Electronic Scraper and accessories

BIAX
Professional Power

BIAX

Contents

Summary

Type BS 40

BIAX Universal Scraper, heavy-duty model particularly suitable for:

- extreme heavy scraping work in large machine construction
- steel scraping work on guide-beds and machine columns, in case of turbines, transmissions and in pump construction.

Order number:

230 V – 200 040 100
115 V – 200 040 110

Type BL 40

BIAX Universal Scraper, light model particularly suitable for:

- heavy scraping
- standard scraping
- fine scraping
- precision scraping and oil-tight scraping.

Also suitable for dovetail guides and prisms in conjunction with special blades.

Order number:

230 V – 200 040 130
115 V – 200 040 140

Accessories

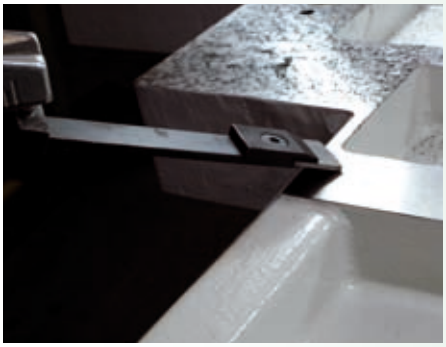
at the BS 40 incl.
grab handle, ratchet screw

at the BL40
not incl.

Order number:

ratchet screw	201 324 905
grab handle	203 004 748

Scraper Types
Electronic Scraper



BS 40

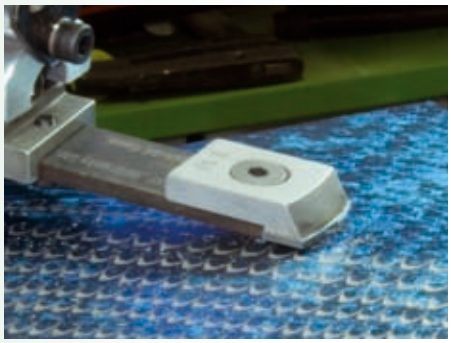
BL 40

ratchet screw

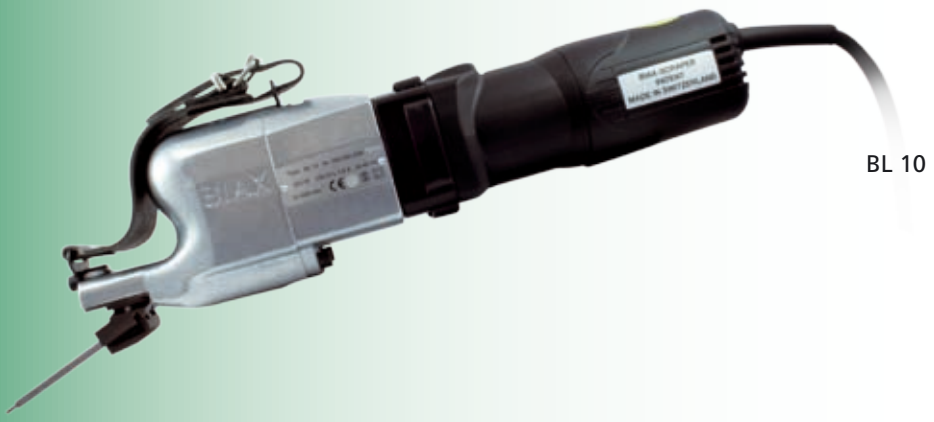
grab handle

Designation			BS 40	BS 40	BL 40	BL 40
AC Voltage:			230 Volt	115 Volt	230 Volt	115 Volt
Order number:			200 040 100	200 040 110	200 040 130	200 040 140
Electronically variable strokes up to:		min^{-1}	2.400	2.400	2.400	2.400
Infinitely variable stroke length:		mm	0-20	0-20	0-20	0-20
Power consumption:		Watt	320	320	320	320
Noise level:		dB(A)	82	82	82	82
Weight:		kg	4,7	4,7	3,7	3,7
Dimension:	L x W x H	mm	440 x 80 x 107	440 x 80 x 107	440 x 80 x 107	440 x 80 x 107

BL 10



HM 10



BL 10

HM 10

Type BL 10

BIAX Universal Scraper, light model particularly suitable for:

- plastic scraping
- standard scraping
- fine scraping
- precision scraping and oil-tight scraping.

Also suitable for dovetail guides and prisms in conjunction with special blades.

Order number:

230 V – 200 040 300
115 V – 200 040 310

Type HM 10

BIAX Half-moon Pattern Scraper particularly suitable for:

- scraping oil-pockets
- for optically pleasuring surfaces.

Order number:

230 V – 200 040 330
115 V – 200 040 340

Designation		BL 10	BL 10	HM 10	HM 10
AC Voltage:		230 Volt	115 Volt	230 Volt	115 Volt
Order number:		200 040 300	200 040 310	200 040 330	200 040 340
Electronically variable strokes up to:	min^{-1}	2.400	2.400	2.400	2.400
Infinitely variable stroke length:	mm	0-10	0-10	0-20	0-20
Power consumption:	Watt	320	320	320	320
Noise level:	dB(A)	82	82	82	82
Weight:	kg	2,7	2,7	2,7	2,7
Dimensions: L x W x H	mm	385 x 67 x 92	385 x 67 x 92	385 x 67 x 92	385 x 67 x 92

Scraper Types
Pneumatic Scraper

Type DL 40

BIAX Universal Scraper light model particularly suitable for:

- heavy scraping
- standard scraping
- fine scraping and oil-tight scraping.

Also suitable for dovetail guides and prisms in conjunction with special blades.

Order number

200 040 060

connection via oil supply unit with pressure reducing valve, filter and oiler.

DL 40

				Accessories (not incl.)		
Designation			DL 40	Oil Supply Unit	Special oil	Hose Unit
Order number:			200 040 060		BIAX 0,5 Liter	with sound absorber
				001 367 045	001 365 602	001 366 530
number of strokes at 6 bar:		min^{-1}	1.400			
Infinitely variable stroke length:		mm	0-20			
Power:		Watt	350			
Noise level:		dB(A)	75			
Connecting thread:			R 1/4 "			
Weight:		kg	3,6			
Dimensions:	L x W x H	mm	440 x 80 x 107			
Air consumption at strain:		l/min	600			
Hose amplitude:		mm	10			

Application
Scraping

Scraping interrupted surfaces

When working on motor blocks, pumps, turbine and transmission housings etc., the surfaces are first of all cleaned, deburred and then applied the engineers blue. In case of boreholes and threaded holes, the material appears at the edge of the hole. This burr must always be removed before initial scraping.

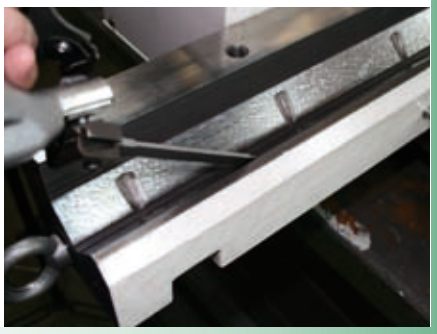
In case of holes or other interruptions, it is necessary to "scrape round" these and under no circumstance to "scraper over" them. In case of interruptions by oil grooves, always make sure that a blade with a large cutter curvature is used. This prevents the blade from hooking into the oil groove.

In order to facilitate scraping, if possible the oil groove should be milled after scraping.

Scraping dovetails and prisms

Because of their poor accessibility by hand, it is difficult to scrape the dovetail guides, which frequently occur in machine tool production. For this reason, an angled prolonged clamp holder was developed for the scraper BL 40. The blade has a thin carbide tip so that the dovetail can be scraped up to the acute angle.

If the dovetail or prisms guide is easily accessible, a tool displaced by 90° is recommended. This model does not hinder the skilled worker and permits good visibility of the workpiece. Dovetail guide may not be too steeply scraped. Experience has shown that a scraping direction at 45° to the guide is the most advantageous.



The scraping tool – the influence of various radii and angles on the scraping results

The treatment of each workpiece with the scraper begins with prescaping or roughing. In this operations, it is not yet necessary to ensure small bearing points. Therefore, a blade with a large radius is used in order to enable rational working.

Blades with a large radius also have a large effective surface with which a wide scrape is obtained. Only after several scraping over and touching up operations do more and more bearing points appear. The blade radius must now be smaller in order to effectively treat the individual bearing points.

Operation of the scraper

The scraper guarantees precision workmanship.
Please note the following instructions:

Hold the scraper head with your left hand, put four fingers below the leather strap and the thumb over it. The right hand holds the motor and helps to guide the scraper. A left-hand should hold the machine in reverse. When working in a horizontal position, press the scraper against your hip. Thereby the power of recoil (force of reaction) will be absorbed.

Electronic adjustment of the stroke rate / min:

(only for electronic models)

The adjustment wheel of the electronic unit is in the rear.

Stroke adjustment

The stroke adjustment is identical for the types
BS 40, BL 40, BL 10 and DL 40.

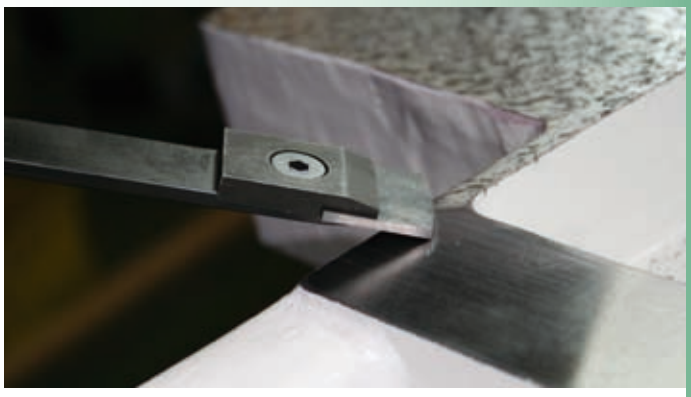
Slide the scraper shoe to the front reversal point. In this position, the adjustment screw appears on the underside of the housing.

Use the enclosed Allen wrench SW 6 for stroke adjustment. Turning to right increases the stroke, turning to left reduces it.
The holes in the bell help to position the adjustment screw correctly.

Operation
Scraping

1st Step: Prescraping

The part to be trimmel has already been prepared (precision milled, dressed or ground).The first scraping step creates the base.
For machine scraping, a blade or scraping insert (25 mm or 30 mm) with a large cutter radius (depending on the size of the workpiece) and a stroke of 12 mm to 20 mm are chosen. The cutter of the scraping tool is placed onto the workpiece at an angle of approx. 45°. The scraper is moved horizontally across the workpiece at a speed that allows the stroke to just overlap. After scraping the complete surface, this procedure is repeated once again and at 90° to the first scrape.



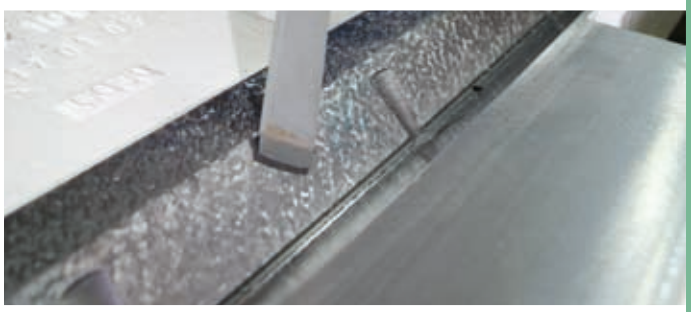
2nd Step: Plane scraping

In this case, scraping is performed parallel to the opposing corners. This procedure requires a somewhat shorter stroke (6 mm to 12 mm) and a narrower blade (15 mm, 20 mm or 25 mm).

After the surface has been prescraped, the point projecting from the plane or bearing accuracy are scraped until a satisfactory result is obtained.

3rd Step: Finish scraping

The quality of the surface to be scraped increases with the number of bearing points. Initially, bearing points are large and exist only in a small number. If the stroke is reduced (2 mm to 6 mm) and if 15 mm or 20 mm scraping tools are used, the large bearing points are scraped off provided that no pressure is applied when guiding the scraper over the surface (it is not necessary to raise the scraper). A rhythm can be quickly developed and the result is that several and smaller bearing points are distributed over the entire surface.



Precision scraping, resp. oil-tight scraping

The maximum number of bearing points (mostly 24-40 per square inch) results in the distribution of fine and extremely fines recesses of 2-3µ. They cause good adhesion of the oil film and thus considerable reduce the condition of mixed friction during start-up. The depth of the oil pocket is determined by the demands, which will later be placed on the scraped surface. Large loads require relatively deep oil pockets (approx. 6-8µ) in order to guarantee the perfect formation of an oil film even after a long period of operation. An oil pocket depth of approx 2-4µ is expedient for low loads. The deep oil pockets are obtained by using a spring-tempered scraper blade with a small radius.

However, flatter recesses are obtained with a large blade radius. The choice of the scraper contact angle is also important. A large contact angle causes deep oil pockets, and a small contact angle causes flat oil pockets. Depending on the appearance of the points, in precision and oil-tight scraping these are handled more or less intensively, depending on their bearing capacity. In order to obtain an interspersed appearance, the surface is scraped in four directions each displaced by 90° and thus pattern scraping is unnecessary. Surfaces scraped this way look like arbitrarily composed chessboards. In any case, the same amount of bearing points will be obtained as if the surface were handscraped. The correct stroke length (refer to the diagram p. 8) as well as the use of a spring-tempered scraper blade are preconditions for this.

All about scraping

Scrape over all visible marks resulting form grinding, planing, milling. etc. at angles of 45°.
Large stroke with BIAX clamp holder KL 130 and BIAX scraping insert 25 x 30 mm.

Clean lapped blades increase the smoothness of the scraped surface, simply scraping and prevent marks.

Scrape over the surface-over operation, alter the scraping direction so that the scraping tool does not hook into the recesses of the preceding scraping-over operation.

Uniform light at the workplace without shadows is important.

After scraping and before spotting, remove alls chips.

In case of gray cast iron, all hard plastics and non-ferrous materials, use carbide-tipped scraping tools.

Only scrape over hard steel with carbide-tipped scraper blades or inserts with a negative cutting angle.
Better removal of chips is obtained by means of a lubricant.

Lightly dye the spotting tools with the spotting roller. The bearing points cannot be seen in their true size if the engineers´ blue is too thick or uneven.

Remove scraping residues with a fine gain sharping stone.

When spotting, move the spotting insert with uniform movement and without pressure over the surface. Too much or uneven pressure results in incorrect scraping.

Do not move the spotting insert too far over the corners; excessive weight and pressure ruin the scraping pattern.

Repeat the scraping procedure until a maximum of 40% bearing area is obtained in case of sliding surfaces, and up to 90% bearing area is obtained in case of flanged surface.

The scraping depths can be determined by means of a peak-to-valley height measuring instrument.

Sharpen in good time the blade of the carbide-tipped scraper tool with the BIAX scraper blade grinding and lapping machine.

Only sharp scraping tools remove small particles and lead to good results with little effort.

Frequently clean the spotting insert with cleaning fluid.

The scraping time consists not only of scraping but also of: Roughing and spotting the workpiece. Checking the scraped surface for bearing points. Measuring parallelism and accurate positioning. Sharping the scraping tools.

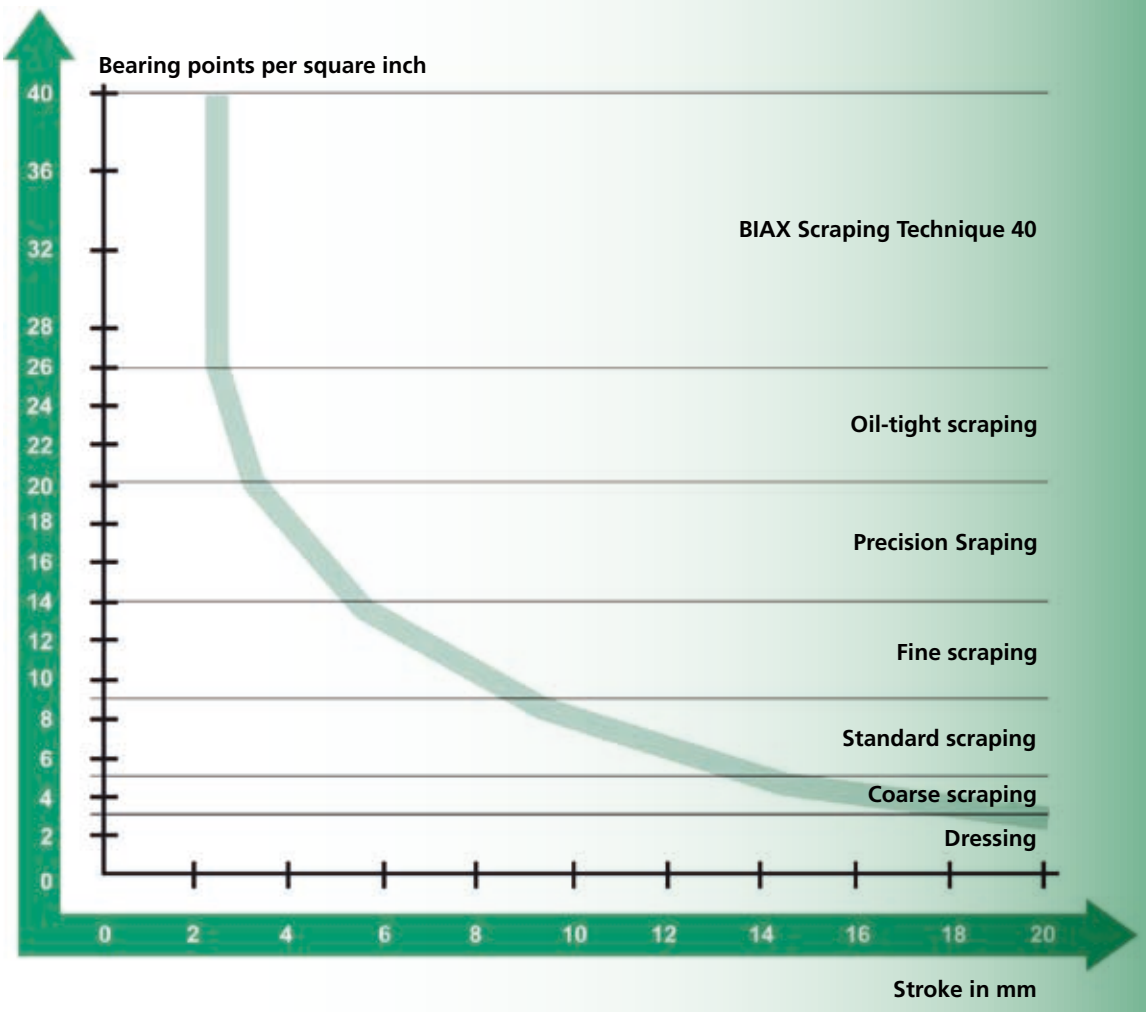
Large surface are easier to scrape than small, interrupted surface. Dovetails, prisms guides, recesses and vertical surface are difficult to scrape.

Machine scraping or manual scraping?

The advantages of machine scraping are evident in practice. The technical development has surpassed the methods of the past and contributed towards the elimination of prejudices. Companies and employees have profited from this.
The hard competition on the marked forces companies to rationalalize and forces employees to do their best. This results in improved products and better market chances.

Modern machines can solve production problems. But in this own way, the skilled worker, the trained scraper, is affected. Therefore, ways and means have to be found to eliminate difficult physical exertion, to protect workers´ health and to increase efficiency.
The worker can now connect his own scraping rhythm with that of the BIAX scraper and can shape maximum surface qualities without effort.
The BIAX scraper is the technicallly fully developed, electronically variable, modern hand-held tool for easier, quicker and better scraping.

Recommended value for bearing points



Recommended value for applications

Recommended value for applications

Scraping inserts (L x W)		30/40 ST	25/30 ST	25/35 ST	25/20 ST	-	-
Scraping blades (W)		-	30	25	20	-	15
Spring-mounted scraping blades (W x L)		-	30/150	25/150	20/150	20/150	15/150
Cast iron	Grey cast		x	x	x		x
	Malleable cast iron		x	x	x		x
	Cast steel	x	x	x	x	x	x
	Heavy metal casting		x	x	x		x
Heavy metal	Steel	x	x	x	x	x	x
	Brass		x	x	x		x
	Cooper		x	x	x		x
	Bronze		x	x	x		x
Plastics	PE		x	x	x		x
	Polyamide		x	x	x		x
	PTFE		x	x	x		x
	PVC		x	x	x		x
	Laminated plastic		x	x	x		x
	Hard materials		x	x	x		x

In special cases. We will advise on the selection of the correct scraper blade.

Scraping vertical surfaces

Thanks to its unlimited mobility, the new BIAX precision scraper is best suited to scraping vertical surfaces. As the manual scraping of vertical surfaces is linked with physical effort, the effort-saving operation of this device is demonstrated particularly well in this example. It is obvious that time and expense is saved due to lesser physical stressing of the worker. For vertical scraping, the BIAX scraper is used together with a pulley, which, thanks to its method of operation, makes the scraper almost weightless at any height, if properly adjusted. It is possible to perform crosswise scraping in both upwards and downwards direction. The pully is suspended at an appropriate height from an available beam of the hall construction, on a derrick or even better on a column with a swiveling jib. This should be suspended in such a way that, when hanging freely, the machine just comes into contact with the surface to be scraped. Thanks to its unlimited mobility, the new BIAX precision scraper is best suited to scraping vertical surfaces. As the manual scraping of vertical surfaces is linked with physical effort, the effort-saving operation of this device is demonstrated particularly well in this example. It is obvious that time and expense is saved due to lesser physical stressing of the worker. For vertical scraping, the BIAX scraper is used together with a pully, which, thanks to its method of operation, makes the scraper almost weightless at any height, if properly adjusted. It is possible to perform crosswise scraping in both upwards and downwards direction. The pully is suspended at an appropriate height from an available beam of the hall construction, on a derrick or even better on a column with a swivelling jib. This should be suspended in such a way that, when hanging freely, the machine just comes into contact with the surface to be scraped.

Mounting machine tools

When repairing machine tools, it is no longer necessary to dismantle these in order to repair clogged up sliding surfaces on a planing machine. As a rule, compacted material due to clogged up sliding surfaces is extremely hard. Such areas are cleared with the BIAX electronic scraper BS40.
For this purpose, a carbide-tipped scraper blade or carbide-tipped insert is used in conjunction with the clamp-holder KL130; the blade with and blade radius depend on the size of the workpiece. The cutting angle is a negative angle of 0-5° in order to handle a large amount of material. The clogged up hard surface is roughened with a large stroke. Subsequently, the surface is scraped to the desired degree of quality with the BIAX electronic scraper BL40 in conjunction with a spring-tempered scraper blade.

Scraping of Half moon patterns

Grinded surfaces can be prepared with half moon patterns with the BIAX Half Moon scraper. Half moon patterns are convex areas which keep the oil and due to this they offer a permanent Lubrication of the sliding surface.
The permanent lubrication of the sliding surface will be guaranteed due to the in and out flow of the lubricant. Due to this can the Half moon patterns be specially recommended for this Matter. Additional are half moon pattern prepared surfaces very impressive.

Use: The half moon scrapper will be moved in a line over work piece surface. Constant patterns are A result of constant feed. Depending on the wished depth of the convex areas the tilt angle has to vary.

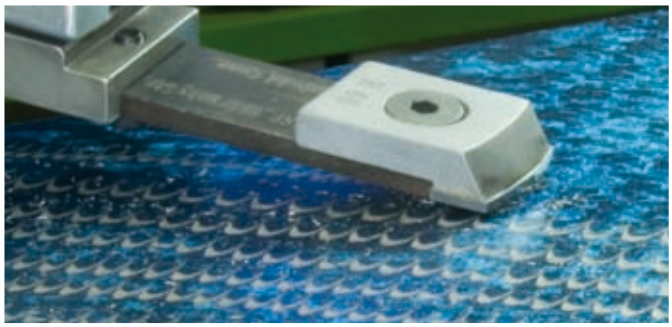
- Big tilt angel creates deeper areas
- Small tilt angel creates lower areas
- Big blade radius creates big half moon patterns
- Small blade radius creates small half moon patterns

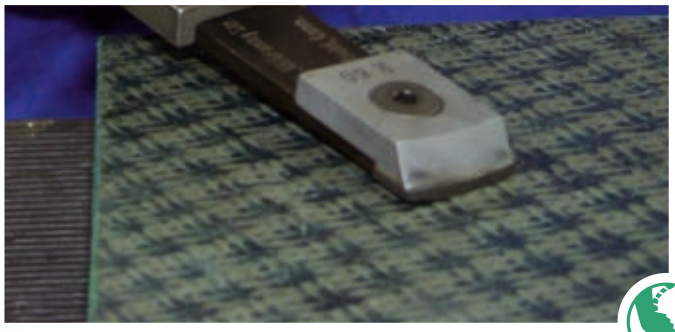
Influence of different blade radius and tilt angles on the scrapping result

Scrapping of machine casting, grey casting, brass, bronze and hard material will vary as follows:

Are you looking for Big chip removal or small chip removal? Last case can be done with an, standard BIAX blade with an negative cutting angle of 3,5°, which is standard delivered. As negative the cutting angle on the blade is, as smoother and as less grooves are in the surfaces.

To prepare machine bodies (grey cast iron) which are extremely contorted, the cutting angle should be grinded with an negative Cutting angle of 0 – 1°. This offers a higher removal of material."





How to scrap gray cast iron?

This material is predominantly used in the production of machine tools. In this case, only carbide-tipped scraper blades and carbide inserts are suitable. If a large amount of material is to be removed, then scrape with a long stroke and a wide blade with a negative cutting angle of 0 – 1°. After obtaining the desired base, you can begin with finishing.

How to scrap wax castin?

It is easily to scrape this type of cast. It may be necessary to alter the cutting angle of the insert in order to obtain the desired results.

How to scrap steel with a high resistance of more than 700 N / mm² ?

The BIAX scraper with a steel scraper blade or insert is predominantly used for steel scraping. The scraping method is the same as for cast steel. The use of lubricant such as, for example, emulsion or petroleum (agents containing no grease) improves surface quality. In case of the steel scraper insert, the cutting angle should generally be 32° and, in case of a resistance of more than 700 kp / mm², the insert radius should be 60 mm. Steel with an extremely high resistance can also be scraped with carbide tipped-blades.

How to scrap cast steel?

It is impossible to say in advance whether a negative or positive angle should be used in this case. A solution to this question can only be found by trying out various cutting angles.

How to scrap non-ferrous metals?

These materials are mainly used between sliding surfaces, which operate under enormous pressures. They are simply scraped with a negative ground carbide-tipped scraper blade or insert. Best suited is the BIAX precision electronic scraper BL 40 or the BIAX compressed air scraper DL 40.

How to scrap brass and red bronze?

Brass and red bronze can be scraped lightly. Negatively ground carbide-tipped scraper blades or inserts are used.

How to scrap aluminium?

We recommend carbide-tipped scraper blades and inserts to scrape aluminium. Whether a positive or negative cutting angle should be used depends on the material strength. The alloy determines the correct cutting angle. A water-soluble cutting emulsion (containing no grease) ensures a clean and smooth surface.

How to scrap bronze?

Bronze is easy to scrape. Like in case of brass, negatively ground cutters should be used.

How to scrap white metal?

This material is easy to scrape with the BIAX precision electronic scraper BL 40 or the BIAX compressed air scraper DL 40. The stroke rate must be adjusted to 700 - 800 strokes / min^{-1}. The cutting angle should be a negative angle of 20 - 25° with a large blade or insert radius. This way, large bearing points are obtained and a large bearing area. Alcohol is well suited as lubricant.

Blade Assortments

Assortment No. 10

Order number: 210 099 710

BIAX Blade Assortment No. 10, for scraper type BS 40, BL 40, BL 10 und DL 40		
Contents		
Clamp holder:	KL 80, KL 130, KL 130 V	
Control Gauge:		
Scraper inserts:	25/20, 25/25, 25/30	30/40 ST
Scraper blades:	15/90, 20/90, 25/90, 30/90	

Assortment No. 20

Order number: 210 098 910

BIAX Blade Assortment No. 20, for scraper type BS 40, BL 40, BL 10 und DL 40		
Contents		
Clamp holder:	KL 170	
Control Gauge:		
Scraper blades:	15/150, 20/150, 25/150, 30/150	20/150 ST

Assortment No. 30

Order number: 210 099 510

BIAX Blade Assortment No. 30, for scraper type HM 10	
Contents	
half-moon pattern scraper inserts:	R 60/20, R 90/20, R 120/20, R 150/20

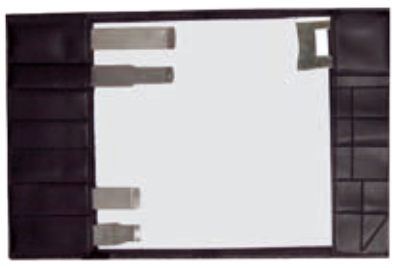
Assortment No. 31

Order number: 210 099 500

BIAX Blade Assortment No. 31, for scraper type HM 10	
Contents	
Clamp holder:	KL 70
half-moon pattern scraper blades:	R 60, R 90, R 120, R 150

Assortment No. 40

Order number: 210 098 500



BIAX Blade Assortment No. 10, for scraper technic 40		
Contents		
Control Gauge:		
Scraper blades:	15/90/R 20, 20/90/R 40	15/150/R 20, 20/150/R 40

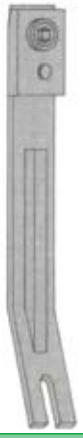
Scraping tools
Scraper blades

BIAX-Scraper inserts

Function	Carbide for prescraping and finished scraping					
						
Type	20/25	25/25	25/30	25/20	25/20	25/30
Order number:	001 400 203	001 400 205	001 400 207	001 400 219	001 400 220	001 400 221
Dimensions (LxW): mm	25x20	25x25	25x30	25x20	25x20	25x30
Cutter radius: mm	60	90	140	300	300	300
Cutting angle:	-3,5°	-3,5°	-3,5°	-3,5°	-3,5°	-3,5°

Funktion	Can be used as grinding gauge, for control scraping blade radius, for controlling bearing points, for cleaning particles from the workpiece	HSS- specially for scraping steel	
			
Type		25/30 ST	30/40 ST
Order number:	003 001 639	001 400 209	001 400 210
Dimensions (LxW): mm	60x50	25x30	30x40
Cutter radius: mm	-	60	60
Cutting angle:	-	+32°	+32°

BIAX-Clamp holder for scraper inserts

Funktion	Standard short type	Extended flexible	Turned for places of difficult access	For scraping at points with difficult access in conjunction with scraping blades
				
Type	KL 80	KL 130	KL 130 V	KL 170
Order number:	007 004 696	007 004 695	007 004 679	008 002 791
Dimensions (LxW): mm	85x23	135x23	134x23	170x24

BIAX-Carbide-tipped blades 90 mm

Function		dovetail guides for narrow guides	Standard blades for narrow guides	Standard blades prescraping	Prescraping	Prescraping
						
Type		10/90	15/90	20/90	25/90	30/90
Cutter radius:	mm	60	60	60	90	140
Order number:		001 400 401	001 400 403	001 400 405	001 400 407	001 400 409
Cutter radius:	mm	-	20	40	-	-
Order number:		-	001 400 413	001 400 414	-	-
Dimensions (W x B)	mm	90 x 10	90 x 15	90 x 20	90 x 25	90 x 30
Cutting angle:		-3,5°	-3,5°	-3,5°	-3,5°	-3,5°

BIAX-Carbide-tipped blades 150 mm

Function		Special blades for finishing scraping, spring-mounted type					HSS blade for scraping steel
90° turned blades on enquiry							
Type		10/150	15/150	20/150	25/150	30/150	20/150 ST
Cutter radius:	mm	60	60	60	90	140	60
Order number:		001 401 901	001 401 902	001 401903	001 401 904	001 401 905	001 401 906
Cutter radius:	mm	-	20	40	-	-	-
Order number:		-	001 401 910	001 401 911	-	-	-
Dimensions (L x W):	mm	150 x 10	150 x 15	150 x 20	150 x 25	150 x 30	150 x 20
Cutting angle:		-3,5°	-3,5°	-3,5°	-3,5°	-3,5°	+32°

Scraping tools
Clamp holder and scraper inserts for pattern scraping

BIAX-Scraper inserts for scraper type HM 10

Function	Carbide-tipped Standard type - robust design, for pattern scraping			
				
Type	R 60	R 90	R 120	R 150
Order number:	001 400 902	001 400 905	001 400 907	001 400 908
Dimensions (LxW): mm	34 x 23	34 x 23	34 x 23	34 x 23
Cutter radius: mm	60	90	120	150
Cutter angle:	-3,5°	-3,5°	-3,5°	-3,5°
Pattern size:	small	standard	large	extra large

BIAX-Clamp holder

Funktion	for scraping blade inserts
	
Type	KL 70
Order number:	007 004 699
Dimensions (LxW): mm	75 x 20

BIAX-Half-moon pattern scraper blades HM10

Function	Carbide-tipped Deep oil pockets guarantee the continuous flow of oil without rupturing of the oil film			
				
Type	R 60/20	R 90/20	R 120/20	R 150/20
Order number:	001 400 415	001 400 416	001 400 417	001 400 418
Dimensions (LxW): mm	90 x 20	90 x 20	90 x 20	90 x 20
Cutter radius: mm	60	90	120	150
Pattern size:	small	standard	large	extra large

BIAX-Scraper accessories
Hand scraper for the use of BIAX-Scraper blades

Order number:		200 004 201
Dimensions:	Länge mm	400

BIAX-Scraper accessories
Hand scraper for the use of BIAX-Scraper blades

Order number:		200 004 401
Dimensions:	Länge mm	445

BIAX-Scraper accessories
Tuschierfarbe zum Einfärben von Tuschierwerkzeugen

Order number / blue	001 402 201
Order number / red	001 402 202

BIAX-Scraper accessories
Roller for applying engineers´blue on master plates jigs

Order number 001 402 302	molton ø x width	35 x 120 mm
Order number 001 402 303	rubber ø x width	50 x 150 mm

BIAX-Scraper blade grinding and lapping machine SKM 80

This machine is used to grind and lap carbide-tipped scraper blades, changing inserts, turning tools, reversible inserts, etc.

The grinding table can be swivelled vertically for each positive and negative cutting angle grind. An integrated coolant pump guarantees wet grinding. Thanks to its compact design and low weight, the SKM 80 is easily transportable and can be connected everywhere by means of the 230 / 400 V motor.

Technical Data		Order number: 210 098 700
Table swivelling by 200 x 110 mm	swivelling by +/- 15°	
Dimensions:	450 x 250 mm	
Weight:	35 kg	
Motor:	230/400 V - 50 Hz - 2700 min^{-1} - 184 W	
Enclosed accessories		
Diamond wheel:	Ø 80 x 10 mm Korn D 50	Order number: 001 451 405
Abrasive:	0,5 Liter	Order number: 001 950 211
Sharpening stone for diamond wheel:		Order number: 001 365 503