



h+s expertise and service

Do you need quality? We'll give it to you quickly and reliably. The extensive h+s range is the result of practical industry experience and is adapted to the needs of our customers from a wide range of industries.

We will be happy to offer assistance in every question regarding material and quality. In addition to a fast delivery of large and small order quantities, as well as special dimensions and qualities, we can also manufacture laser cuts of any size.

Extensive range of precision gauge strips and precision foils

Materials 1.1274 and 1.4310 as well as brass with narrow thickness tolerances are manufactured in accordance with T3 for precision gauge strips and precision foils. (1.4310 partially in accordance with EN 9445).

In material 1.4310 in particular, over 60 different thicknesses ranging from 0.003 to 3.0 mm are available, even in a whole host of intermediate thicknesses.

Materials 1.2003 and 1.4034 are also available in thicknesses over 1.0 mm.

Flat grinding means that we can also provide laser parts in your required thickness, ranging from 1.0 to around 10.0 mm (in materials 1.2003, 1.2379 and 1.4034).

Wide choice of materials for many different applications

At h+s, we now stock 16 different materials that cover a wide range of applications:

Materials 1.1274, 1.4031Mo, 1.4310, 1.4404 hard, brass, bronze for springs

Hardened steels 1.2003, 1.4034 and 1.2379 for knives and tools

1.4767 and 1.4828 for heat-resistant parts

Pure nickel and 1.4404 for corrosive environments

Copper, bronze and aluminium for parts with high conductivity
1.0338 (DC04) for simple shim parts

Most materials are also available in a width of up to approx. 300 mm.

Fast and flexible delivery for small quantities

All dimensions listed in the catalogue are available at short notice.

The minimum quantity is one packaging unit or, for raw strips in widths over 200 mm, only 1 item or 1 metre.

Even larger quantities can be delivered at short notice from our extensive inventory.

Small orders for standard products in a width up to 150mm and sheets in size 300-305x1000mm and 600-610x1000mm received before around 11:00 a.m. can even be dispatched on the same day.

At h+s, there is no minimum order value.





Quality assurance

Compliance with tolerances is monitored on an ongoing basis during production. Thickness is continuously measured during strip labelling.

Information on the product and the product batch can be found on the h+s label. This means that the material can be traced right back to the smelting plant. What's more, most strips and formats are also labelled with the thickness and production batch.

Custom special widths

Strips and formats can also be supplied in the width that you require up to 300 mm (some up to 600 mm) in materials 1.1274, 1.4310 and 2.0321 (other materials also available on request).

... and should you need something out of the ordinary, we'll be happy to help!

Just let us know what you need. Manufacturing custom products means that we continuously stock new qualities and special dimensions that are available at short notice.

Laser-cut parts from precision gauge strip

We cut for you according to your drawings or CAD files. Thanks to flexible production plants, even the smallest batch quantity can be supplied quickly, reliably and cost-effectively.

Laser parts can also be flat-ground to your required thickness and laser-marked (see page 15).

Affordable in comparison Compare!

Top-quality, ultra-precise h+s precision foils are significantly better value for money than comparable competitor products.

For larger quantities in a dimension, please request the availability and our current price.





Hardened carbon steels

Net prices in euros/package unit or metre or item (excl. VAT).

STRIPS/COILWARE

Quant.:	PU=1m	PU=2m	PU=5m	PU=10m	PU=5m	PU=5m	PU=5m	per m
Width/format in mm:	12,7	12,7	12,7	12,7	6	25	50	300-305
Thickness:	C-Steel 1.1274	C-Steel 1.1274	C-Steel 1.1274	C-Steel 1.1274	C-Steel 1.1274	C-Steel 1.1274	C-Steel 1.1274	C-Steel 1.1274
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FORMATS/SHEET PRODUCTS

PU=x10	PU=x10	PU=x1	PU=x1	PU=x1
25 x 300	50 x 300	300-305 x 1000	350 x 1000	610 x 1220
C-Steel 1.1274	C-Steel 1.1274	C-Steel 1.1274	C-Steel 1.2003	C-Steel 1.2003

- (1) = differing width 100-150 mm
- (2) = differing width 200-205 mm
- (3) = Upon request also available in width 305 mm
- (4) = available only in length 1000 mm
- (5) = available only in the alloy 1.4310 (AISI 301)
- (6) = also available in length 2000 mm
- (o) = u. request





STAINLESS SPRING STEEL STRIP 1.4310

STRIPS/COILWARE Net prices in euros/package unit or metre or item (excl. VAT).

Quant.:	PU=5m	PU=5m	PU=5m	PU=5m	PU=5m	PU=5m	per m	per m	per m	per m	per m	per m	per m
Width mm:	10	12,7	25	50	100	150	300-310	300-310	300-310	300-310	600-625	600-625	600-625
Thickness:	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel
	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310
							F11-1300	F13-1500	F15-1700	F>1850	F11-1300	F13-1500	F15-1700
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- (1) = differing width 100-150 mm
- (2) = differing width 200-205 mm
- (3) = Upon request also available in width 305 mm
- (4) = available only in length 1000 mm
- (5) = available only in the alloy 1.4310 (AISI 301)
- (6) = also available in length 2000 mm
- (7) = as long as supplies last
- (o) = u. request



FORMATS/SHEET PRODUCTS

Net prices in euros/packaging unit or metre or item (excl. VAT).

	10 pc.	10 pc.	5 pc.	5 pc.	1 pc.	1 pc.	1 pc.	1 pc.	1 pc.	1 pc.	1 pc.
Format in mm:	25 x 300	50 x 300	100 x 500	150 x 500	300-310x1000	300-310x1000	300-310x1000	300-310x1000	ca. 600x1000	ca. 620x1000	ca. 610x1000
	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel	CrNi-Steel
	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310
					F11-1300	F13-1500	F15-1700	F>1850	F11-1300	F13-1500	F15-1700
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SPECIAL STEELS

Net prices in euros/package unit or metre or item (excl. VAT).

Quant.:	PU=5m	5 Pieces	per m	PU=x1	per m	PU=x1	PU=x1	per m	per m	per m	per m
Width/format in mm:	150	150 x 500	300 - 305	ca. 300 x 1000	ca. 250 - 300	360 x 1000	360 x 2000	ca. 300	ca. 300	ca. 300	ca. 300
Thickness:	Unalloyed steel +C590 1.0338	Unalloyed steel +C590 1.0338	Unalloyed steel +C590 1.0338	C steel soft 1.1248	CrMo steel 1.4031Mo	CrMo steel 1.4034	C-steel 1.4034	CrNiMo steel 1.4404 soft	CrNiMo steel 1.4404 hard	Heat resistant 1.4767 hard	Heat resistant 1.4828 soft
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ARMOUR PLATES

As an addition to our product range, we also stock hot-rolled plates – which have been hardened to HRC 50–55 using a special heating process – in material steel 1.4034 in thicknesses of 4.25–10.5 mm.

For very wear-resistant parts, we now also stock hot-rolled plates in material 1.2379 in thicknesses of 2.20–5.50 mm with a hardness of HRC 59–61.

We can use these plates to manufacture your laser-cut parts according to your drawings.

These cut parts need to be flat-ground due to the poor thickness tolerance resulting from hot-rolling and the scaled surface of the material.



NON-FERROUS METALS

Net prices in euros/package unit or metre or item (excl. VAT).

Quant.:	PU=5m	PU=x5	per m	PU=5m	PU=x5	per m	PU=5m	PU=x5	per m	PU=5m	PU=x5	per m	PU=5m	PU=x5
Width/format in mm:	150	150 x 500	300 - 305	150	150 x 500	300 - 305	150	150 x 500	300 - 305	150	150 x 500	300 - 305	150	150 x 500
Thickness:	Copper SE-Cu58 2.0070	Copper SE-Cu58 2.0070	Copper SE-Cu58 2.0070	Brass CuZn37 2.0321	Brass CuZn37 2.0321	Brass CuZn37 2.0321	Bronze CuSn6 2.1020	Bronze CuSn6 2.1020	Bronze CuSn6 2.1020	Nickel 99,2% 2.4068	Nickel 99,2% 2.4068	Nickel 99,2% 2.4068	Aluminium 3.0205	Aluminium 3.0205
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ASSORTMENTS

Item	Size in mm	Sheets	Contents: 1 Sheet	Euro
Assortment 25 - 1.1274	25 x 300	21	0,01/0,02/0,03/0,04/0,05/0,06/0,07/0,08/0,09/0,10/0,15/0,20/0,25/0,30/0,40/ 0,50/0,60/0,70/0,80/0,90/1,00 mm	18,60
Assortment 50/1 - 1.1274	50 x 300	25	0,01/0,02/0,03/0,04/0,05/0,06/0,07/0,08/0,09/0,10/0,12/0,15/0,18/0,20/0,25/ 0,30/0,35/0,40/0,45/0,50/0,60/0,70/0,80/0,90/1,00 mm	32,20
Assortment 50/2 - 1.1274	50 x 300	23	like 50/1 without 0,01/0,02 mm	26,70
Assortment 50/3 - 1.1274	50 x 300	11	0,02/0,03/0,05/0,10/0,15/0,20/0,25/0,30/0,40/ 0,50/1,00 mm	13,20
Assortment 100/1 - 1.4310	100 x 500	9	0,02/0,05/0,10/0,15/0,20/0,30/0,40/0,50/ 1,00 mm	38,50
Assortment 100/2 - 1.4310	100 x 500	11	0,02/0,05/0,10/0,15/0,20/0,25/0,30/0,35/0,40/ 0,45/0,50 mm	39,00
Assortment 100/3 - 1.4310	100 x 500	11	0,50/0,55/0,60/0,65/0,70/0,75/0,80/0,85/0,90/ 0,95/1,00 mm	88,20
Assortment 150 - 1.4310	150 x 500	10	0,025/0,05/0,075/0,10/0,15/0,20/0,25/0,30/0,40/0,50 mm	55,40
Assortment 150 Brass	150 x 500	10	0,025/0,05/0,075/0,10/0,15/0,20/0,25/0,30/0,40/0,50 mm	65,00

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- (3) = Upon request also available in width 305 mm
- (4) = available only in length 1000 mm
- (5) = available only in the alloy 1.4310 (AISI 301)
- (6) = also available in length 2000 mm
- (7) = As long as supplies last
- (o) = Upon request



MATERIAL INFORMATION

Material		Unalloyed steel	C steel soft	C steel	C steel	Tool steel	CrMo steel	Cr- steel
Material number		1.0338	1.1248	1.1274	1.2003	1.2379	1.4031Mo	1.4034 (1.2083)
Designation	DIN/EN AISI UNS	DC04 1008 A 620	C75S LC+MA 1075 G 10750	C100S+QT 1095 G 10950	75Cr1+QT 1075 G 10780	X155CrV Mo12-1 D2	X39CrMo14-1 Etna 420	X46Cr13 420 S 42000
Dimensions	Widths Thicknesses Width tolerance Thickness tolerance	150+305 0.025-1.00mm DIN EN 10 140	300-305 mm 0.20-3.00mm	6 - 305 mm 0.01-2.00 mm B 2 T 3	350 + 610 mm 1.00 – 5.03 mm - T 3	ca. 630x1000mm 2.3-5.5 mm -0/+0.5mm	70-310 0.076-0.80 EN 9445 T1-T3	320 mm 1.00 - 3.00 mm EN 10258 R T 3
Surface		Bright	Bright	White-polished	Bright	Scaled	White-polished	Ground
Edge form		Cut	Cut	Cut (in a width of 12.7 mm. rounded from a thickness of 0.25 mm)	Cut	Rolled edge	Cut	Cut
Straightness		Normal		Normal	Normal		Normal	Normal
Evenness		Normal		Extra precise	Extra precise	0.2% of the strip width	P2/P3	Extra precise
Rolled condition		Hard-rolled	Hard-rolled	Hardened and tempered (H+T)	Hardened and tempered (H+T)	Hardened and tempered (H+T)	Hardened and tempered (H+T)	Hardened and tempered (H+T)
Tensile strength/ hardness		>590 N/mm ²	490-650 N/mm ²	See tensile strengths table	HRC 48-50	HRC 59-61	1700-1950 N/ mm ²	HRC 50-54
Material – composition	C:	max.0.08%	max. 0.65-0.80%	max. 1.05%	0.70-0.80%	1.50-1.60%	Approx. 0.39%	0.40 - 0.50%
	Si:		0.15-0.30%	0.15-0.30%	0.25-0.50%	0.35-0.40%	max. 0.40%	0.30%
	Mn:	max. 0.4%	0.30-0.45%	0.30-0.45%	0.60-0.80%	0.30-0.60%	Approx. 0.60%	0.35%
	P:	max. 0.03%	max. 0.02%	max. 0.02%	max. 0.03 %	max. 0.03%	max. 0.025%	max. 0.045%
	S:	max. 0.03%	max. 0.02%	max. 0.02%	max. 0.03%	max 0.02%	max. 0.01%	max. 0.03%
	Cr:		max. 0.40%	max. 0.40%	0.30-0.40%	11-12%	Approx. 13.5%	13.5 %
	Ni:						-	-
	Mo:					0.7-0.9%	ca. 1%	-
	Al:							-
	Cu:							-
	Pb:							-
	Sn:							-
	Zn:							-
	Fe:	Rest	Rest	Rest	Rest		Rest	Rest
	N:							
	Other:					V: 0.7-0.9%		-

Unalloyed, hard-rolled steel, mat. no. 1.0338 (DC04)

Unalloyed steels are very cost-effective materials for simple parts that don't need to be corrosion-resistant and are not subjected to mechanical strains. With a tensile strength of at least 590 N/mm² (+C590), the products stocked at h+s are easy to blank but can only be dished or deep-drawn to a limited extent. Due to thickness tolerances according to EN 10 140, this material is only suitable for shim parts that do not have high precision requirements.

Unhardened, hardenable spring steel strip, mat. no. 1.1248

With a carbon content of 0.75%, material 1.1248 is frequently used as an alloy for springs. In an unhardened state, this steel is very easy to stamp and form; however, it must then be hardened to achieve a high tensile strength and hardness.

Hardened spring steel strip, mat. no. 1.1274

With a carbon content of over 1%, this material is very well suited for feeler gauge strips and precision foils as well as highly stressed springs that are not subject to any corrosion requirements. In particularly high-quality designs, as the only carbon steel, 1.1274 is suitable for shock absorbers and flapper valves.

Hardened tool steel, mat. no. 1.2003

The addition of a small amount of chromium gives this material high wear-resistance and a better through-hardening in large cross-sections. With a Rockwell hardness of 47–51 HRC, this material is also suitable for smaller tools.

Hardened, rust-resistant special spring steel strip 1.4031 (AISI 420)

As a result of the alloying with 13% chrome and 1% molybdenum, this alloy is corrosion-resistant against damp air, water vapour and water, but is not

sufficiently resistant to chloride ions and acids. The advantages of this steel lie in its good wear-resistance and minimum internal tensions. With a tensile strength of 1700–1950 N/mm², this material is ideal for springs, gauges, tools and knives. In a particularly high-quality design, this material is also suitable for flapper valves.

Hardened, stainless tool steel, mat. no. 1.4034 (1.2083)

As a result of the alloying with 13% chromium, this martensitic chrome steel is corrosion-resistant against damp air, water vapour and water, but is not sufficiently resistant to chloride ions and acids. This material has a lower corrosion-resistance compared to 1.4310. The advantages of this steel lie in its good wear-resistance and minimum internal tensions. With a Rockwell hardness of 50–54 HRC, this material is ideal for gauges, tools and machine cutting tools in the food industry and scalpels. Materials 1.4034 and 1.2083 are only marginally different in terms of carbon content.

Cold-rolled, stainless spring steel strip, mat. no. 1.4310

As a result of the alloying with 17% chrome and 7% nickel, this material is particularly corrosion-resistant. Cold-rolling gives this material a high tensile strength. It has a significantly higher strength than 1.4301. As a result, material 1.4310 is very well suited for stainless-steel precision gauge strips and precision foils. This material is only weakly magnetic and therefore cannot be held in place on magnetic clamping plates during grinding.

When chamfering or bending material 1.4310, please be aware that folds should always run transversely to the roll direction. The roll direction must also be observed when using the material as a flat spring.



CrNi steel	CrNiMo steel	Heat-resist. Steel	Heat-resist. Steel	Copper	Brass	Bronze	Nickel	Al alloy	Aluminium
1.4310	1.4404	1.4767	1.4828	2.0070	2.0321	2.1020	2.4068		3.0502
X12CrNi17-7 301 S 30100	X2CrNiMo17-12-2 316L S 31603	X8CrAl20-5	X15CrNiSi20-12 309 S 30900	SE-Cu58/W021A C 10300	CuZn 37 C 27200	CuSn6/CW452K C 51900	LC-Ni 99.2% N 02201	EN-AW 8079	EN-AW 1200 A91200
10 - 1000 mm 0.003 - 3.00 mm EN 10258 R T 3 (some EN 10258)	Approx. 300 mm 0.05 - 0.50 EN 10258 R EN 10258 (some T3)	Approx. 300 mm 0.03 – 0.20 mm EN 10 258	Approx. 300 mm 0.15 – 0.30 mm EN 10 258	150 + 305 mm 0.01 – 0.50 mm +/- 10%	150 + 305 mm 0.01 - 1.00 mm DIN 1791 T 3	150 + 305 mm 0.05 – 0.30 mm	150 + 320 mm 0.01 – 0.30 mm	150 mm 0.025 mm	150 mm 0.05 – 0.20 mm
2H	2R/2H	Bright	Bright	Bright	Bright	Bright	Bright	Bright	Bright
Cut	Cut	Cut	Cut	Cut	Cut	Cut	Cut	Cut	Cut
SR	Normal				DIN 1791				
Wave height. max. 1 mm	DIN				DIN 1791				
Cold-rolled – spring-tempered	Cold-rolled. an- nealed or spring- tempered	Hard-rolled	Annealed	Hard-rolled	Spring-tempered	Spring-tempered	Hard or semi- hard	Hard-rolled	Hard-rolled
See tensile strengths table	540-750 N/mm ² (Annealed) >1100 N/mm ² (Hard)	Approx. 1000 N/ mm ²	540 – 750 N/mm ²	>360 N/mm ²	See tensile strengths table	HV 160-190	Approx. 500- 1000 N/mm ²	>180 N/mm ²	> 150 N/mm ²
max. 0.15%	max. 0.03%	max. 0.05%	max. 0.20%				max. 0.02%		
max. 1.5%	max. 1.0%	max. 0.50%	1.5-2.5%		-		max. 0.1%	0.05-0.3%	Si+Fe max. 1%
max. 2.0%	max. 2.0%		max. 2.0%				max. 0.3%		max. 0.05%
max. 0.045%	max. 0.045%			0.002-0.007%		0.01-0.4%			
max. 0.03%	max. 0.03%						max. 0.005%		
16-18%	16.50-18.50%	19.0 – 22.0 %	19.0-21.0%						
7-9%	10.0-13.0%	max. 0.30%	11.0-13.0%			max. 0.2%	> 99.2%		
max. 0.80%	2.0-2.5%								
		5.50-6.50%						Rest	>99.0%
				>99.95%	62-64%	Rest	max. 0.25%	max. 0.05%	max. 0.05%
				max. 0.005%	max. 0.1%	max. 0.02%			
						5.5-7.0%			
					Rest	max. 0.2%		max.0.1%	max. 0.1%
Rest	Rest	Rest	Rest			max. 0.1%	max. 0.4%	0.7-1.3%	Si+Fe max. 1%
		max. 0.01%							
		Traces of Zr+Y+Hf		max. 0.03%		max. 0.2%	Ti: 0.01-0.1%	max. 0.15%	max. 0.15%

Stainless precision steel strip 1.4404

Due to its higher content of nickel and molybdenum, this material is significantly more resistant to corrosion than 1.4301 or 1.4310. In an annealed state, this material has very good deep-drawing properties due to the high nickel content. In a hard-rolled state, this material can be used for springs in corrosive environments. Similarly to 1.4310, 1.4404 becomes slightly magnetisable as a result of hard-rolling; however, due to its higher nickel content, its magnetism is less than in 1.4310.

Heat-resistant ferritic chrome steel, mat. no. 1.4767

By adding approximately 6% aluminium and traces of yttrium and hafnium, this ferritic steel is incredibly heat-resistant up to 1200°C.

We stock this material in a hard-rolled state but it becomes soft during the first heating. This alloy is used for heating conductors in hobs, sensors and in flue gas cleaning. Ferritic steels can be magnetised.

Heat-resistant austenitic steel, mat. no. 1.4828

This material is heat-resistant to 1000°C as a result of its high chromium, nickel and silicon content. We stock this material in an annealed state.

Hard-rolled copper strip, mat. no. 2.0070 (SE-Cu58)

With a copper content of at least 99.95% and low oxygen and phosphorous content, the SE-Cu58 alloy is better quality than the generally used copper types, E-Cu (UNS C11000) and SF-Cu (UNS C12200).

This material is used in general electrical engineering for cable straps and connectors, transformer coils, semiconductors and sheet metal parts (e.g. for seals).

Hard-rolled brass strip, mat. no. 2.0321

Composed of 63% copper and 37% zinc, this material is the standard product for spring-tempered, rolled brass. This material is not magnetic. Observe the roll direction when using the brass as a flat spring or when chamfering or bending brass.

Hard-rolled bronze strip, mat. no. 2.1020 (CuSn6)

With zinc content of 6%, the bronze alloy CuSn6 is the most frequently used type of bronze. Examples of typical applications are connectors, contact pins and general sheet metal parts and springs that require good electrical conductivity. Unlike brass, bronze can also be used in vacuum technology.

Pure nickel, mat. no. 2.4068 (Ni 99.2)

Pure nickel is very corrosion-resistant in alkaline media in particular, even at temperatures above 300°C. It is used in the chemical apparatus construction and pharmaceuticals industries.

As nickel is resistant to chemical substances, the absolute purity of the product being processed is ensured. In thicknesses from 0.01 to 0.05 mm, nickel is available in a hard-rolled state; in thicknesses from 0.10 to 0.30 mm, it is available in a semi-hard state

Aluminium alloy EN-AW 8079

Due to its low specific weight and good formability, aluminium can be used for a wide range of applications. EN-AW 8079 contains iron and silicon, giving it a higher tensile strength. This alloy is therefore used for aluminium foils of a thickness of up to around 0.05 mm.

Pure aluminium, mat. no. 3.0502 (Al 99.0%)

Due to its relatively good thermal conductivity, pure aluminium is also used for heat exchangers (however, alloys 3003 or 6063 should be used in soldered heat exchangers).

As a result of its high electrical conductivity, aluminium can also be used in the electronics industry and, thanks to its high reflective properties, in lamp reflectors too.



OUR MACHINERY FOR PRECISION THAT'S ALWAYS A CUT ABOVE THE REST

SLITTING

Our precision gauge strips can be specially cut to the width that you require.

Carbon steels and brass can be delivered in a required width of up to 300 mm.

Stainless steel strips are generally available up to a width of 300 mm. Strips can be produced in any width up to 600 mm and in thicknesses up to 1.00 mm in material 1.4310 upon request.

Deburred and rounded edges are available at an additional charge. Depending on the availability, the minimum length is around 50 metres; for thicknesses above 0.80 mm, shorter lengths are also available.

The strips can then be provided with self-adhesive strip or cut to length.

On request, strips can also be packaged in plastic or tin boxes.



CUTTING TO LENGTH

For thicknesses ranging from 0.05 to 1.0 mm, strip material up to a width of 305 mm can be cut to any required length with narrow length tolerance using an electronic roller feed and cutting shear. For thicknesses ranging from 0.40 to 1.00 mm, parts can also be levelled using a precision levelling machine. For thicknesses ranging from 1.1 to 3.0 mm, formats of a width of up to 400 mm can be cut to length.



EDGE PROCESSING

By processing edges at an extra charge with carbide tools, deburred or rounded edges can be produced in materials 1.1274 and 1.4310 in thicknesses from 0.20 to 2.0 mm and widths from 6 to 150 mm.

For technical reasons, a minimum length of 100–200 metres is required.

ATTACHING THE SELF-ADHESIVE STRIP

Self-adhesive strips of any required width up to around 150 mm can be applied to stainless-steel or brass precision gauge strips. Various adhesive strip qualities are available depending on the operational environment.

Depending on the adhesive strip recommended, the minimum length for this is around 50 or 100 metres.

The strips can then be cut to the desired length.





LASER CUTTING

Thanks to flexible production plants, even the smallest batch quantity can be cut quickly, reliably and cost-effectively:

- YAG laser machines can manufacture delicate parts in thicknesses ranging from 0.01 to 2.00 mm with a tolerance of ± 0.05 mm.
- From a thickness of 0.50 mm, parts can also be cut using CO₂ lasers at a tolerance of ± 0.10 mm.

Thanks to our extensive stock of various spring steel strips, sample parts, for example, can also be manufactured in different materials or strengths for trials. Our large supply of coil materials means that we can also manufacture very long parts with a length of up to approx. 6000 mm.

Molybdenum and titanium are also available in custom thicknesses for laser-cut parts.



LASER MARKING

Laser-cut parts can also be permanently marked with their part number or thickness.

Compared to embossing, engraving or etching procedures, laser marking provides marking quality even at the smallest batch size from 1 item.

FLAT GRINDING

Up to a size of 300 x 600 mm, drawing parts can be ground to custom thicknesses or narrow tolerances of up to ± 0.01 mm (larger formats on request). To avoid high grinding costs, many material thicknesses are available in tool steel 1.2003 and stainless knife steel 1.4034.

Material 1.4310 cannot be processed due to its low magnetisability.

As a supplement/addition to our strip-hardened material, washers made from piece-hardened sheets can be manufactured from the material 1.4034 in thicknesses ranging from 3 to approx. 10 mm. These parts need to be ground to the exact thickness due to technical reasons.





EXAMPLE APPLICATIONS

Thanks to the high tensile strength of our spring steel strips, laser cutting is the ideal procedure for manufacturing precise parts. Even the smallest batch volumes can be manufactured quickly, reliably and cost-effectively, for example:



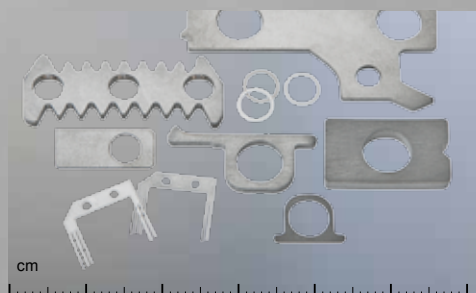
- Feeler gauges and adjustment gauges according to customer specifications in different thicknesses



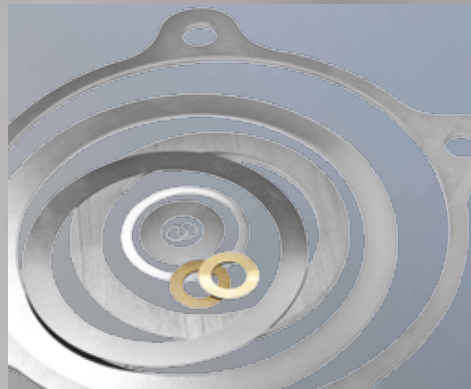
- Shim foils for adjusting tool heads to within a micrometre range of 0.01 to 0.075 mm



- Shim parts from 0.10 to 0.30 mm for assembling machine tools



- Laser-cut parts of all sizes can be manufactured to precision within a hundredth of a millimetre



- Shim rings according to DIN 988 in many intermediate thicknesses and individual diameters



- Washers up to a diameter of 600 mm made of spring steel strip
- Flat springs, brackets, machine parts with higher tensile strength or abrasion strength
- Sets of shim parts for tool making with thicknesses from 0.10 to 2.0 mm



h+s precision foils are available as a primary material from a thickness of 0.01 mm.

In material 1.4310, parts of a thickness between 0.05 mm and 1.0 mm are also available in a width of up to 600 mm; parts between 0.10 mm and 0.5 mm are even available with a width of up to around 1000 mm.

As an affordable alternative, parts from a thickness of 0.03 mm can also be cut from hardened steel 1.1274 (C100S); parts from 1.0 to 5.0 mm can be cut from hardened tool steel 1.2003 (75Cr1).

When there are high requirements on evenness and hardness, stainless, hardened steels 1.4031Mo and 1.4034 are available in thicknesses of 0.075 to 3.00 mm. At thicknesses between 3.0 and approx. 10 mm, laser parts can be cut from hardened sheets in materials 1.2379 and 1.4034 and then ground to the thickness.