specifically for mould and die work and includes:

- Popular "B" shapes (see below) and "W" shapes (rectangular or square) are available in a range of grades.

Points are manufactured from the premium aluminum oxide and special bonding materials to ensure rapid stock removal and long life. Stones are carefully formed and securely mounted on the mandrels to run true.



Packaging

All items are packaged in quantities of 12.

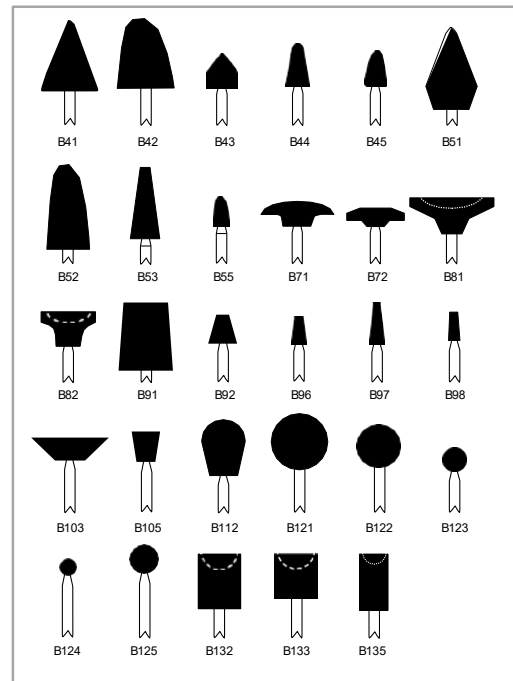
Operating Recommendations

Use mounted points with safety precautions similar to larger grinding wheels. Before use inspect each point and mandrel for damage. Insert the mandrel into the collet as far as possible. Do not exert excessive pressure in the grinding operation. **WEAR ADEQUATE EYE AND FACE PROTECTION.**



Use of abrasive wheels can cause nuisance dust. Take precautions to minimize exposure.

"B" SHAPES

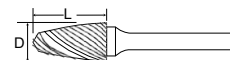
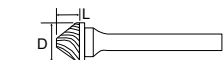
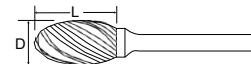
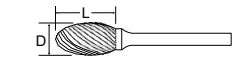
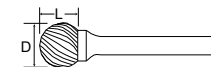
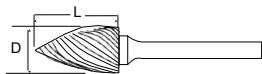
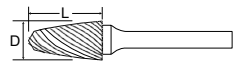
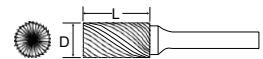
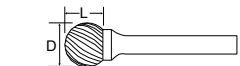
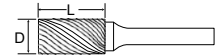
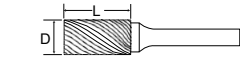




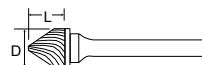
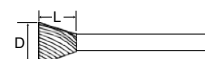
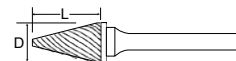
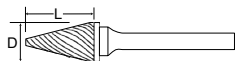
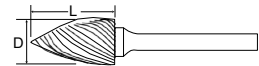
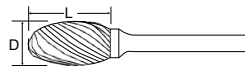
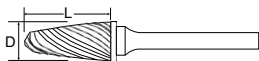
Engis® Tungsten-Carbide Burrs

For use with Air and Electric Rotary Handpieces

The precision construction and design of the Engis® Tungsten-Carbide cutters makes them ideal for use on all materials from 25 RC thru 65 RC, including brass, cast iron, aluminum, bronze, fiberglass, plastics, etc. These all-purpose cutters are ideal for hard to reach operations such as: dies, small cavities, etc.



Available in a large range of shapes, sizes, single cut or double cut.



Precision Diamond Hand Files



Shape	Stock Code
	DLH-11
	DLH-2
	DLH-4
	DLH-5
	DLH-6
	DLH-8
	DLH-9
	DLH-10
	DLH-30

Safe Sided Files

	DLH-1
	DLH-3
	DLH-7

Machines

Single-Pass Honing Bore Finishing Machines & Tools



High Precision Vertical Wafer Grinding Machines & Accessories



Lapping & Polishing Machines & Accessories



Machine Consumables

Bore finishing tools



Wafer grinding



Slurries



Plates



Consumables

Superabrasive Grinding Wheels, ElectroMill and Powders.

