

**Coarse Scraping** 

**Standard Scraping** 

Fine Scraping

**Precision Scraping** 

Oil-tight Scraping

**Scraping Technique 40** 



1	Scraper	<b>Types</b>
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# 2 Operating Instructions

3 Application

4 Scraping Tools

5 Accessories



# **Electronic Scraper**

# Type BS 40

**Order Number:** 230 V 200 040 000 115 V 200 040 010

# 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.

Technical Data		
Electronically variable strokes up to	p.m.	1600
Infinitely variable stroke length	mm	0-20
Power consumption	Watts	320
Noise level	dB/A	82
AC Voltage	Volts	230/115
Weight	kg	5,5
Dimensions (length x width x height)	mm	440x80x107



**Order Number:** 230 V 200 040 030 115 V 200 040 040

### **BIAX Universal Scraper** light model

Particularly suitable for: Heavy scraping, standard scraping, fine scraping, precision scraping, oil-tight scraping. Also suitable for dovetail guides and prisms in conjunction with special blades.

Technical Data		
Electronically variable strokes up to	p.m.	1600
Infinitely variable stroke length	mm	0-20
Power consumption	Watts	320
Noise level	dB/A	82
AC Voltage	Volts	230/115
Weight	kg	4,0
Dimensions (length x width x height)	mm	440x80x107



# **Electronic Scraper**

# Type BL 10

**Order Number:** 230 V 200 040 200 115 V 200 040 210

# BIAX Universal Scraper light model

with special blades.

Particularly suitable for: Plastic scraping, standard scraping, fine scraping, precision scraping, oil-tight scraping. Also suitable for dovetail guides and prisms in conjunction

Technical Data		
Electronically variable strokes up to	p.m.	1600
Infinitely variable stroke length	mm	0-10
Power consumption	Watts	320
Noise level	dB/A	82
AC Voltage	Volts	230/115
Weight	kg	3,0
Dimensions (length x width x height)	mm	385x67x92



**Order Number:** 230 V 200 040 230 115 V 200 040 240

# **BIAX Half-moon Pattern Scraper**

Particularly suitable for: Scraping oil-pockets, for optically pleasuring surfaces.

Technical Data		
Electronically variable strokes up to	p.m.	1600
Infinitely variable stroke length	mm	2
Power consumption	Watts	320
Noise level	dB/A	82
AC Voltage	Volts	230/115
Weight	kg	2,7
Dimensions (length x width x height)	mm	385x67x92



# **Electronic Scraper**



Order Number: 200 040 060

# BIAX Universal Scraper light model

Particularly suitable for: Heavy scraping, standard scraping, fine scraping, oil-tight scraping. Also suitable for dovetail guides and prisms in conjunction with special blades.

Technical Data		
Strokes at 6 bar	p.m.	1400
Infinitely variable stroke length	mm	0-20
Power consumption	Watts	350
Noise level	dB/A	75
Connection thread	inch	R 3/8
Weight	kg	3,6
Dimensions (length x width x height)	mm	425x80x107
Air consumption	l/min.	600
Hose, clear width	mm	10

Connection made through a maintenance unit with pressure manometer, air filter and oil mist regulator.

# Accessories:

Maintenance unit	001 367 044
Special-purpose oil	001 365 605
Pressure hose with silencer	001 366 530



# **Operarting Instructions**



### 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-hander 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 per minute (only for electronic models)

The adjustment wheel of the electronic unit is in the rear. The stroke rate is electronically variable.



# Stroke adjustment

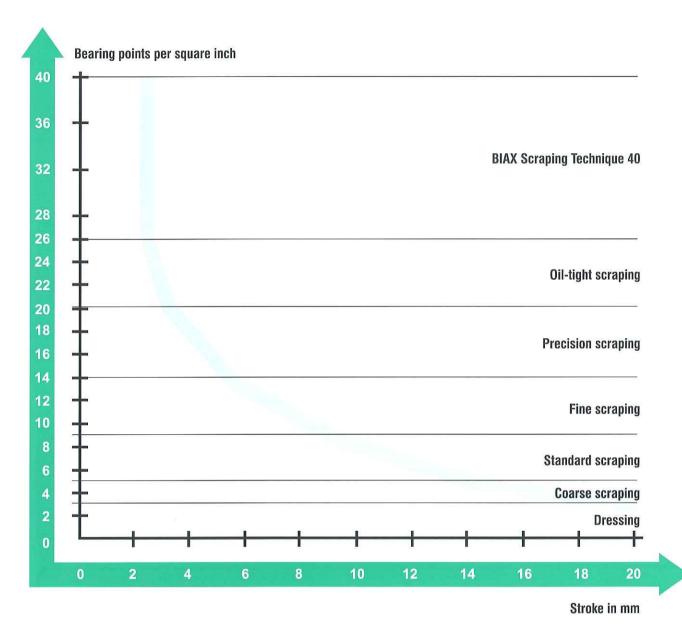
The stroke adjustment is identical for the types BS 40, BL 40, BL 10 and DL 40. Slide the scraper shoe to the front reversal point.

In this position, the adjustment screw appears on the underside of the housing. Use the enclosed Allen wrench SW6 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.

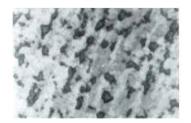






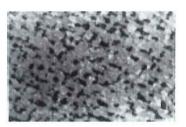
# 1st Step: Prescraping

The part to be scraped 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 strokes 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 points projecting from the plane or bearing accuracy are scraped until a satisfactory result is obtained.



# 3rd Step: Finishing 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

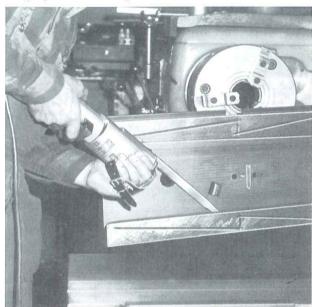
The maximum number of bearing points (mostly 24 - 40 per square inch) results in the distribution of fine and extremely fines recesses of 2 -  $3~\mu m$ . They cause good adhesion of the oil film and thus considerably reduce the condition of mixed friction during start-up. The depth of the oil pocket is determined by the demands, which will later be placed on the scraped surface. Large loads require relatively deep oil pockets (approximately 6 -  $8~\mu m$ ) in order to guarantee the perfect formation of an oil film even after a long period of operation. An oil pocket depth of approximately 2 -  $4~\mu m$  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  $90^{\circ}$  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) as well as the use of a spring-tempered scraper blade are preconditions for this.



# 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 circumstances 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 prescraping or roughing. In this operation, 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.



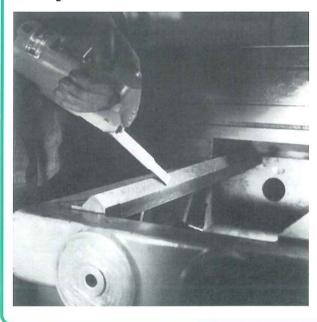
# The scraping tool the influence of various radii and angles on the scraping results



When scraping machine cast iron, gray cast iron, brass, bronze and resistant materials, the following must be differentiated: is heavy material removal required? Or if the surface is reasonably finished, is only minimum material removal necessary? In the latter case, the scraper blade or carbide-tipped insert supplied by BIAX with a negative cutting angle of 3,5° is used without modification (cutting angle for normal scraping work). The more negative the angle of cutting edge, the smoother and freer from scoring and chatter marks will be the surface scraped.

If, however, we are dealing for example with the bed of a large machine (of gray cast iron) which needs more than a tenth of a millimeter to be removed, the cutting edge should be ground to a negative angle of 0-1° in order to effect heavier removal of material.

# 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 BS 40. For this purpose, a carbide-tipped scraper blade or cabide-tipped insert is used in conjunction with the clamp-holder KL 130; the blade width 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 BL 40 in conjunction with a spring-tempered 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 pulley 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 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 pulley 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.





# How are hard and soft gray cast iron scraped?

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 is lost wax casting scraped?

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 is steel with a high resistance of more than 70 kp/mm2 scraped?

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 70 kp/mm2, the insert radius should be 60 mm.

Steel with an extremely high resistance can also be scraped with carbide tipped-blades.

### How is cast steel scraped?

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 are non-ferrous metals and plastics scraped?

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 are brass and red bronze scraped?

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

# How is aluminum scraped?

We recommend carbide-tipped scraper blades and inserts to scrape aluminum. 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 is bronze scraped?

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

### How is white metal scraped?

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. 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.



Scrape over all visible marks resulting from 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, simplify scraping and prevent marks.

Scrape over the surface until the whole area is bearing, then scrape bearing points.

After each scraping-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 all 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 grain sharpening 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. Sharpening the scraping tools.

Large surfaces are easier to scrape than small, interrupted surfaces. Dovetails, prisms guides, recesses and vertical surfaces 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 market forces companies to rationalize and forces employees to do their best. This results in improved products and better market chances.

Modern machines can solve production problems. But, in his 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 technically fully developed, electronically variable, modern hand-held tool for easier, quicker and better scraping.



# **BIAX** scraping tools

Maximum scraping performance and quality is only obtained with BIAX scraping blades and scraping inserts as these have been specially developed for BIAX precision electronic scrapers. The scraping quality depends on the right scraping accessories. Therefore, only use original BIAX scraping tools in order to obtain the best surface quality.

Reco	ommended applications						
Scra	ping inserts (L x W)	30/40 ST	25/30	25/25	25/20	-	
Scra	Scraping blades (W)		30	25	20	-	15
Spring-mounted scraping blades		es (W x L)	30/150	25/150	20/150	20/150 ST	15/150
E	Malleable cast iron		×	×	×		×
Cast irom	Grey cast		×	×	×		×
Cas	Cast steel	×	×	×	×	×	×
	Heavy metal casting		×	×	×		×
	Steel	×	×	×	×	×	×
etal	Brass		x	×	×		×
Heavy metal	Copper		×	×	×		×
Hea	Bronze		×	×	×		×
	PE		×	×	×		×
	Polyamide		×	×	×		×
S	PTFE		×	×	×		×
Plastics	PVC		×	×	×		×
	Laminated plastic		×	×	×		×
	Hard materials		×	×	×		×

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



BIAX carbide-ti	Prescraping, dovetail guides, narrow guides	Prescraping, dovetail guides, narrow guides	Standard-blades, prescraping	Prescraping	Prescraping		
Туре	10	15	20	25	30		
Order no.	001 400 401	001 400 403	001 400 405	001 400 407	001 400 409		
Dimensions (L x W) mm	90 x 10	90 x 15	90 x 20	90 x 25	90 x 30		
Cutter radius mm	60	60	60	90	140		
Cutting angle	-3,5°	-3,5°	-3,5°	-3,5°	-3,5°		

BIAX clamp holder					
Function	For scraping at points with difficult access in conjunction with scraper blades	Can be used as grinding gauge, for control of Scraping Blade Radius, for cleaning particles from the workpiece			
Туре	KL 170	Control gauge			
Order no.	008002791	003001639			
Dimensions (L x W) mm	170 (L)	60 x 50			



Function	Special blade	Special blades for finishing scraping, spring-mounted type					
Туре	10/150	15/150	20/150	25/150	30/150	20/150 ST	
Order no.	001 401 901	001 401 902	001 401 903	001 401 904	001 401 905	001 401 906	
Dimensions (L x W) mm	150 x 10	150 x 15	150 x 20	150 x 25	150 x 30	150 x 20	
Cutter radius mm	60	60	60	90	140	60	
Cutting angle	-3,5°	-3,5°	-3,5°	-3,5°	-3.5°	32°	

Function	Special blades	HSS blade for scraping steel				
Туре	10/150	15/150	20/150	25/150	30/150	20/150 ST
Order no.	VS 1 401 901	VS 1 401 902	VS 1 401 903	VS 1 401 904	VS 1 401 905	VS 1 401 906
Dimensions (L x W) mm	150 x 10	150 x 15	150 x 20	150 x 25	150 x 30	150 x 20
Cutter radius mm	60	60	60	90	140	60
Cutting angle	-3,5§	-3,5°	-3,5°	-3,5°	-3,5°	32°

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Function / material	Carbide, for prescraping and finished scraping			Cutter radius 300°		
		$\bigcirc$		$\Diamond$		
Туре	25/20	25/25	25/30	25/20	25/25	25/30
Order no.	001 400 203	001 400 205	001 400 207	001400 219	001 400 220	001 400 221
Dimensions (L x W) mm	25 x 20	25 x 25	25 x 30	25 x 20	25 x 25	25 x 30
Cutter radius mm	60	90	140	300	300	300
Cutting angle	-3,5°	-3,5°	-3,5°	-3,5°	-3,5°	-3,5°

BIAX scraper inserts			
Function / material	HSS specially for scraping steel	HSS specially for scraping steel	
Туре	25/30 ST	30/40 ST	
Order no.	001 400 209	001 400 210	
Dimensions (L x W) mm	25 x 30	30 x 40	
Cutter radius mm	60	60	
Cutting angle	32°	32°	

# Clamp holder for scraper inserts

Function	Standard holder, short type	Extended, flexible	Turned, for places of difficult access	Can be used as grinding gauge, for control Scraping Blade Radius, for controlling bearing points, for cleaning particles from the workpiece
Туре	KL 80	KL 130	KL 130 V	Control gauge
Order no.	007004696	007004695	007004679	003001639
Dimensions (L x W) mm	80 (L)	130 (L)	130 (L)	60x50mm



# Half-moon pattern scraper blades

Function	Carbide-tipped, guarantee the continuous flow of oil to and from the pockets, which ensures goo action, for the scraping of oil pockets			ich ensures good sliding
Туре	R 60/20	R 90/20	R 120/20	R 150/20
Order no.	001 400 415	001 400 416	001 400 417	001 400 418
Dimensions (L x W) mm	90 x 20	90 x 20	90 x 20	90 x 120
Cutter radius mm	60	90	120	150
Pattern size	small	standard	large	extra large

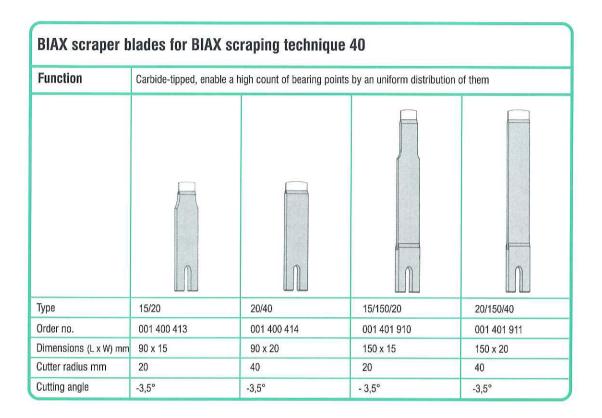


# Clamp holder and scraper inserts for pattern scraping

BIAX scraper inserts for scraper type HM 10				
Function	Carbide-tipped, standard type robust design, for pattern scraping			oing
Туре	R 60	R 90	R 120	R 150
Order no.	001 400 902	001 400 905	001 400 907	001 400 908
Dimensions (L x W) mm	34 x 23	34 x 23	34 x 23	34 x 23
Cutter radius mm	60	90	120	150
Cutting angle	_	_	_	1-2
Pattern size	small	standard	large	extra large

BIAX clamp holder		
Function	For scraper blade inserts	Can be used as grinding gauge, for control of Scraping Blade Radius, for cleaning particles from the workpiece
Туре	KL 70	
Order no.	007004699	003001639
Dimensions (L x W) mm	70 (L)	60 x 50

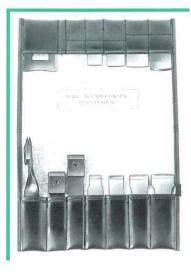




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Function	For scraper blade inserts	Can be used as grinding gauge, for control of Scraping Blade Radius, for cleaning particles from the workpiece
Type	KL 70	
Order no.	007004699	003001639
Dimensions (L x W) mm	70 (L)	60 x 50

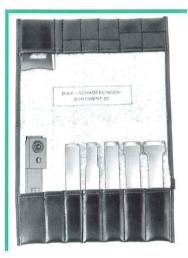


# **Blade Assortments**



Consisting of	
Clamp holder	KL 80, KL 130, KL 130 V
Control Gauge	
Scraper inserts	25/20, 25/25, 25/30, 30/40 ST
Scraper blades	Type 15, 20, 25, 30

**Order Number:** 210 099 710



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

Order Number: 210 098 910



BIAX Blade Assortment No. 30, for scr	aper type HM 10
Consisting of	
Blade inserts for pattern scraping	R 60/20, R 90/20, R 120/20, R 150/20

Order Number: 210 099 510

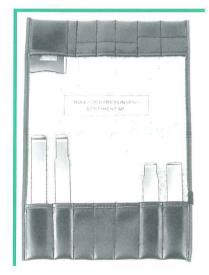


# **Blade Assortements**



BIAX Blade Assortment No. 31, for scra	aper type HM 10
Consisting of	
Clamp holder	KL 70
Blade inserts for pattern scraping	R 60, R 90, R 120, R 150

**Order Number:** 210 099 500



BIAX Blade Assortment No. 20, for scraper type BL 40, BL 10 and DL 40	
Consisting of	
Control Gauge	
Scraper blades	15/150/20, 20/150/40, 15/20, 20/40

Order Number: 210 098 500



# **BIAX** accessories

# Hand scraper

for the use of BIAX scraper blades



Order Number

200 004 201

Dimensions mm 380 (L)

# **BIAX** accessories

# Hand scraper

for the use of BIAX scraper blades



Order Number.

200 004 401

Dimensions mm 405 (L)

# **BIAX** accessories

# Engineers' blue

for marking components



Order Number / blue

001 402 201

Order Number / red

VI1 / 1 402 / 201

# **BIAX** accessories

# Roller

for applying engineers' blue on master plates or master jigs



Order No..

001 402 302

dimensions of the moltonØ x width dimensions of the rubberØ x width

35 x 120 mm

Order No... 001 402 303

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 swiveled 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 220/380 V motor.

Technical Data		Order Number: 210 098 700
Tableswiveling by	wiveling by +/- 15°	
Dimensions	mm 450 x 250 x 250	
Weight	kg 35	
Motor	230/400 V 50 Hz 2700 rpm 184 W	
Lighting	25 W	
Enclosed accessories		
Diamond wheel	Ø 80 x 10 mm, grain size D 50	Order Number:001 451 405
Abrasive	0,5 Liters	Order Number: 001 950 211
Sharpening stone for diamond wheel		Order Number: 001 365 503





# **Pneumatic and Electric Tools**

### Schmid & Wezel GmbH & Co Maschinenfabrik

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# Carbide Metal Tools

# Schmid & Wezel GmbH & Co Maschinenfabrik

Postfach 60 D-75429 Maulbronn Tel. +49 +70 43 102 2 Fax +49 +70 43 102 78



# Flexible Shafts

# Schmid & Wezel GmbH & Co Werk Hilsbach

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# **Electronic Scrapers**

# **BIAX-MASCHINEN GmbH**

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# **Meat-Processing Machines**

# Schmid & Wezel GmbH & Co Maschinenfabrik

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07043/102-71 o. 86

07043/102-81 o. 82 07043/10278

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Made in Germany

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# USA **EFA Processing** Equipment company

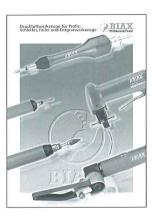
9370 G Court Omaha Nebraska 68127 Phone # 402-592-9360 # 402-592-9366 Fax efa@efa-usa.com

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# Biegsame Wellen

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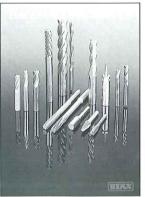
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