

Knife Holders

Quality. By professionals for professionals.



Paper



Labels
Adhesive Tape



Aluminium



Film
Foil



Nonwoven
Textile



Rubber



Printing



Mechanical
Engineering

DIENES

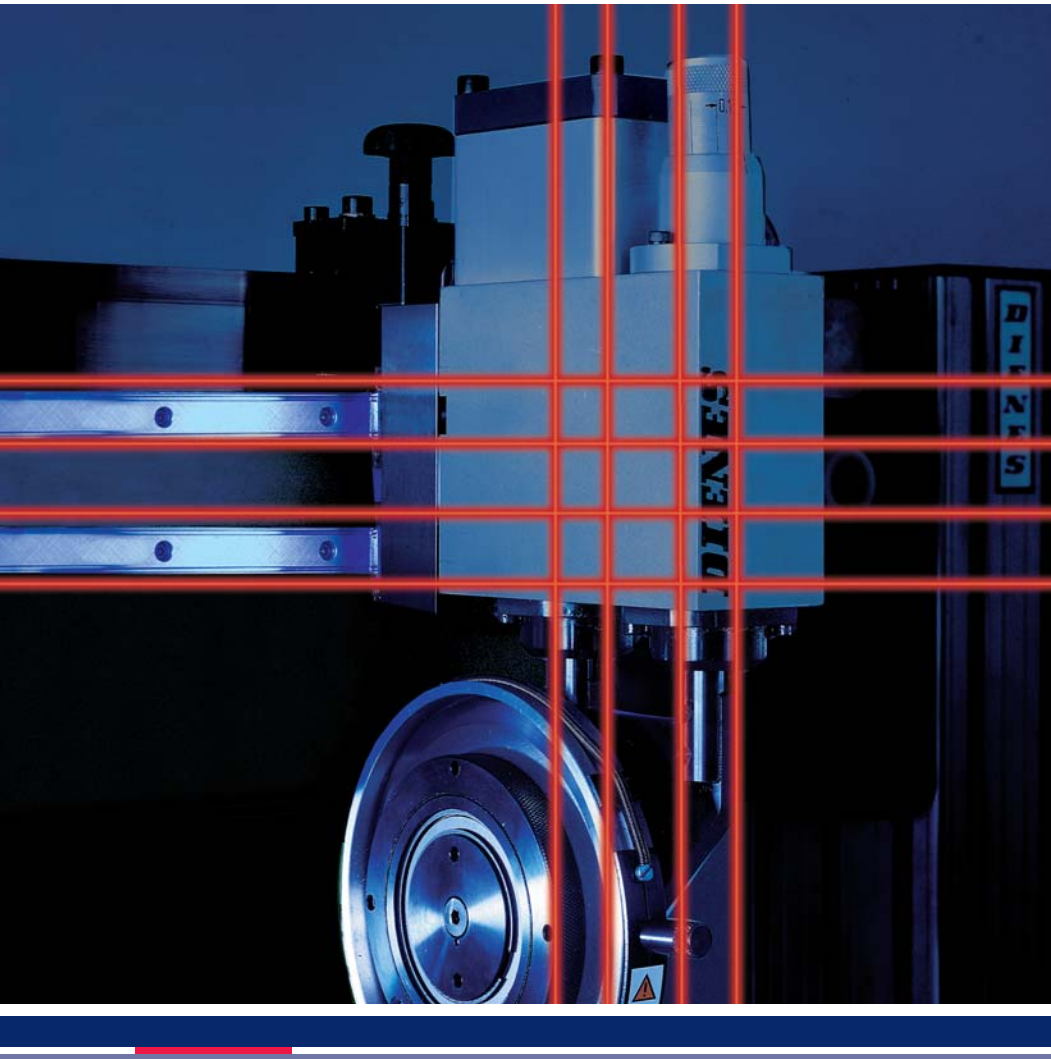
Dienes – It may be possible to copy us, but our knife holder quality always sets us apart. More than 1 million knife holder sales speak for themselves ...

Since 1913, Dienes Werke has meant outstanding quality, expertise and breakthrough innovations in the field of industrial slitting technology. Dienes is the worldwide leading supplier of circular and straight knives, knife holders and slitting systems as well as a competent partner for all related services.

Standard knife holders often do not meet varying customer requirements nor very special applications. The Dienes slitting laboratory will test cut materials with a variety of different holders and knife designs in order to determine the best solution for long term performance, functionality, and user friendliness.

Many patents of the Dienes Group trace back to these intensive research activities:

- High speed holder 3500 m/min
- Driven shear cut holder
- Constant side load CSL
- Double axle guidance DF
- Quick-change head SWK
- Adjusting slide Easy Set
- 360° knife guard SH
- Automatic depth adjustment
- Modular design
- Clean cut
- Shear angle plate
- Micro-depth adjustment
- Quick-Clamp QC
- Replacement tools
- Vibration analysis
- Electronic service life control
- Integrated knife size identification
- Spring-energy memory FES
- Telematic service and many more ...



World Class Slitting – **Worldwide**

1. Shear Cut Knife Holders

- PSGm 19 DF
- PSGm 25 DF
- PSGs 50 DF
- PSGs DF Power
- PSG DF 145
- PSG DF 150 Speed
- PSG DF 150 Motion
- PSG DF 145 Control
- PSGm 16
- PSGs 50
- PSG 1

2. Crush Cut Knife Holders

- PQA DF 19
- PQA DF 50
- PQQ
- PQAS 6,35 - 12,7 mm
- PQDS 6 - 20 mm
- PQA MC/PQD MC

3. Slitting Cassettes

- Crush Cut Module III
Slit Width from 6 mm
- Dienes Mini Cut
Slit Width from 4 mm
- Shear Cut Cassette

4. Heat Cut Holders

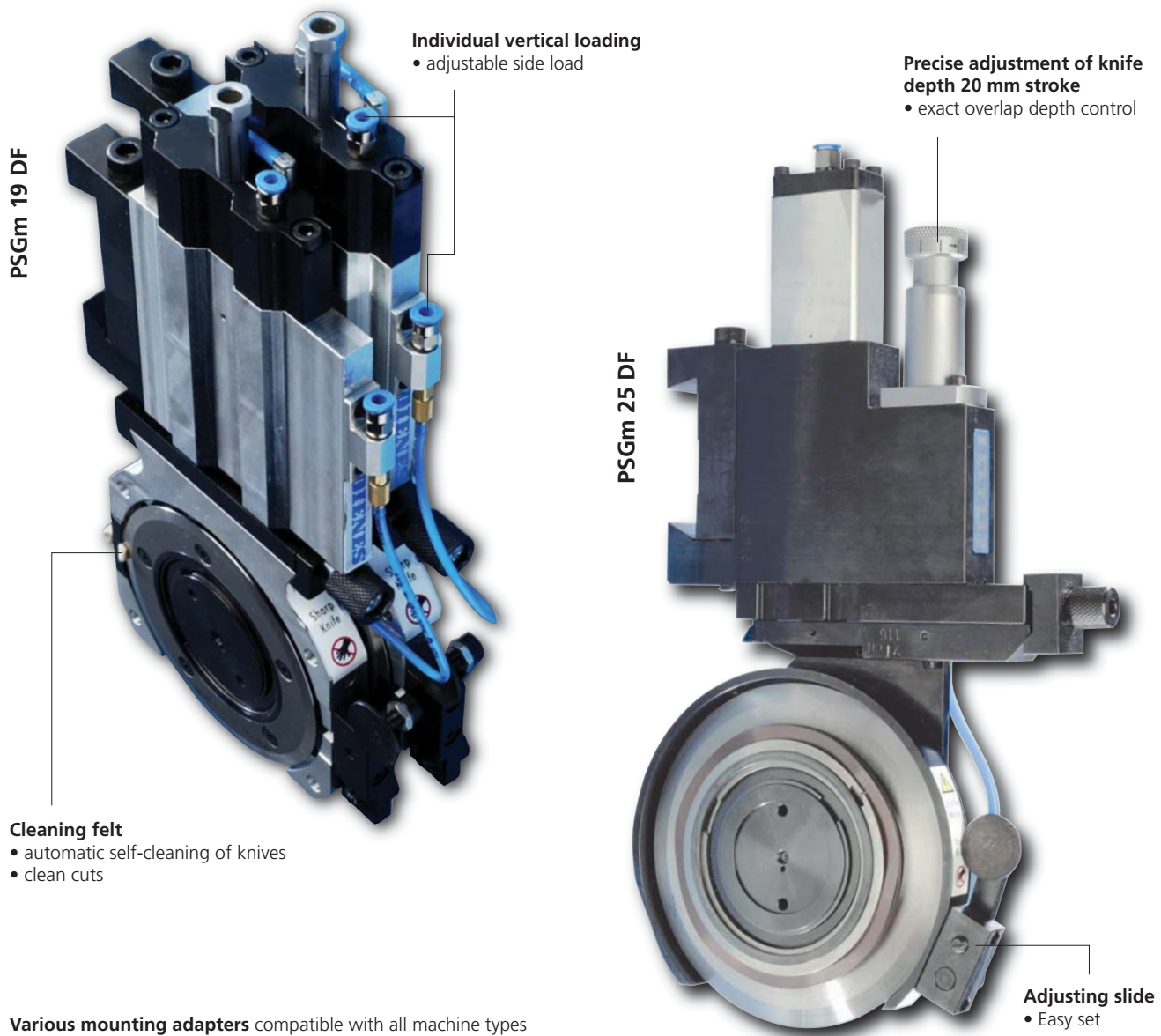
- Heated Crush Cut PQAS BH
- Crush Cut Heat Cut PQAS H

5. Razor Blade Cut Holder

- Pneumatic Knife Holders
with Razor Blade Heads
- Crush Cut Knife Holders
with Razor Blade Arms PQAS R, PQDS R
- Individual Razor Blade Holders
- Razor Blade Cassettes

6. Safety Accessories and Service Tools

- Hand Guards
- Blade Exchange Tools
- Protective Gloves
- Adjusting Aids
- Maintenance Tools
- and more ...



Shear Cut Knife Holders

PSGm 19 DF | PSGm 25 DF

PSGm 19 DF – Our Versatile

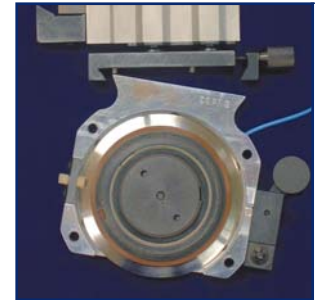
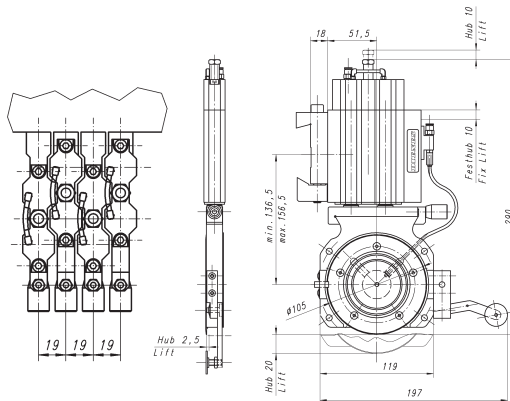
The special construction of this knife holder allows for zero clearance in vertical and horizontal guidance. Thus, with multiple holders, slit widths down to 19 mm can be reached without sacrifices to blade rigidity.

Advantages:

- Nesting concept
- Rigid construction
- Narrow slit widths

Knife Head Variants

Rigid: for hard materials such as aluminium etc.
 Spring-loaded: for soft synthetics, latex, rubber, foils etc.



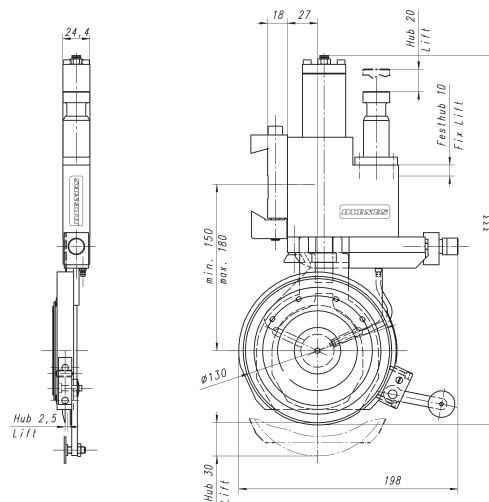
Quick-change head
 removal from the front without
 slit width adjustment

PSGm 25 DF – Proven Technology

Due to its zero clearance vertical double axle guidance, this knife holder guarantees the utmost rigidity while keeping a minimum slit width of 25 mm. User convenience is greatly increased by its precise depth adjustment and quick change knife head for easy knife replacement.

Advantages:

- Optimum slitting edge quality, even with difficult materials
- Drastic reduction of machine down times due to the quick-change head system





Shear Cut Knife Holders

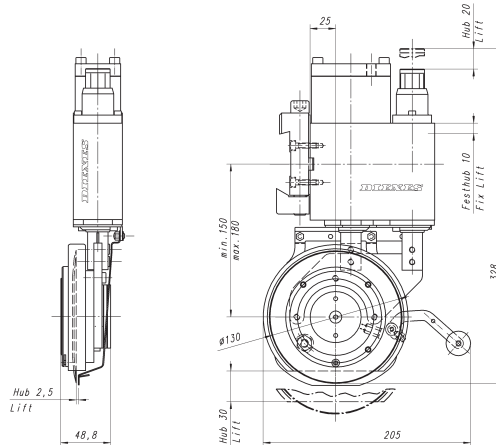
PSGs DF 50 | PSGs DF Power

PSGs DF 50 – Our Bestseller

This shear cut knife holder meets the demand for narrow overall width while providing maximum rigidity - even at high cutting speeds. This is guaranteed by the zero clearance, vibration-damped vertical and horizontal guidance systems.

Advantages:

- Repeatable knife contact forces adjustable to the material to be cut
- Increased knife life
- Optimum cutting edge quality even with difficult to cut materials
- Option: Quick-change mechanism available as an option for shear and razor blade cut



Ball-bearing knife holder axles

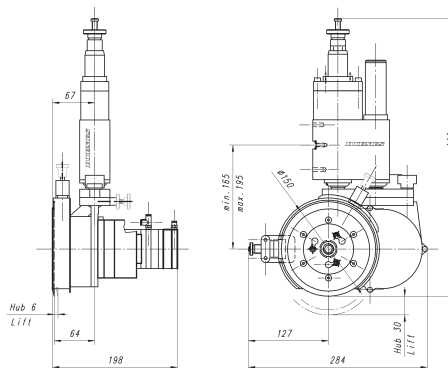
The Dienes shear cut knife holders type Elite excel by their two pre-loaded, ball-bearing knife holder axles.

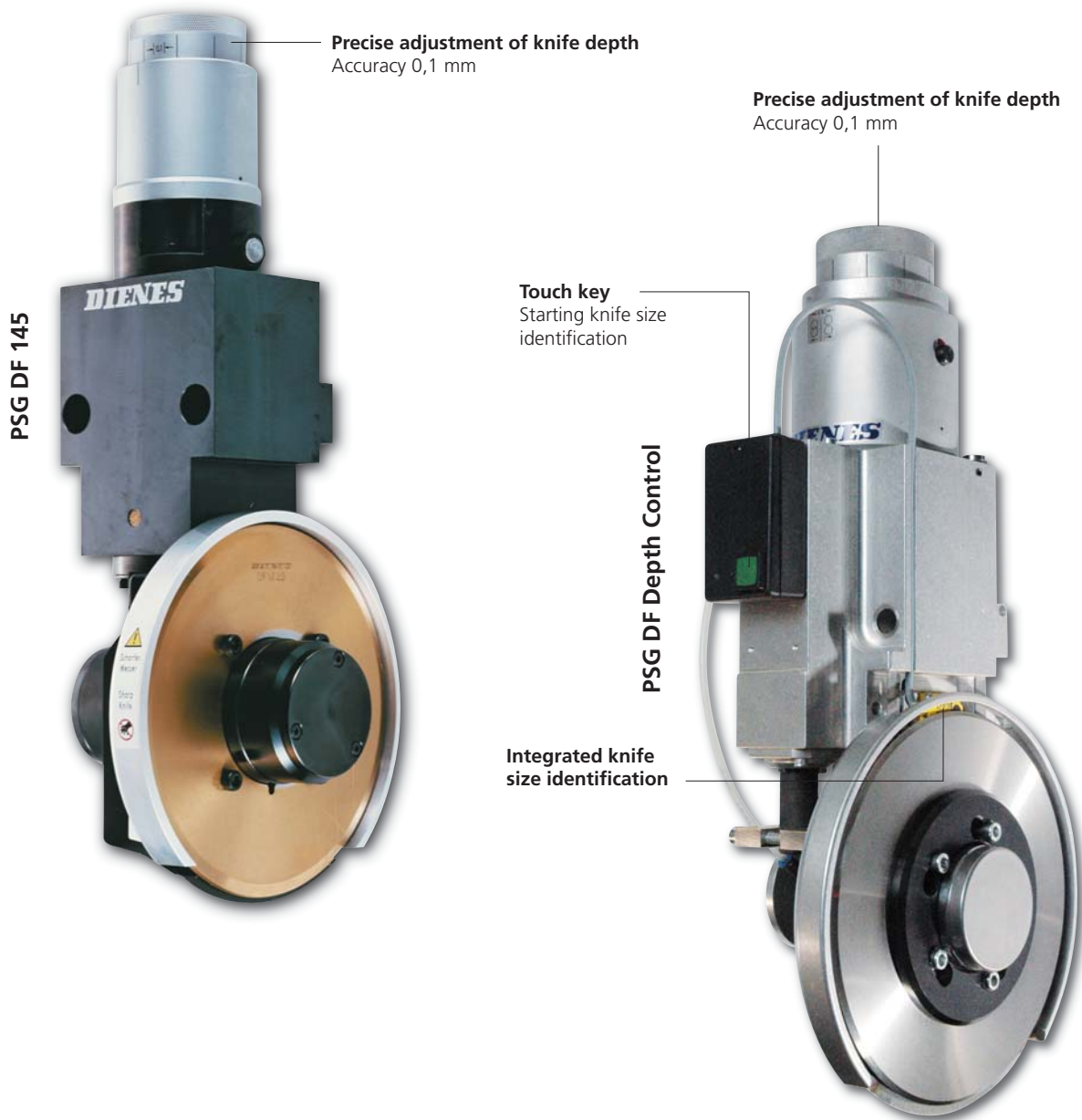
PSGs DF Power – Our Driven

The top knives of air-operated knife holders are normally rotated by the friction with the driven bottom knife. In the case of very sensitive materials - e.g. light weights such as cigarette and teabag paper or aluminium foil - any slippage between the top and bottom knife will have a very negative effect on slitting edge quality. To avoid this slippage, Dienes has developed driven top knives of various designs.

Advantages:

- Elimination of slippage
- High-precision slitting edges
- Precisely-matched speeds of top/bottom knife and web
- Increased knife life
- Minimal dust formation
- Increased safety due to reduced number of knife replacements
- Knife holders in modular designs





Various mounting adapters compatible with all machine types

Shear Cut Knife Holders

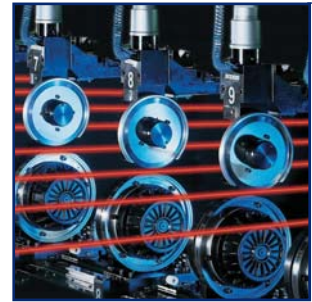
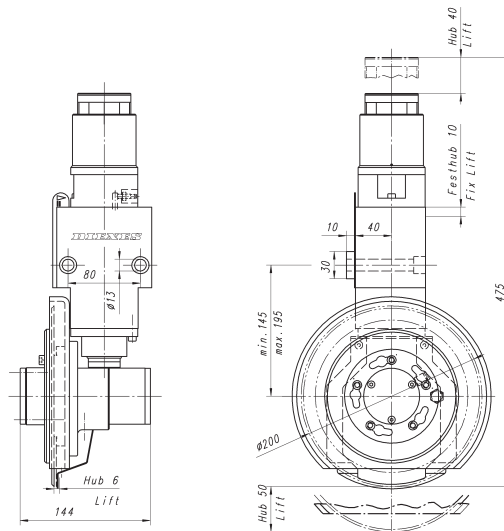
PSG DF 145 | PSG DF Depth Control

PSG DF 145 – Our Strongest

This shear cut knife holder is applicable with roll slitters as well as sheeters. It is used to guarantee the highest slitting edge quality even under difficult application conditions. With its robust design, a great variety of developments in slitting technology have merged in this holder construction.

Advantages:

- Vibration-damped guidance systems
- Zero clearance vertical and horizontal guiding of the knife head movement
- Suitable for slitting single- and multi-layer paper
- Solves difficult material slitting tasks



Correct overlap depth
by means of sensor technology

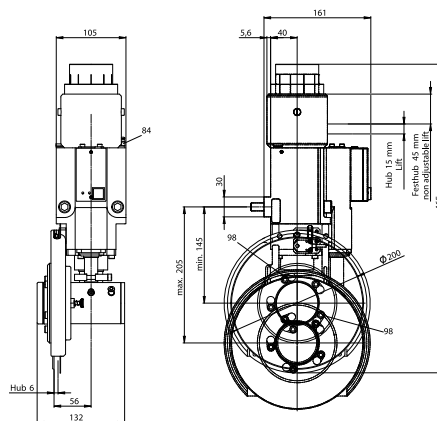
Linear bearing mounted for increased user convenience and dramatically reduced setup times (see accessories)!

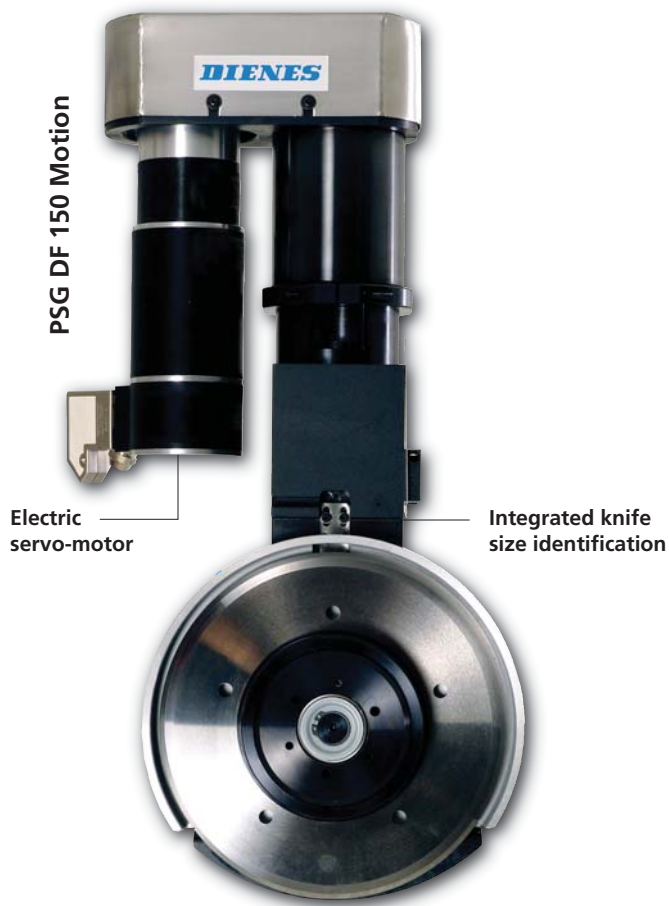
PSG DF Depth Control – Our Highlight (Winner of the ICE Innovation Award)

By means of sensor technology the correct overlap depth is shown by an optical signal so there is no need for depth setting measurements.

Advantages:

- Constant and high slitting edge quality
- Reduced setup cost
- Reduced regrinding cost
- No operating errors
- No time-consuming knife adjustments





Various mounting adapters compatible with all machine types

Shear Cut Knife Holders

PSG DF 150 Motion | PSG DF 150 High Speed

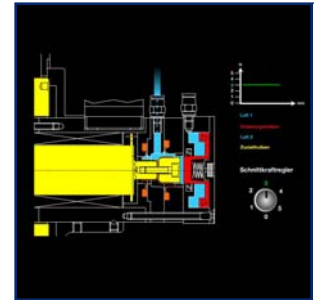
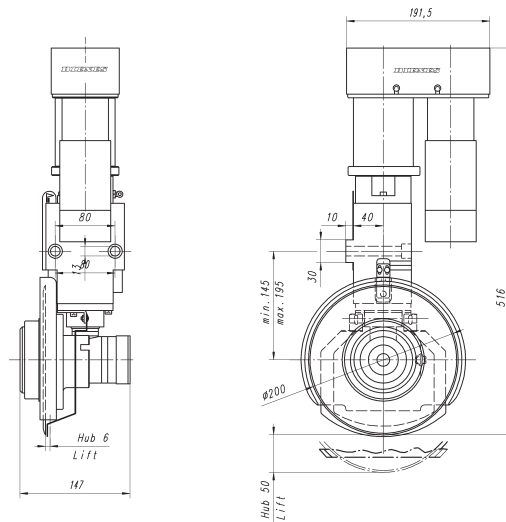
PSG DF 150 Motion – Our Genius

Automatic depth adjustment, integrated knife size calculations, input data via touch panel. This holder is based on the patented Dienes shear cut knife holder of type PSG DF 145 and its existing benefits:

- Double axle guidance DF (vibration absorbing guiding systems)
- 360° knife guard
- Constant side load CSL

Advantages:

- Dramatic increase of knife life
- Constant slit quality
- Numerical input of engagement depth
- Elimination of individual operational errors
- Higher safety standard
- Increased productivity
- Increased user convenience
- Suitable for very difficult slitting requirements



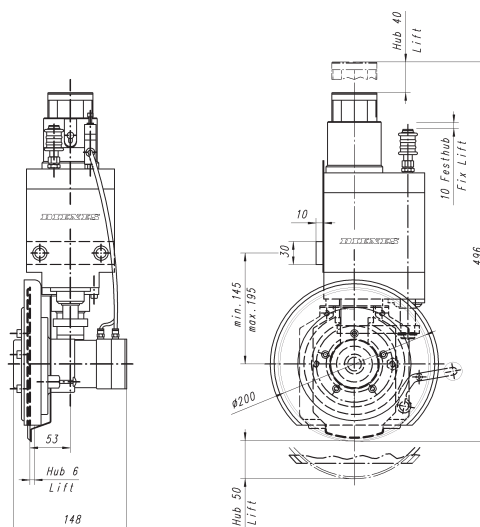
Constant Side Load CSL
for constant slitting force

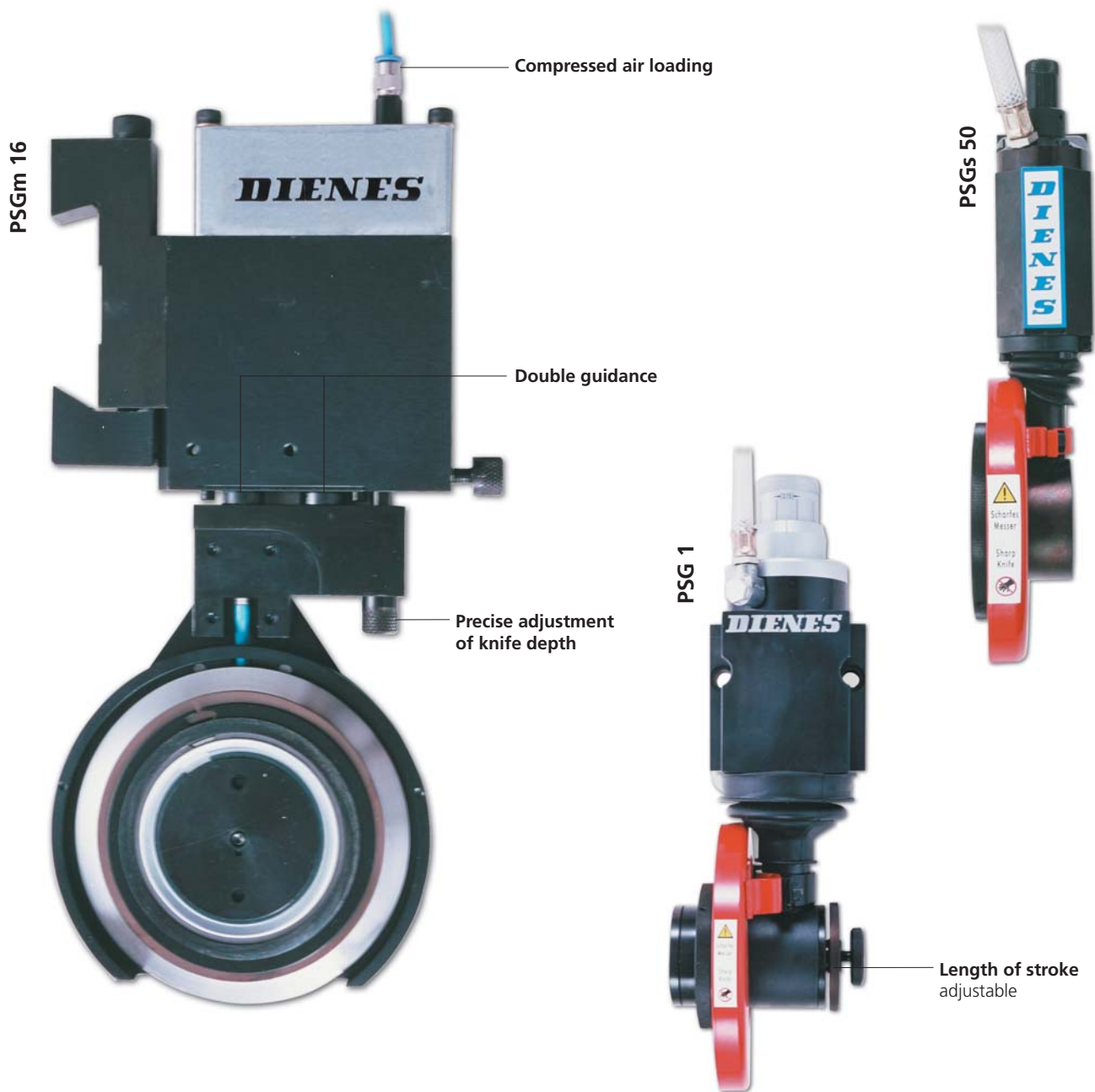
PSG DF 150 High Speed – Our Fastest

The first shear cut knife holder that has been successfully used in practice for cutting speeds up to 3500 m/min. This knife holder is known for its patented vertical knife head guidance, completed by a precise knife overlap depth adjustment and the sensitive "constant side load system" (CSL).

Advantages:

- Dramatically increased knife service life
- Reduced dust generation
- Repeatable and low knife contact pressures





Various mounting adapters compatible with all machine types

Shear Cut Knife Holders

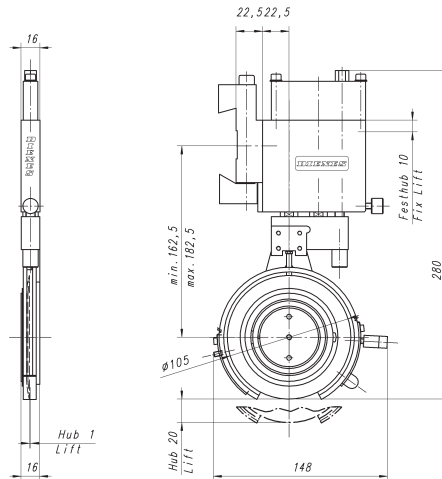
PSGm 16 | PSGs 50 und PSG 1

PSGm 16 – Our Smallest

Our narrowest knife holder with proven movement-free vertical double axle guidance for slitting narrow bands down to 16 mm.

Advantages:

- Due to the small holder width, it is not necessary to use collars or bars with staggered knife holders
- Noticeably increased profitability due to quick slit width adjustment



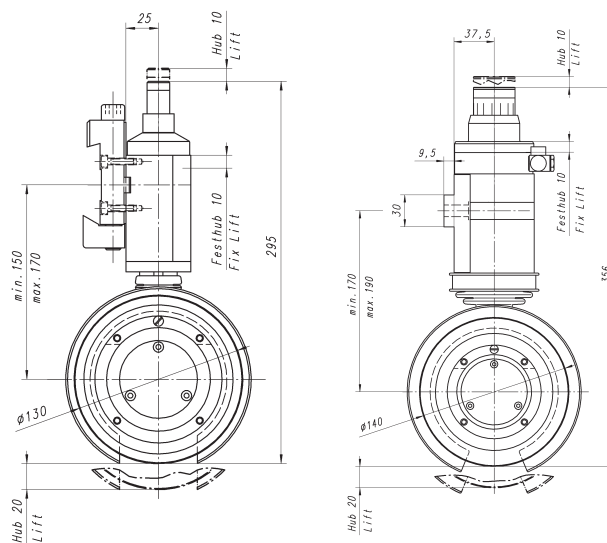
Adjustment slide
Simple adjustment to bottom knife

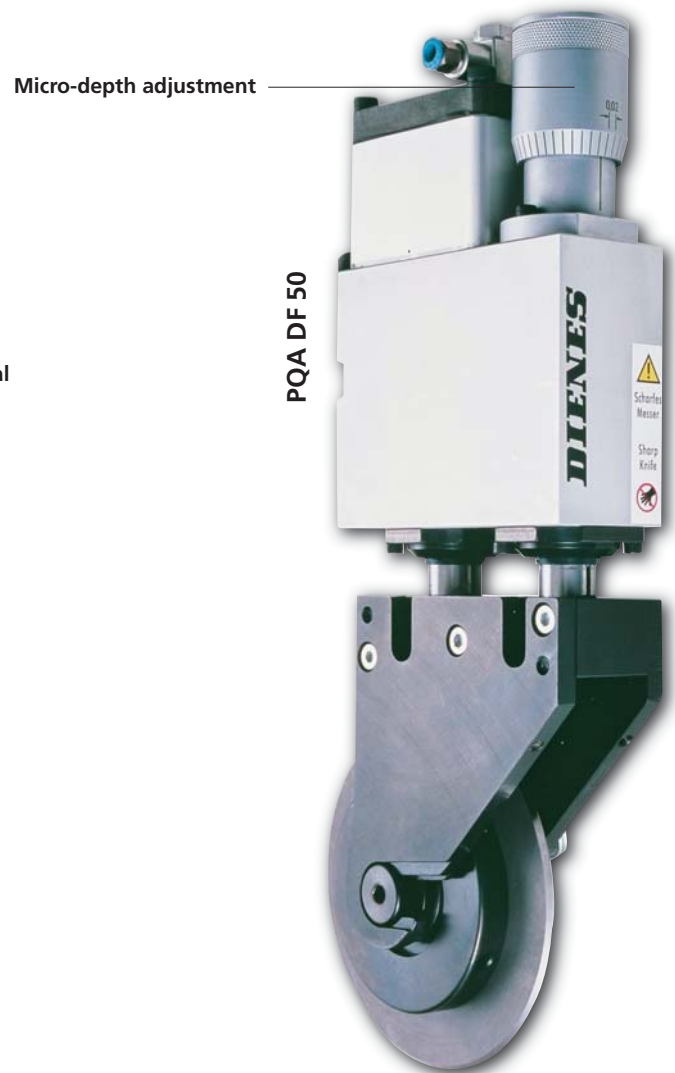
PSGs 50 and PSG 1 – Our Classics

The construction of these two shear cut knife holder designs has been proven for many years and their functionality for extremely difficult applications has been demonstrated. The holders are known for their almost maintenance free operation along with being easy to adjust and handle.

Advantages:

- Solid design
- Robust possibilities of application





Various mounting adapters compatible with all machine types

Crush Cut Knife Holders

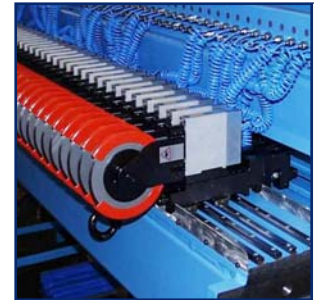
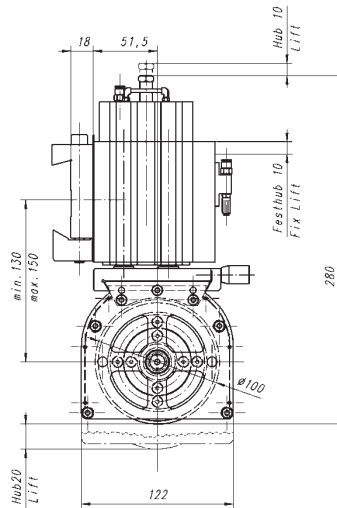
PQA DF 19 | PQA DF 50

PQA DF 19 – Our New Development

The special construction of this knife holder type allows a zero clearance vertical guidance. Narrow slit widths down to 19 mm are achieved without any sacrifice in stability.

Advantages:

- Optimum slit edge quality, even with difficult materials
- Drastic reduction of machine-down times due to quick change head system



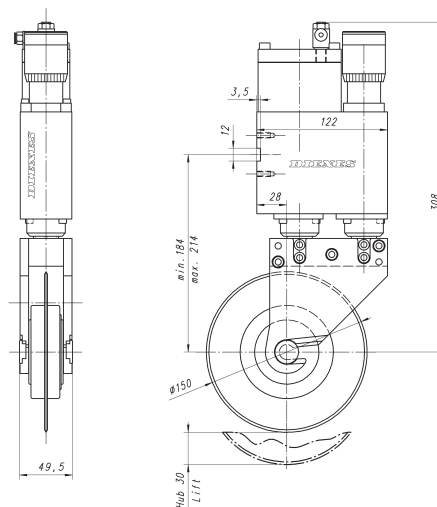
A combination of high cutting force and positioning accuracy

PQA DF 50 – Our Precise

This crush cut knife holder design meets the demand for a narrow overall width while offering the utmost stability even with high slitting speeds. Its outstanding feature is the zero clearance, vibration-damped vertical guidance of the knife head.

Advantages:

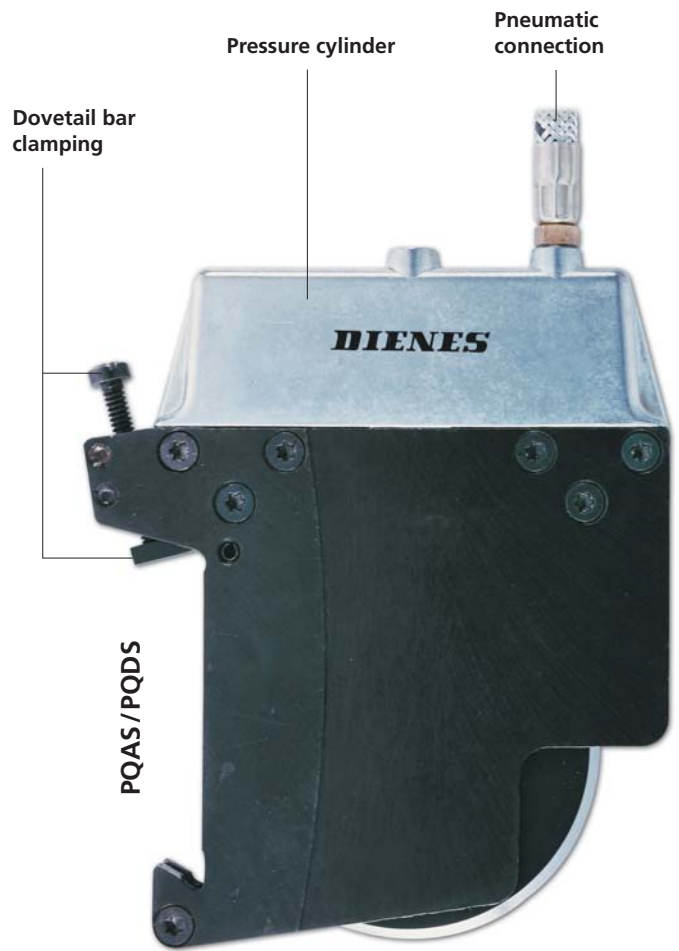
- Maximum vertical force due to optimized piston surface area
- Increased knife service life
- Optimum slitting edge quality, even with difficult material to be cut
- Well proven design for grooving and cracking labels, adhesive tapes, label-stock etc. due to high-precision micro-depth adjustment
- Depth setting in steps of 0,02 mm
- Knife head can be equipped with tool free, quick clamping device, for minimizing setup times
- A combination of high cutting force and positioning accuracy





PQG

Exchange head
with Dienes Quick-Clamp device



Pressure cylinder

Pneumatic connection

Dovetail bar clamping

PQAS/PQDS

Various mounting adapters compatible with all machine types

Crush Cut Knife Holders

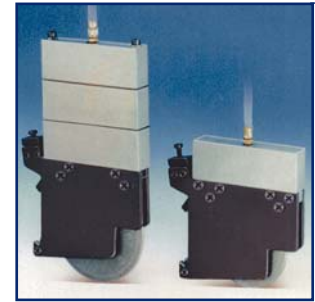
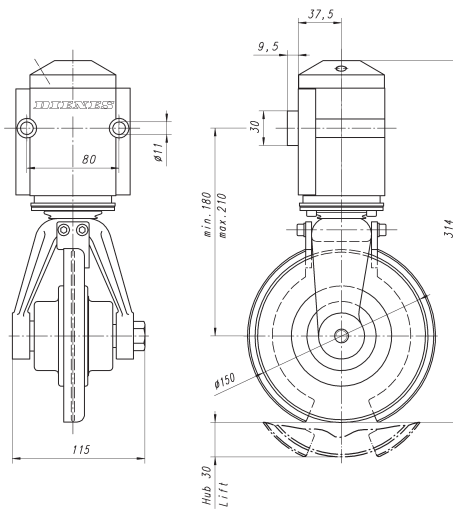
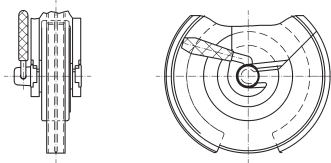
PQG | PQAS and PQDS

PQG – Our Solid

This crush cut knife holder offers proven technology at an attractive price. It has been used for many years in the most varied applications, e. g. rubber production and rubber processing, fleece materials.

Advantages:

- High product quality
- Applicable for high slitting speeds and difficult manufacturing conditions
- Change head with quick clamp device, tool less (increased min. slit width)



PQD MC3 **PQAS**

Option (with 2- and 3-fold cylinders) for higher slitting force capability

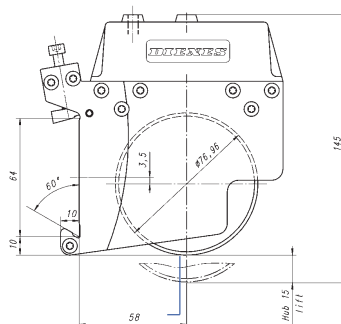
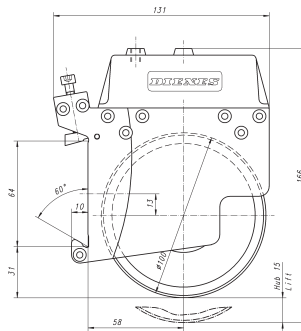
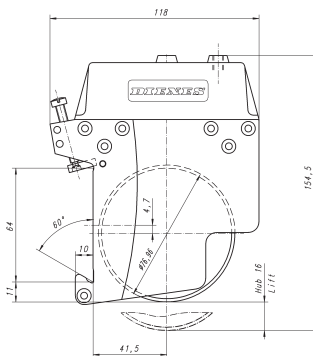
PQAS and PQDS – Our Universals

Years of successful usage, worldwide, for slit widths of 6-20 mm.

All crush cut knife holders available with hand protection!

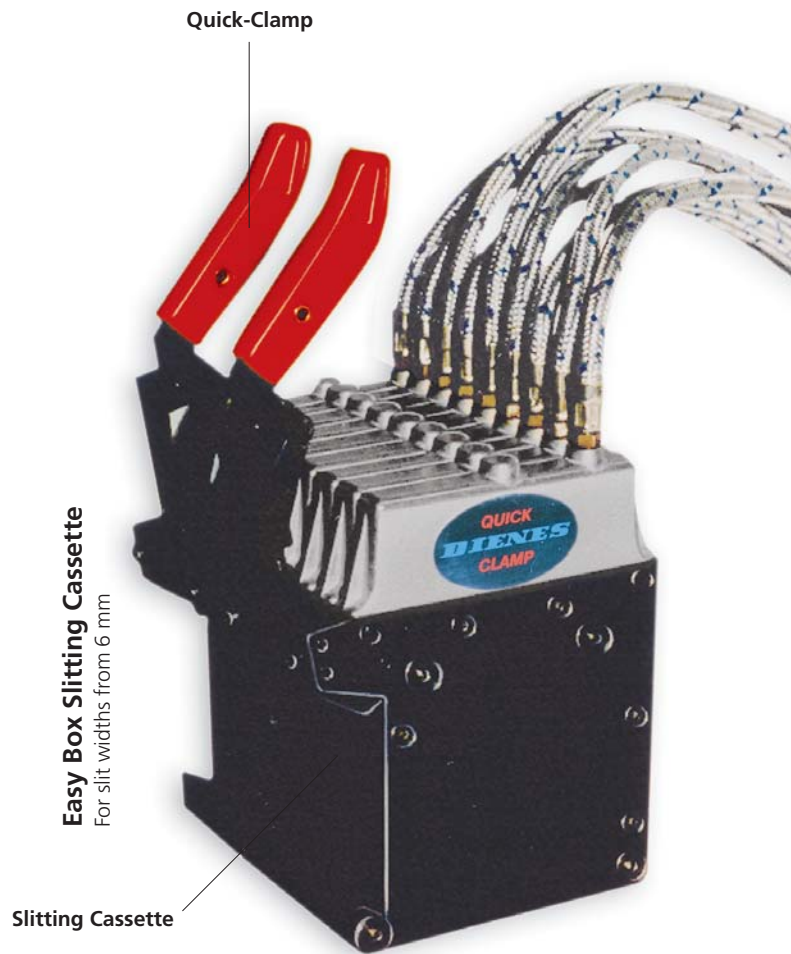
Advantages:

- High product quality
- Easy handling
- User convenience



PQAS available with the following holder widths: 6/9/9,52/12/12,67 mm

PQDS available with the following holder widths: 6/9/9,52/10/12/12,7/15/20 mm



Crush Cut Knife Holders

Easy Box/Quick-Clamp

Quick-Clamp (DGM 20211166)

Dienes' Quick-Clamp system is well proven for applications with frequent slit width adjustments. It is available as an option for the Dienes PQDS and PQAS crush cut knife holders.

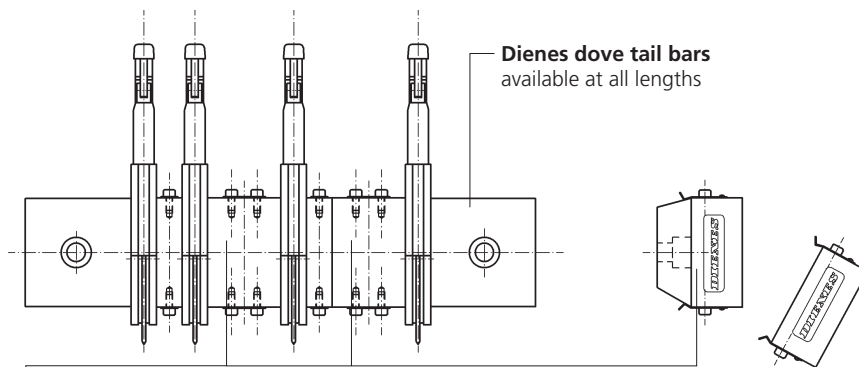
The Quick-Clamp system eliminates variances from set screw clamping.

Advantages:

- Rectangular clamping of the holders
- Minimum setup times
- Tool less repositioning of the crush cut knife holders
- For module application



Easy Box Mini Cut
slit width from 4 mm



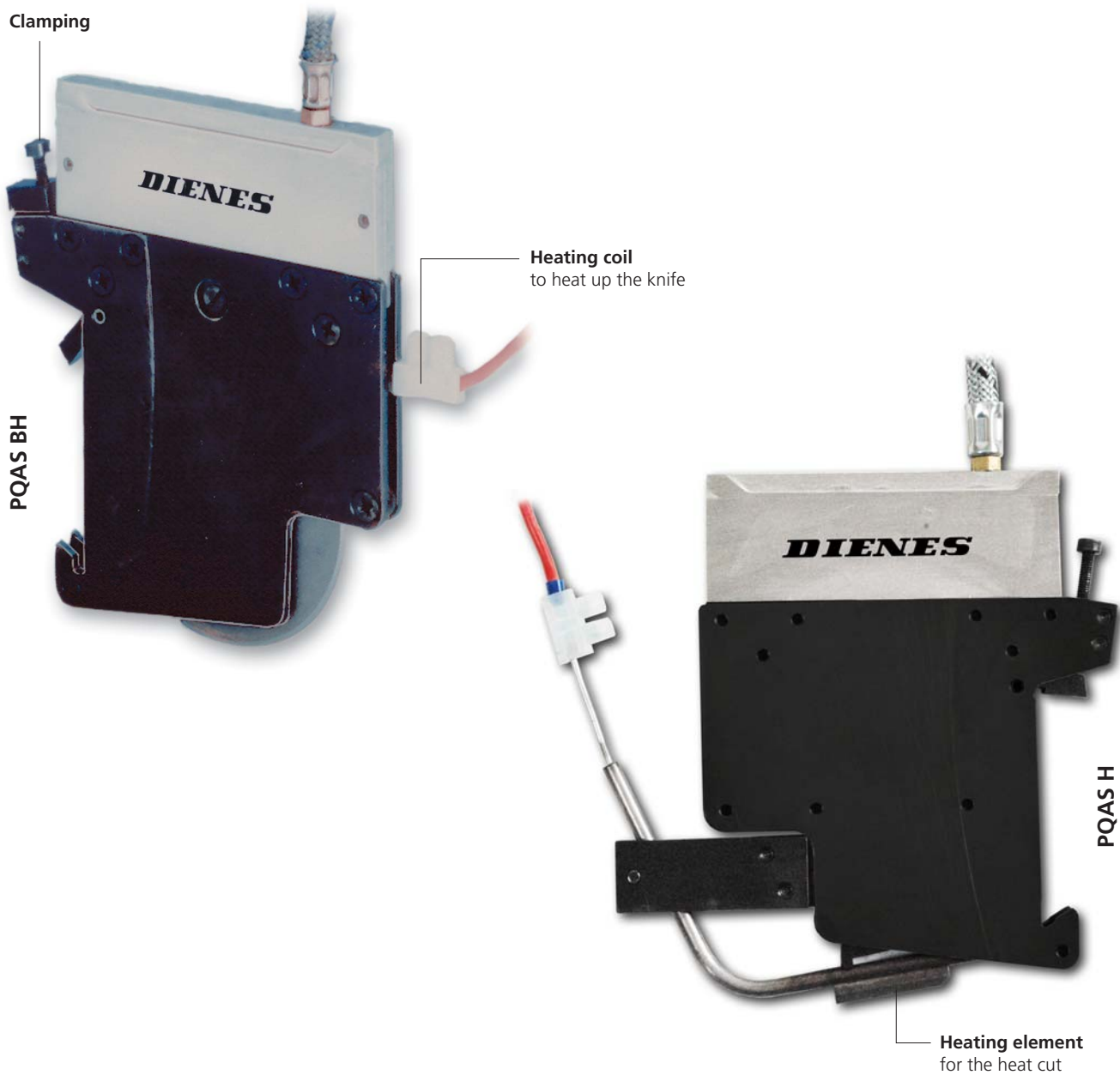
Dienes precision spacers
for exact slit width adjustment
available at all thicknesses

Dienes Mini Cut

The slitting block Mini Cut for the crush cut system is available in modular design. It consists of several exchangeable slitting cassettes. If you want to change the slit width you simply take another cassette having a different knife spacing.

Advantages:

- Optimized exactness due to pre-adjusted slitting widths
- Optimized equal and easy running of the knives,
i. e. constant web tension and reduction/elimination of web tear
- Ease of operation even with smallest slitting widths (4 mm)
- Low setup cost



Heat Cut Knife Holders

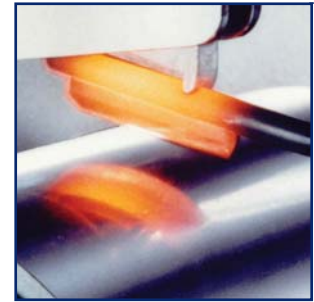
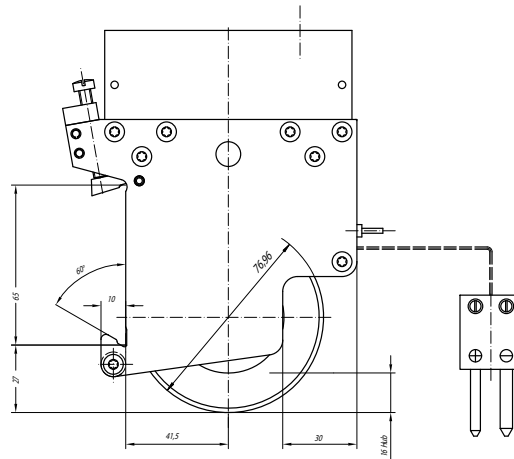
PQAS BH/PQAS H

PQAS BH – Our Heated

By heating the knives to approx. 70° C, it is possible to prevent adhesive sticking to the knife edge which could lead to customer rejected finished rolls.

Advantages:

- Clean cut
- prevent adhesive sticking to the knife



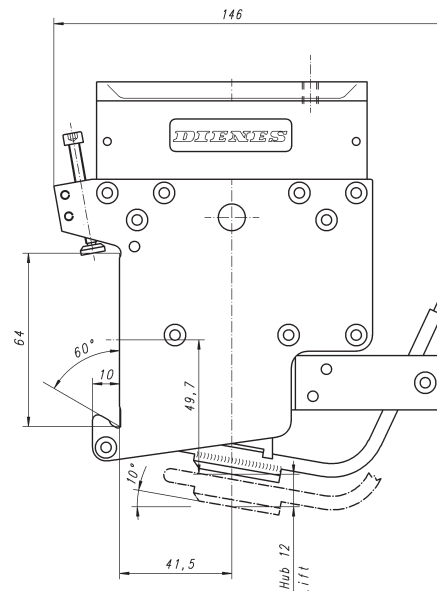
Heat cut in operation
slitting temperature 750°

PQAS H – Our Hottest

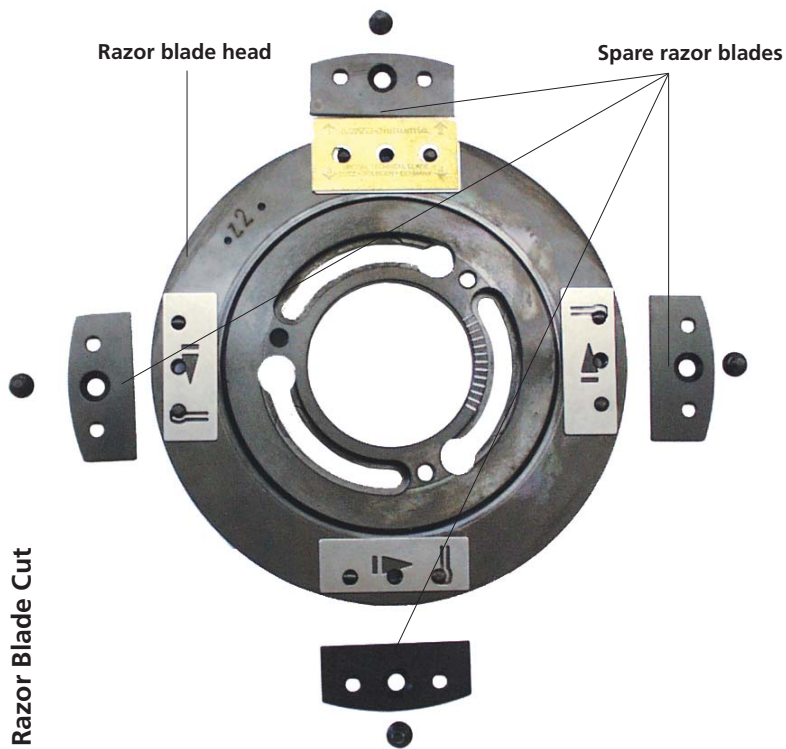
Due to the high temperature of 750° C, the material is separated and simultaneously the slitting edges are bonded. Preferred applications: Technical textiles

Advantages:

- Clean cutting edges
- Low-cost solution



An electronic thermo control is also available at Dienes. Infinitely variable temperature adjustment relative to material thickness and web speed.



Razor blade head with adjustable engagement angle, which lengthens blade life.



Razor Blade Holders

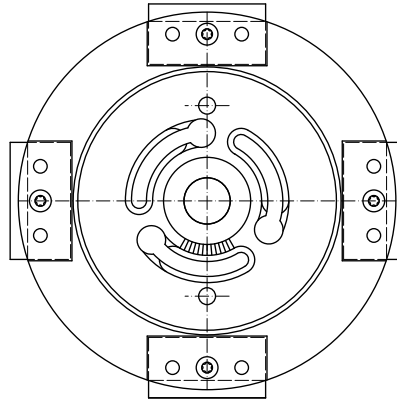
Razor Blade Cut/PQDS R

Razor Blade Cut

Shear cut knife heads can be exchanged for razor blade heads within seconds and thus they are applicable for the most varied material thicknesses. This applies for the following holders: PSGs 50, PSGs DF 50
 Preferred Application: Slitting of very thin synthetic and metal foils.

Advantages:

- Exchange of razor blades within seconds due to rotary magazine
- Low setup cost



Diamond Black Blade

Razor blade holders

Slit widths down to 3 mm can be readily achieved. For narrow slit widths our razor blade holders are also available in cassette design. Our approved crush cut knife holders PQAS/PQDS are available with razor blade adapter as an option.

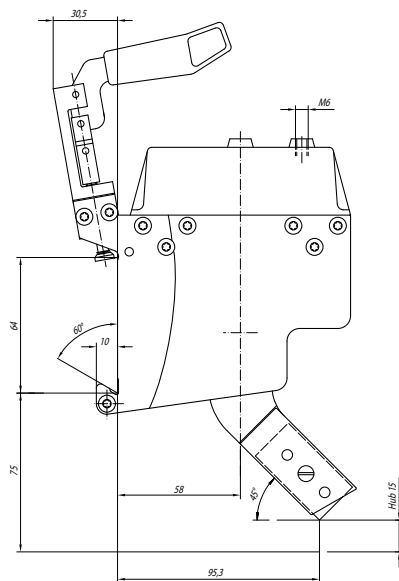
Available Razor Blades:

- Tungsten carbide
- Solid ceramic
- Ceramic coated (Diamond Black Blade)

Advantages:

- Quick change of slit widths
- Simple handling

Individual solutions for razor blade cutting upon request!



Application Recommendation	Shear Cut Knife Holders			
Material to be cut*	PSGm 19 DF	PSGm 25 DF	PSGs DF 50	PSG DF 145 PSG DF 150 High Speed
Aluminium < 500 µm	+	+	+	+
Aluminium > 500 µm	-	-	+	+
Two-layer Aluminium	-	-	+	+
Cable Bands < 300 µm	+	+	+	+
Lithography Bands > 500 µm	-	-	+	+
Synthetic foils < 500 µm	+	+	+	+
PVC, PE, PP 500 - 1500 µm	-	-	+	+
Paper < 200 g/m ²	+	+	+	+
Paper 200-500 g/m ²	+	+	+	+
Paper 500-800 g/m ²	-	-	+	+
Paper > 800 g/m ²	-	-	-	+
Adhesive Tapes / Labels	•	•	+	•
Beverage Packaging	-	-	+	+
Textiles	•	•	•	•
Rubber / vulcanized, unvulcanized	o	o	o	o
Nonwoven / Tissue, Hygiene Fleece, Glass Fleece	o	o	o	o

Legend: + suitable • conditionally suitable – unsuitable o Knife holder design has to be determined

* Summary of different materials. Consult us regarding your specific material challenges.

Shear Cut Knife Holders			Crush Cut Knife Holders			
PSGm 16	PSGs 50	PSG 1	PQA DF 50 PQA DF 19	PQG	PQAS PQDS	PQA MC PQD MC
+	•	•				
	•	•				
•	•	•				
	•	•				
•	•	+				
						+
+	+	+	•	•	•	•
	+	+				
		•				+
	•	•	+	+	+	+
	•	•				
•	•	•	+	+	+	+
o	o	o	o	o	o	o
o	o	o	o	o	o	o

mined by slitting tests at DIENES slitting laboratory.

	Shear Cut Knife Holder		
	PSGm 19 DF	PSGm 25 DF	PSGs DF 50
Dimensions, Weight			
total height *1	300 mm	335 mm	330 mm
total width *2	19 mm	25 mm	50 mm
total weight *3	2,4 kg	3,7 kg	6,1 kg
Working Data			
min. slit width	19 mm *4	25 mm *4	50 mm
vertical knife stroke	20 mm	30 mm	30 mm
non-adjustable stroke	10 mm	10 mm	10 mm
adjustable stroke	10 mm	20 mm	20 mm
horizontal knife stroke	2,5 mm	2,5 mm	2,5 mm
knife diameter	105/130 mm	130 mm	130/150/200 mm
Application Range *5 max.	1.000 m/min	1.000 m/min	2.000 m/min
operating pressure vertical	3-6 bar	4,5-6 bar	4-6 bar
operating pressure axial	3-6 bar	4,5-6 bar	max. 3,5 bar
shear angle	from 0° to 1° in steps of 1°		
knife head construction	right-hand or left-hand		
holder mounting	optionally dove tail guidance, linear guidance, T-groove		

*1 Total height without air connection

*2 width may vary depending on the options

*3 weight may vary depending on the options

*4 only with block by block operation

*5 depending on the material to be cut and knife diameter

You will find a sampling of the wide range of Dienes safety accessories and service tools on page 30.

Please inquire for special designs!

Series		Shear Cut Knife Holders		
PSG DF 145	PSG DF 150 HS	PSGm 16	PSGs 50	PSG 1
475 mm	496 mm	280 mm	305 mm	372 mm
144 mm	148 mm	16 mm	18,5 mm	113 mm
16 kg	21 kg	2,1 kg	4,6 kg	8.9 kg
145 mm	150 mm	16 mm	50 mm	115 mm
50 mm	50 mm	20 mm	20 mm	20 mm
10 mm	10 mm	10 mm	10 mm	10 mm
40 mm	40 mm	10 mm	10 mm	10 mm
6 mm	6 mm	1 mm	1,5-3 mm	3 mm
180/200/220 mm	200 mm	105 mm	130 mm	140/180 mm
2.600 m/min	3.500 m/min	800 m/min	1.000 m/min	1.300 m/min
4-6 bar	4-6 bar	5-6 bar	4-6 bar	4-6 bar
4-6 bar	1-6 bar	5-6 bar	max. 6 bar	max. 6 bar
		from 0° to 1° in steps of 15'		
		right-hand or left-hand		
		optionally dove tail guidance, linear guidance, T-groove bar or to customer specification		

Subject to technical changes!

	Crush Cut Knife Holders				
	PQAS/PQDS	PQD MC 3	PQA DF 19	PQA DF 50	PQG
Dimensions, Weight					
total height *1	150 mm	235 mm	290 mm	383 mm	315 mm
total width *2	6-20 mm	20 mm	19 mm *4	49,5 mm	115 mm
total weight *3	1,5 kg	2 kg	2,4 kg	8,4 kg	8,1 kg
Working Data					
min. slit width	ab 6 mm	20 mm	19 mm	50 mm	115 mm
vertical knife stroke	15 mm	15 mm	20 mm	30 mm	30 mm
non- adjustable stroke			10 mm	10 mm	
adjustable stroke			10 mm	20 mm	30 mm
horizontal knife stroke					
knife diameter	76,96/100 mm	76,96/100 mm	100 mm	130/150 mm	max. 150 mm
Application Range *5 max.	300/400 m/min	300/400 m/min	600 m/min	1.100 m/min	800 m/min
operating pressure vertical	max. 6 bar	max. 6 bar	max. 6 bar	max. 6 bar	max. 6 bar
max. cutting force at 6 bar	240 N/540 N	1.620 N	240 N	1.200 N	900 N
shear angle	30°/45°/60°				
holder mounting	optionally dove tail guidance, linear guidance, T-groove bar or to customer specification				

*1 Total height without air connection

*2 width may vary depending on the options

*3 weight may vary depending on the options

*4 only with block by block operation

*5 depending on the material to be cut and knife diameter

Subject to technical changes!

You will find a sampling of the wide range of Dienes safety accessories and service tools on page 30.

Cutting Force Chart for Crush Cut Knife Holders				
Holder Type	Cutting Force in Newton at an Air-Pressure of			Cutting Speed in m/min.
	4 bar	5 bar	6 bar	
PQAS				
6 mm	145	190	240	250
9 mm	145	190	240	300
9,52 mm	145	190	240	300
12 mm	200	265	330	300
12,67 mm	200	265	330	300
PQDS				
6 mm	145	190	240	250
9 mm	145	190	240	300
9,52 mm	145	190	240	300
10 mm	145	190	240	300
12 mm * ¹	200	265	330	300
12,67 mm * ¹	200	265	330	300
12,7 mm * ¹	200	265	330	300
15 mm * ¹	200	265	330	300
Heat Cut	145	190	240	250
Heated	145	190	240	250
PQG	500	700	900	800
PQD MC 2				
15 mm * ¹	650	860	1.080	300
PQD MC 3				
15 mm * ¹	975	1.290	1.620	300
PQD 15/20 *¹	325	430	540	300
PQA DF				
50 mm	800	1.000	1.200	1.100
19 mm	145	190	240	600

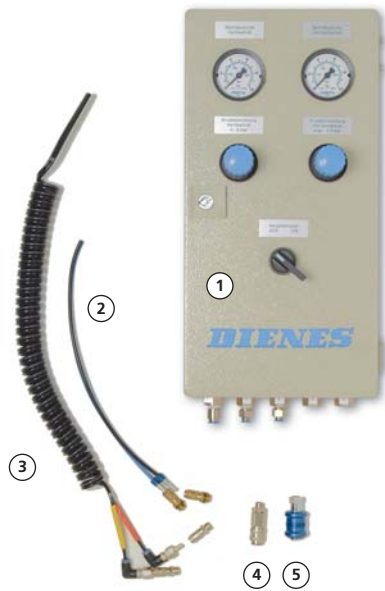
Subject to technical changes!

*¹ PQDS and PQD MC having a knife diameter of 100 mm, the maximum speed can be increased to 400 m/min (approx. value)

Safety Accessories and Service Tools

Pneumatic Control System / Accessories

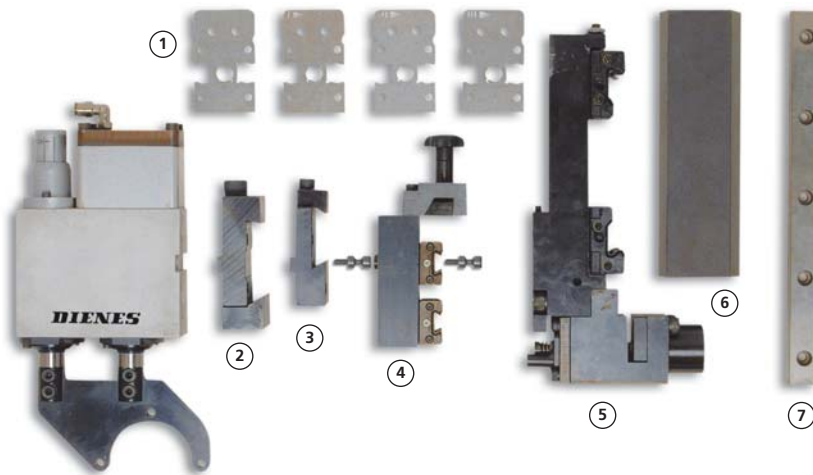
Pneumatic Control System



- ① Dienes pneumatic control for the compressed air supply
- ② DUO hose with plug coupling
- ③ DUO spiral hose with plug coupling
- ④ Stainless steel fittings
- ⑤ Dienes hand slide valve

Adapter alternatives

e.g.: for holder PSGs DF 50



- ① angle plate a 0' b 15' c 30' d 45'
- ② standard dove tail adapter
- ③ dove tail adapter: type Tidland
- ④ linear adapter for manual strip steel clamping
- ⑤ linear adapter for Dienes automatic positioning device (reception device with spring-energy memory)
- ⑥ dove tail bar
- ⑦ linear rails with integrated dust protection

Increased user convenience for all holders and dramatically reduced setup times due to linear rail guidance!



Dienes Services

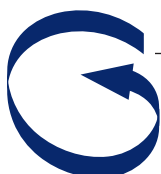
Even the best knives must eventually be replaced. Dienes has made this operation faster and safer by its well-designed replacement system, with optimal protection from injuries.

The **Regrinding Service**, which operates the newest generation of CNC machines, is performed under the same strict quality criteria that you expect from the Dienes Group. In addition to seminars and in-house training sessions the regrinding service is an important component among the various services provided by Dienes.

Knife Management Support is not only provided through new recording, controlling and ordering systems but also through well-designed knife storage cabinets and transportation boxes.

Kaizen Analysis provides comparison data for Dienes evaluation. Tests made with special knife holders will lead to measurably improved slitting quality, handling, service life and operation safety.

Dienes B2B- Knife Management System	Dienes Kaizen Analysis	Dienes Regrinding Service
Inventory and status control	Planned/actual comparisons	Hotline (optional)
OPTI-Tool toll calculation	Cutting Force	Pick-up
Optimised knife requirements	Knife Overlap	Cleaning
Internet Knife Display	Surface Quality	Precision Measurement
Electronic Key System	Regrinding Quality	Group Classification
Installation Logistics	Web Entrance/Cant Angle	2-phase-CNC/NC precision grinding
Just-in-time replacement	Knife Head Torsional Display/ Knife Head Bearing Play	(ADS) Anti-Dust Surface (optional)
Paperless transactions	Analysis of Cutting Edge	Inspection
Cost Control	Evaluation	Specifications, Test Reports (optional)
Cost Reduction	Trouble Shooting	Shipping



Regrinding Service

On request 48-h-Service

For information please contact us:

www.messerservice.de | +49 22 06 / 605 - 0

Please place your order with us or ask for your individual quotation.



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For more information contact:
EURO SERVICE APS
Højmarken 18 - 5492 Vissenbjerg
Tel. +45 6313 0707
E-mail es@euro-service.dk
www.euro-service.dk

Dienes Werke Germany