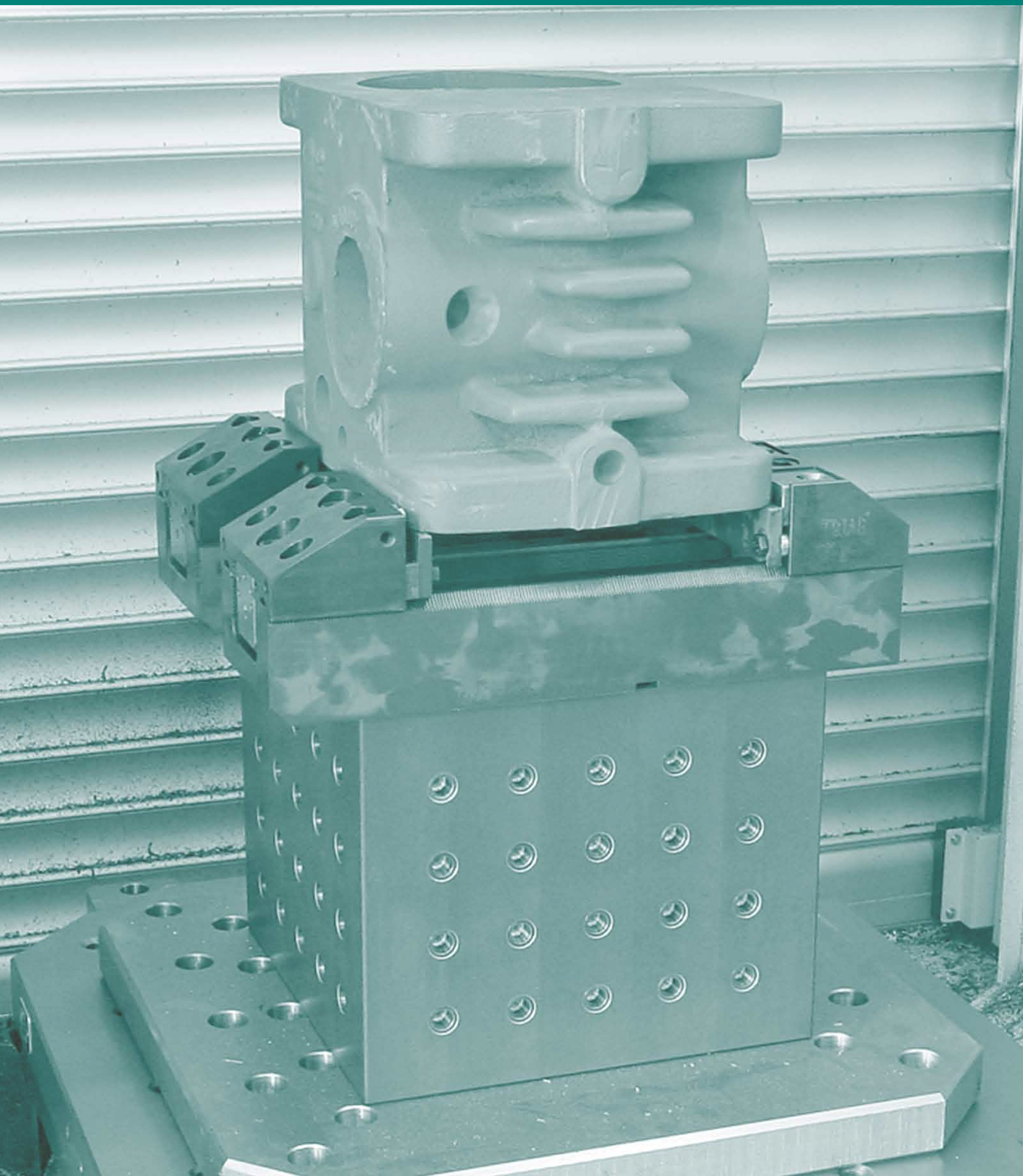
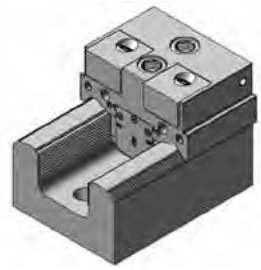
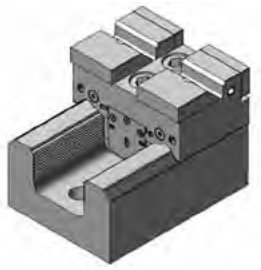
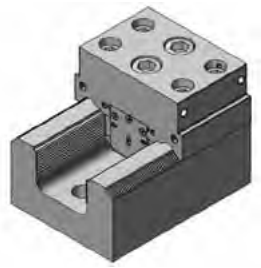
*apto*CLAMP & *5axes*

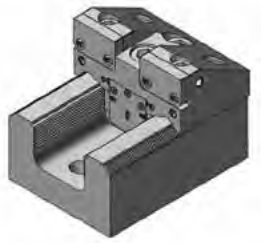
8 03.03.2020

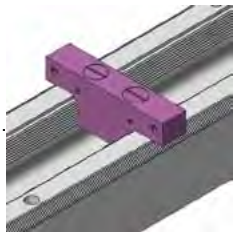












Die hohe Spannkraft dieses Systems ermöglicht den Einsatz für schwere Zerspanung.
Mit stabilen Kraftspannern können auf den Basisschienen auch grosse, bis zu mehrere tausend Kilogramm schwere Platten und Blöcke gespannt werden.

The high clamping force of the Apto Clamp enables heavy cuts. You achieve maximum rigidity with our Apto Clamp modular system! Even if your workpiece is thousands of kilogramms you don't have to worry to clamp big parts and big plates.

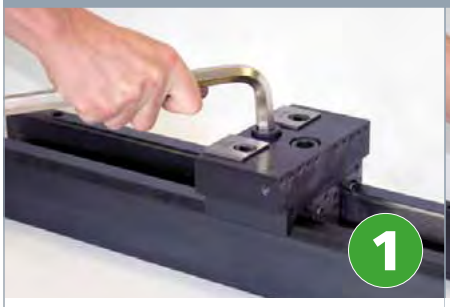
Elefantenstark und anwenderfreundlich
Powerful and user-friendly

Zur Positionierung der Spannmodule hat das Apto Clamp neben einer Querverzahnung zusätzlich ein Ankersystem zur Arretierung an einer Längsverzahnung in der Basisschiene. Durch die rechtwinklige Verkeilung wird eine von Mitbewerbern unerreichte Stabilität gewährleistet. Die Spannmodule liegen auf der genau geschliffenen Auflagefläche der Basis auf. Durch das Ankersystem und die geschliffene Auflagefläche wird das Spannmodul an der Basisschiene extrem kraftschlüssig und präzis fixiert. Trotzdem können die Spannmodule völlig ungehindert entlang der Basis verstellt (verschoben) werden. Auch das Auswechseln der Module ist einfach, müssen doch diese nicht aus der Schiene ausgefahren, sondern können abgehoben werden.

For positioning the clamp modules on the base rails, has the Apto Clamp system next to a positioning serration a horizontal anchor system for locking with enormes force produced by two M16 screws. The end modules have additionaly 4 M12 screws to give extra rigidity.

Darum haben wir dieses Symbol gewählt:
Thats why we have chosen this symbol:

Schnelligkeit / *Quickness*



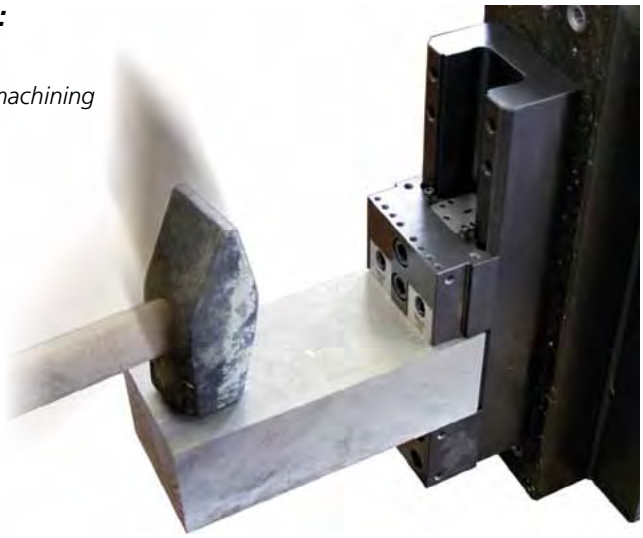
Zwei Schraube lösen
Loosen two screws

Abheben und neu platzieren
Lift and change position

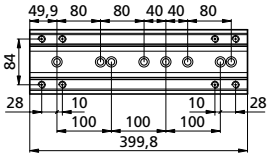
Zwei Schrauben anziehen
Fasten two screws

Vorteile auf einen Blick / *Benefits at a glance:*

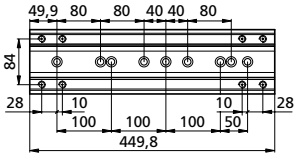
- Sehr stabil, robuste Bauweise, dadurch hohe Präzision
  Very stable, robust design allows high precision and heavy machining
- Module nach oben abhebbar, kein Ausfahren nötig
  Modules can be lifted up, no extension needed
- Keine verschmutzbaren T-Nuten: Formschlüssig positioniert
  No chip loading T-slots grooves: Positively positioned
- Verzahnung nicht dem Werkstück ausgesetzt
  The teeth are not exposed to the workpiece
- Niederzug- und Linearspannung möglich
  Pull-down and linear clamping possible
- Spannkraft bis 7000 daN pro Modul
  Clamping force up to 7000 daN per module



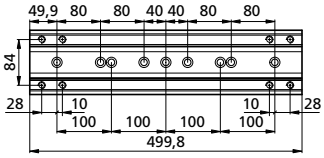
400 mm



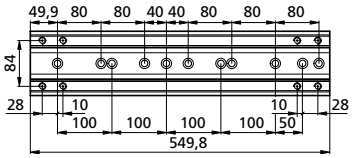
450 mm



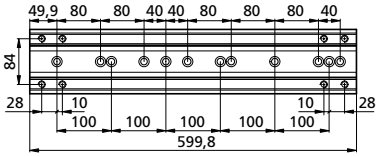
500 mm



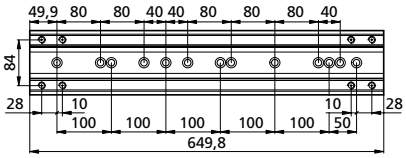
550 mm



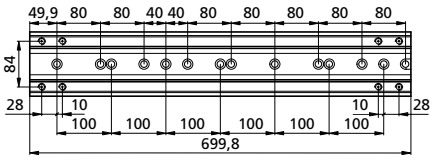
600 mm



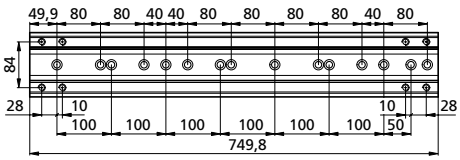
650 mm



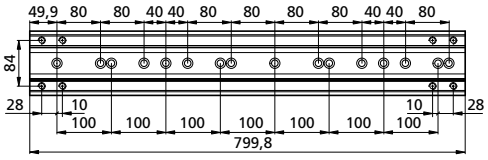
700 mm



750 mm



800 mm



Basisschiene / *Base rail*

Beim Apto Clamp ermöglicht eine Verzahnung mit 2 mm-Teilung auf der Basisschiene ein schnelles und genaues Positionieren der Spann- und Anschlagmodule.

With the new Apto Clamp a serration of 2mm pitch on the base rail allows a rapid and accurate positioning of the modules.

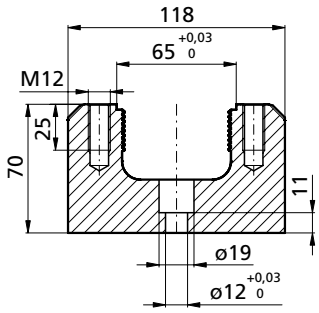
Durch gezielte elastische Deformation einer Lippe erfolgt eine spielfreie Paarung. Spann- und Bearbeitungskräfte werden einerseits an der ebenen, robusten Oberseite der Basisschiene aufgenommen, während anderseits das Spannmodul durch einen spreizenden Keil mit robustem Rundgewindeprofil in der Schiene verankert wird.

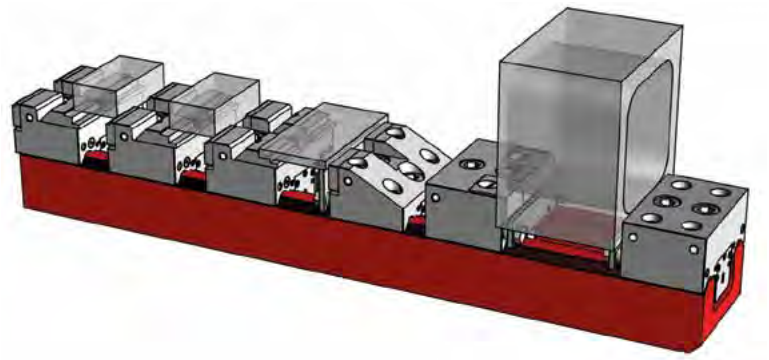
The outstanding development is that through elastic deformation of a lip, the engagement between the modules and the base rail is without play. Clamping and machining forces are absorbed on the upper surface of the base rail whereas the vice module is fixed to the rail by an expandable anchor which engages the round serration inside the base rail.

Das Einfügen zusätzlicher Module zwischen bestehenden Spannstellen ist problemlos möglich. Apto Clamp ist die konsequente Weiterentwicklung vom Power Clamp zur Bearbeitung noch grösserer Werkstücke.

The insertion of additional vice modules can be accomplished without problems. Apto Clamp is the logical development of Power Clamp to handle even larger work pieces.

Schnittzeichnung der Basisschiene *Sectional view of the base rail*

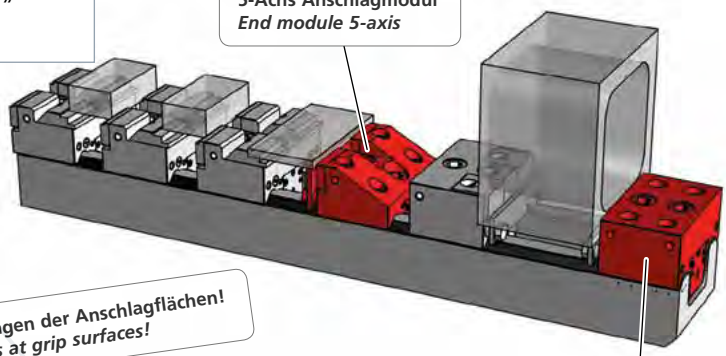


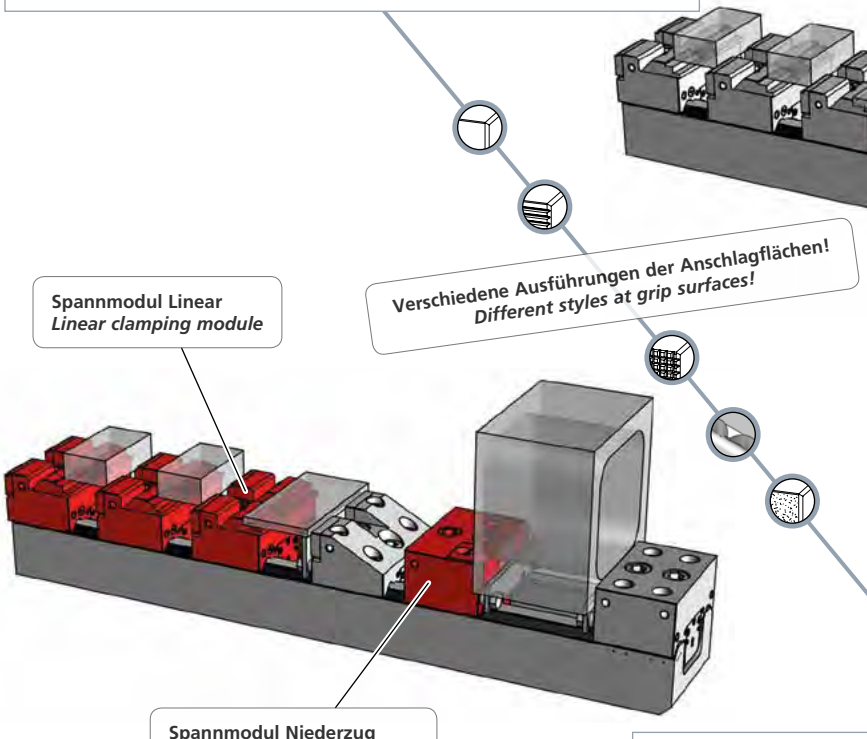


Das Anschlagmodul / *End modules*

In der Regel ist nur ein Anschlagmodul als „feste Backe" erforderlich.

In general, only a stop module is required as a „fixed jaw."



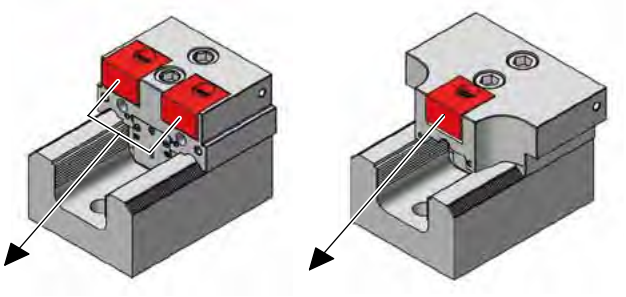


Das Spannmodul / *Clamp modules*

Die «beweglichen Backen» gibt es in zwei Ausführungen. Zum einen für das Niederzugspannsystem und zum anderen für das Linearspannsystem. Dabei dient das Spannmodul bei den Systemen wiederum als Anschlagmodul für die nächste Aufspannung.

Clampe modules have movable jaws (linear or pull down) in the front to clamp the part and on the back there is the datum face for the next work piece stop. Positioning step on the base rail is 2mm every.

Niederzugspannmodule
Pull down clamp modules



Die Fakten beim Niederzugspannsystem

Verstellbereich: 0- 3,8 mm
Spannkraft: Bis 7´000 daN

Vorteile beim Niederzugspannsystem:

- Höhere Haltekräfte
- Hohe Wiederholgenauigkeit
- Optimale Spannmethode für Kleinteile
- Mit Schnellwechselbacken
- Doppelspannsystem in einer Backe zum Spannen und Bearbeiten von zwei Kleinteilen

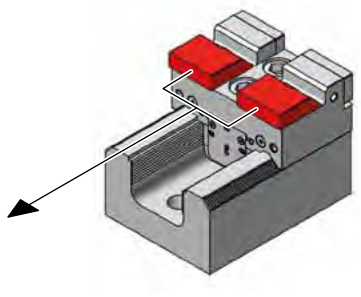
Facts for pull down clamp modules

Jaw range: 0- 3,8 mm
Clamping force: up to 7´000 daN

Advantages pull down jaws:

- *Higher holding force*
- *With linear adaptable jaws*
- *Also with pull down jaws for the stop side available*
- *With adapter set can be changed to linear*
- *Also pull down jaws for datum face*

Linearspannmodule
Linear clamp modules



Die Fakten beim Linearpannsystem

Verstellbereich: 0- 5,0 mm
Spannkraft: Bis 3´200 daN

Vorteile beim Linearpannsystem:

- Spannstockähnliches Spannen
- Prozesssichere Positionierung der zweiten Aufspannung
- Gut geeignet für die Erstellung von individuellen Formbacken
- Sicherer Halt mit Prägetechnik

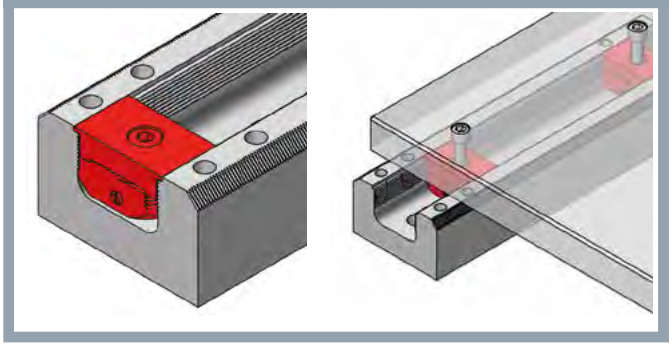
Facts for linear clamp modules

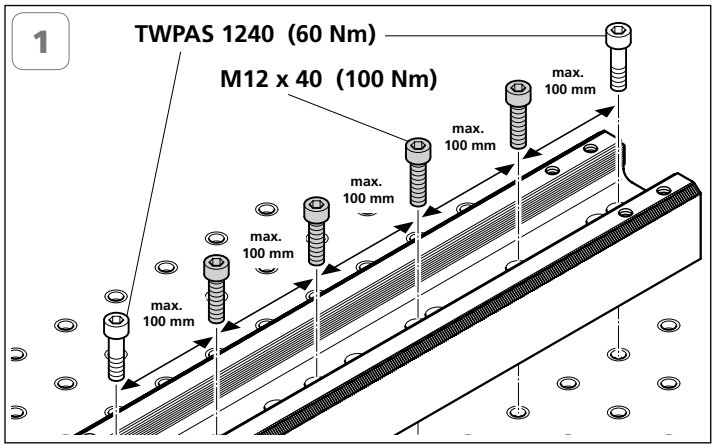
Jaw range: 0- 5,0 mm
Clamping force: up to 3´200 daN

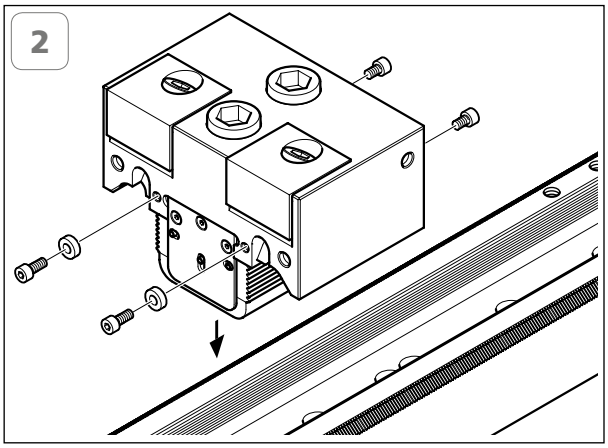
Advantages linear jaws:

- *Similar clamp as conventional vise*
- *Good for shaped jaws*
- *Secure clamped with direct stamping jaws*
- *Higher accuracy*

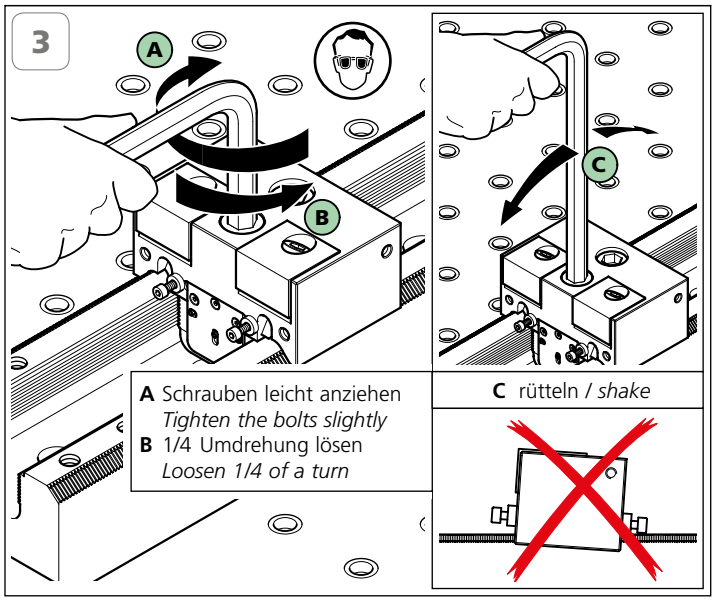
Universalnutenstein
Universal nut

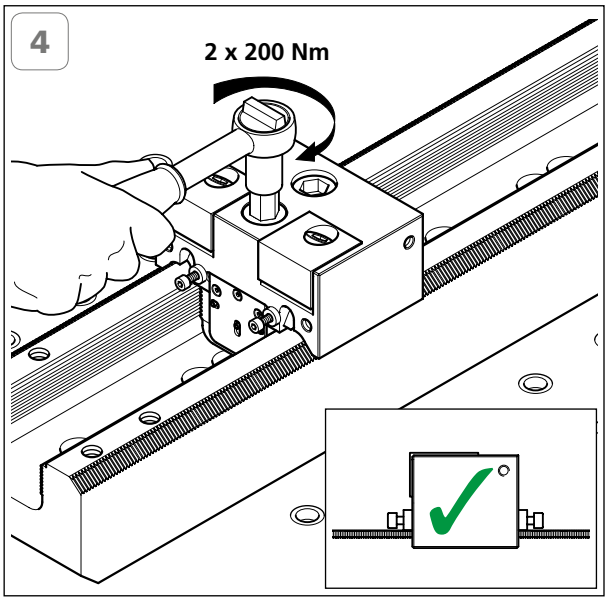


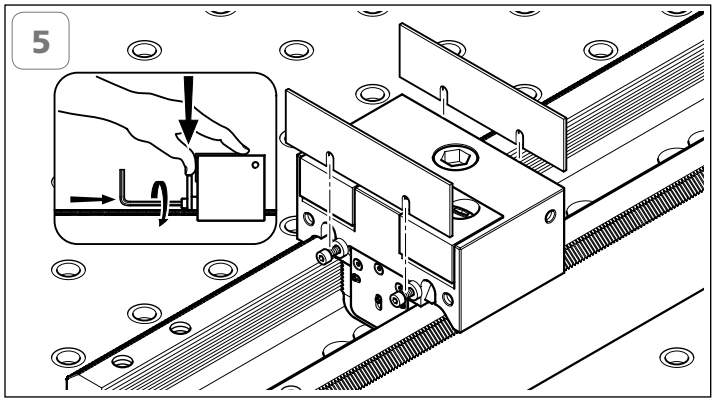


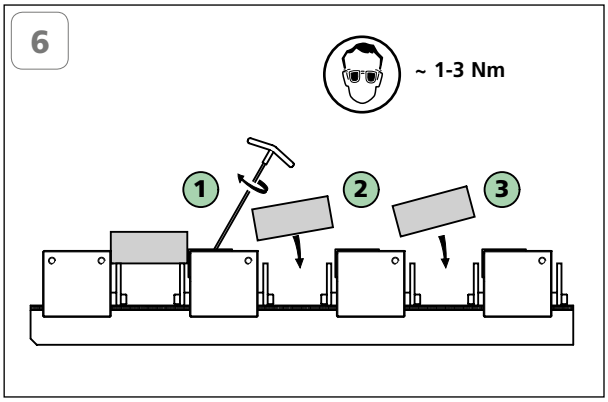


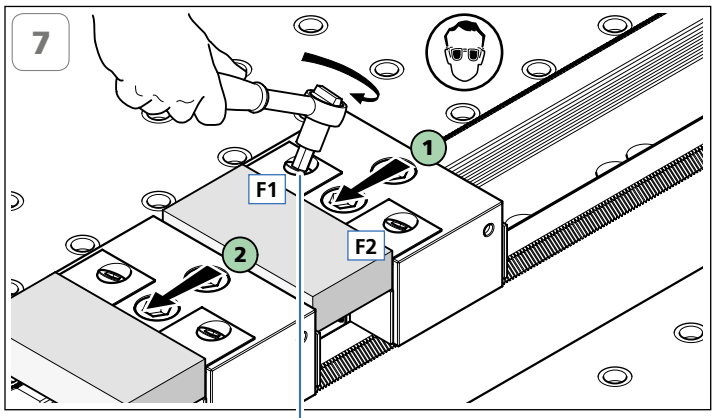
Ineinandergreifen der Verzahnung prüfen
Check matching of the teeth











max. Drehmoment beachten
Observe max. torque

Schraube *Screw*	Drehmoment *Torque*		Spannkraft (F1 & F2) *Workholding force (F1 & F2)*		
	Nm	(lb-ft)	~daN	~(lb)	~t
M10	10	7,4	= 1200	2'650	1,2
	20	14,8	= 2700	5'950	2,7
	30	22,2	= 4100	9'040	4,1
	40	29,5	= 5600	12'350	5,6
	50	37,0	= 7000	15'430	7,0

ACHTUNG / *CAUTION*

WICHTIG: Die angegebenen Drehmomente sind die absoluten Maximalwerte. Über die Spannkräfte gibt die untenstehende Tabelle Auskunft.

IMPORTANT: *The torque numbers specified represent the absolute maximum. The table at the bottom of this page provides further information on the workholding forces.*

Schraube *Screw*	Drehmoment *Torque*		Spannkraft (F1 & F2) *Workholding force (F1 & F2)*		
	Nm	(lb-ft)	~daN	~(lb)	~t
M10	**10**	7,4	= 1200	2'650	1,2
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	30	22,2	= 4100	9'040	4,1
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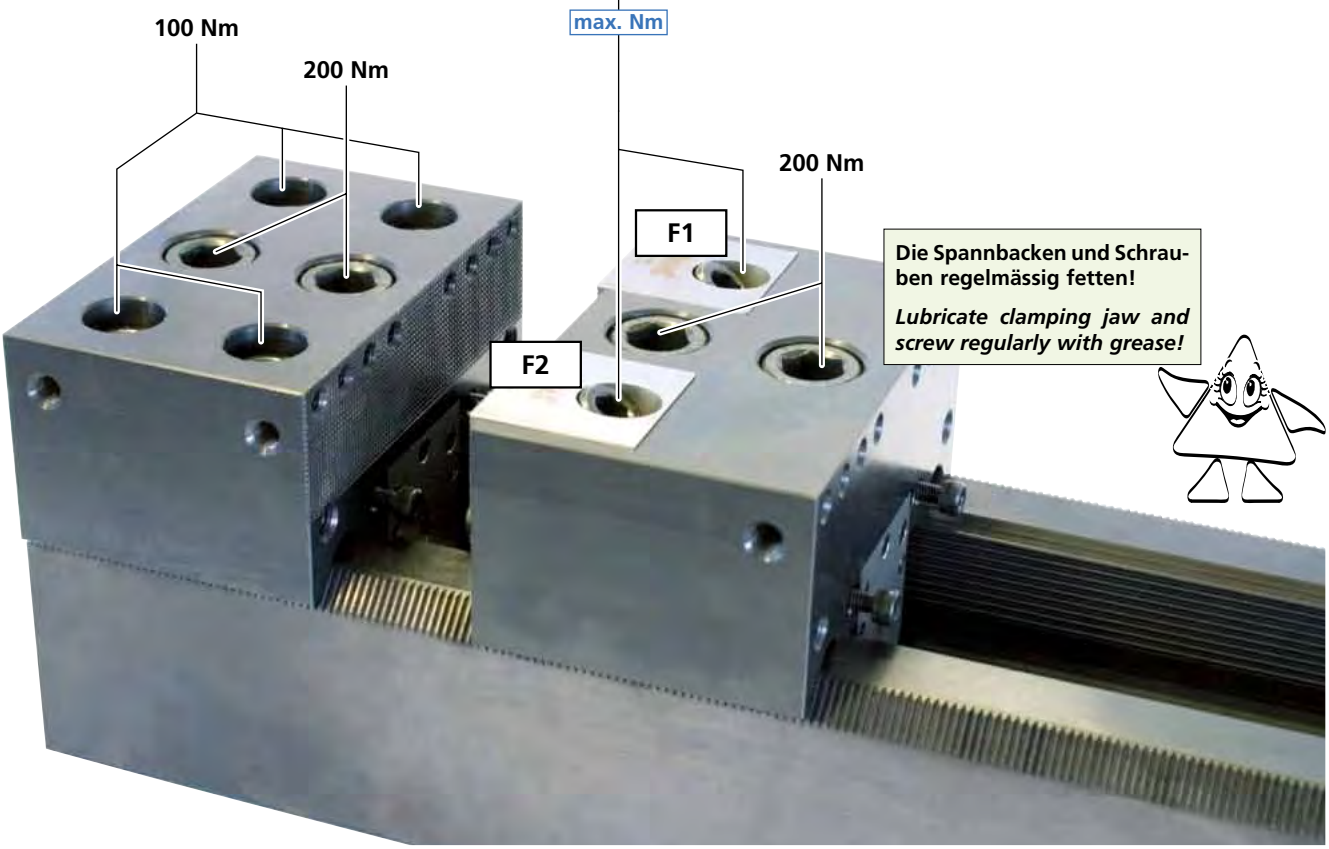
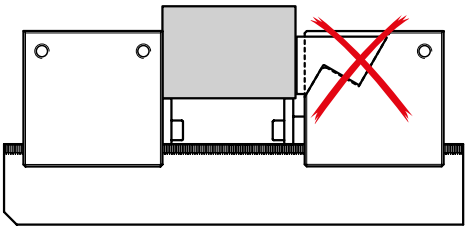
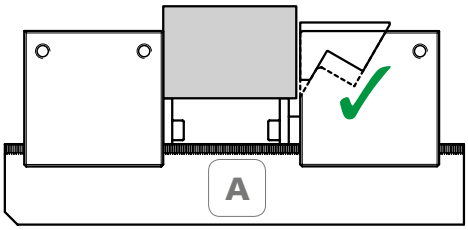
	50	37,0	= 7000	15'430	7,0

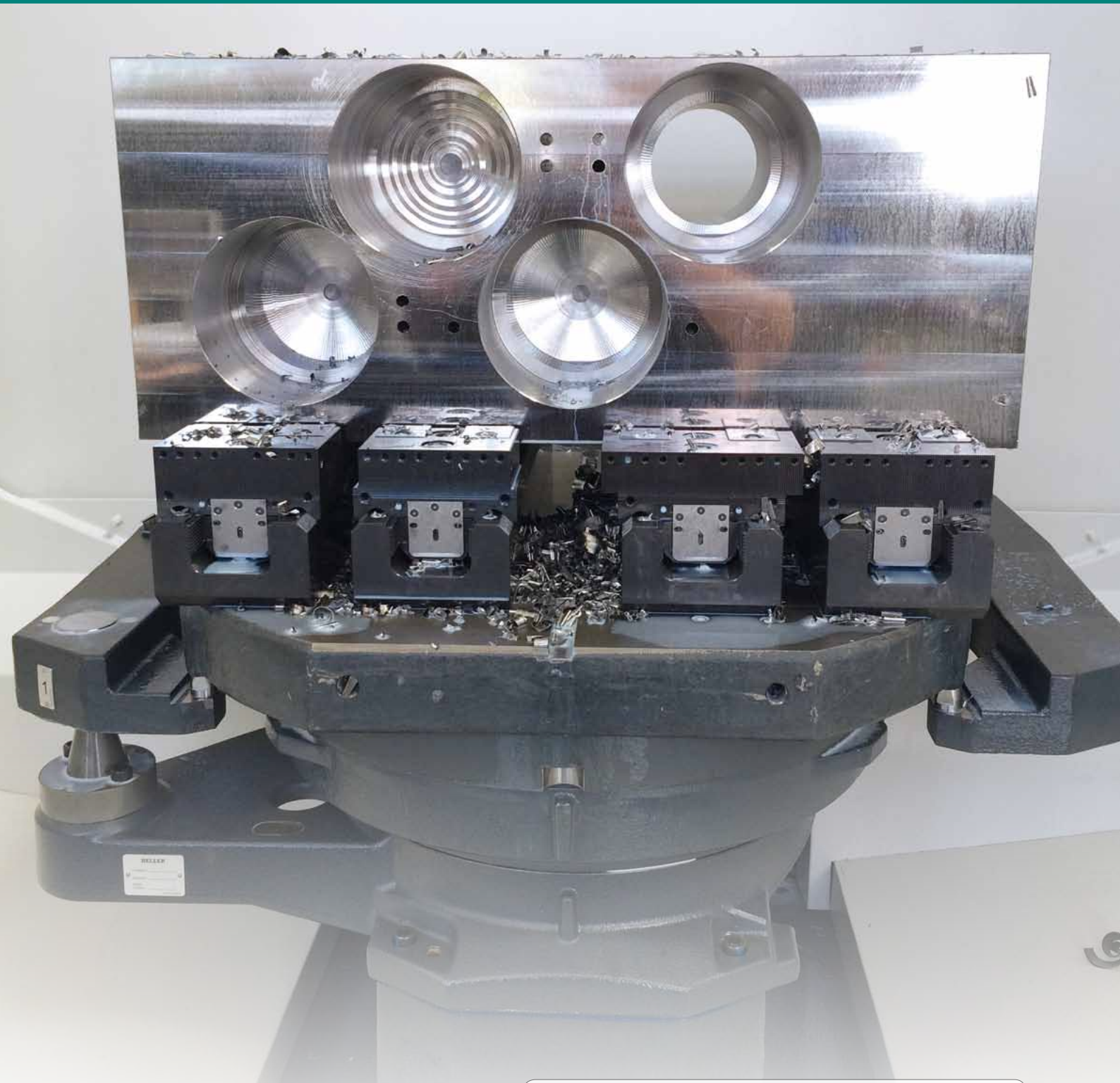


WICHTIG:
Vor dem Positionieren der Spannmodule für ein neues Werkstück ist die Spannbacke ganz zurück zu stellen, dies gewährleistet eine sichere Spannung (**siehe Bild A**)!

IMPORTANT:
*Prior to setting up a new clamping module the clamping jaw of the vice module must be retracted all the way (**see picture A**)! This guaranties proper clamping of the new workpiece.*





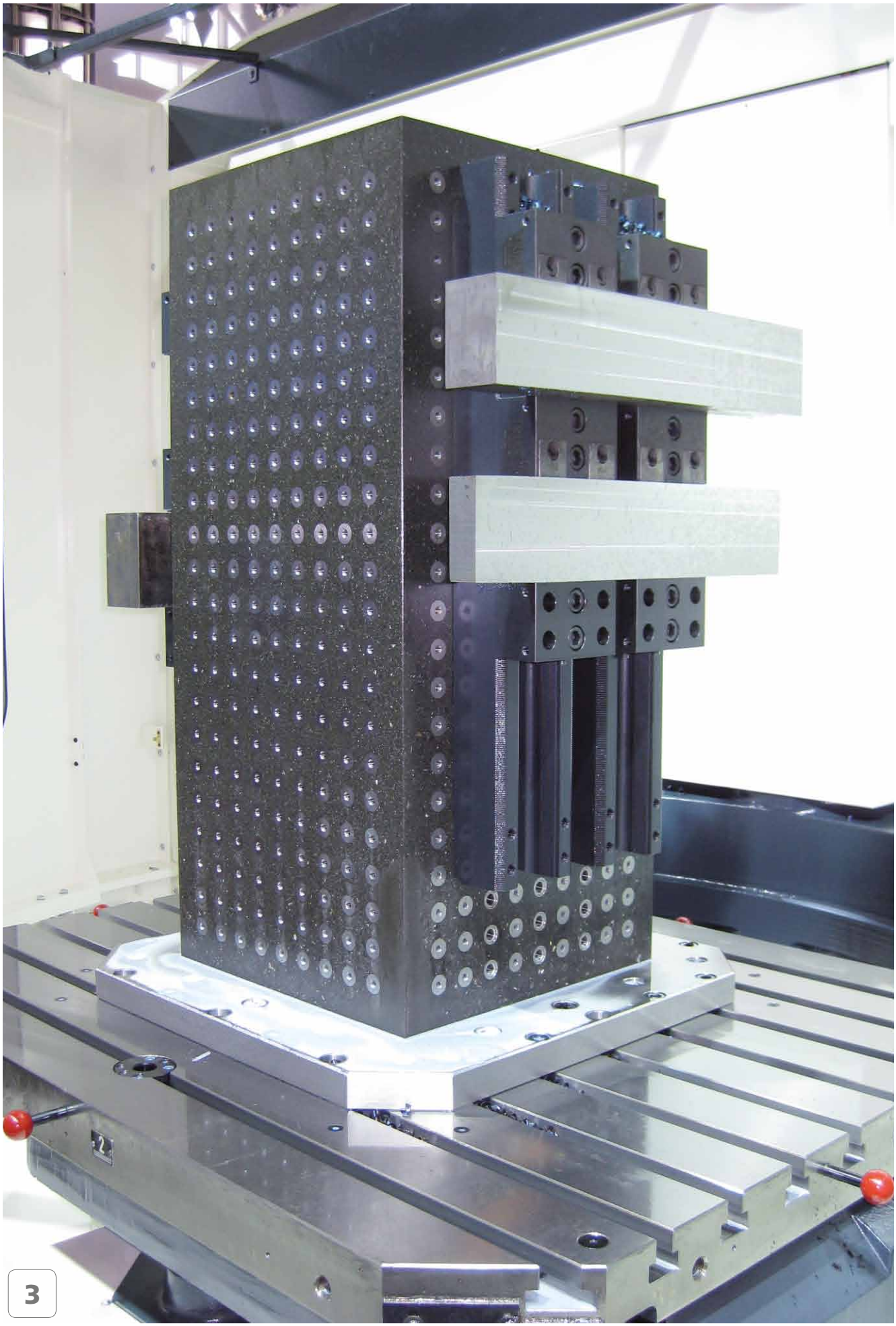


Material	42Cr Mo4
Bearbeitung mit Fräskopf *Machining with milling head*	Ø 200
Bohrer / *Drills*	Ø 124
Einspanntiefe / *Clamping depth*	24mm

Apto Clamp in der Schwerzerspannung auf Heller 5-Achsen-Maschine
Apto Clamp for heavy duty machining on a 5-axis machine

1

2



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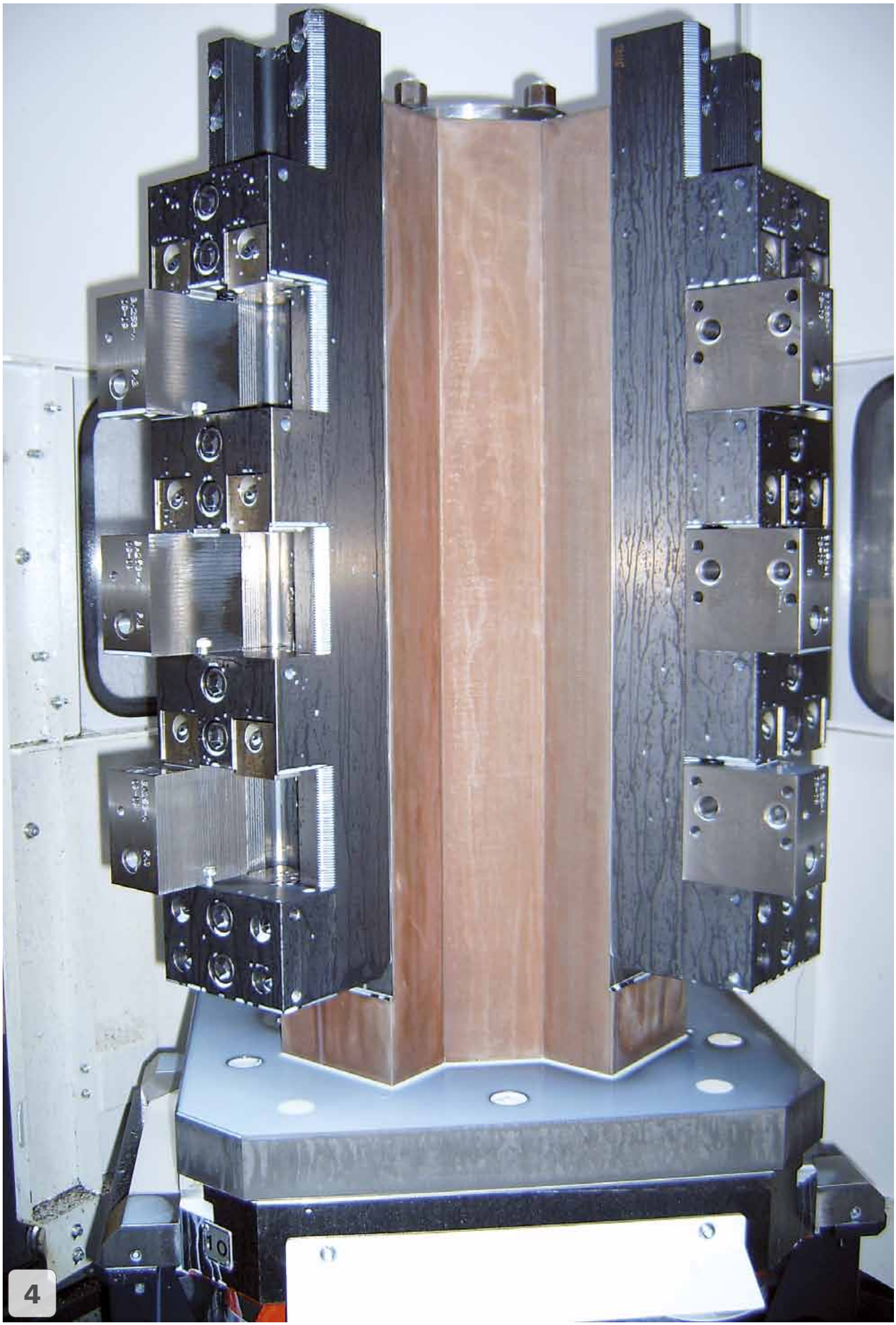
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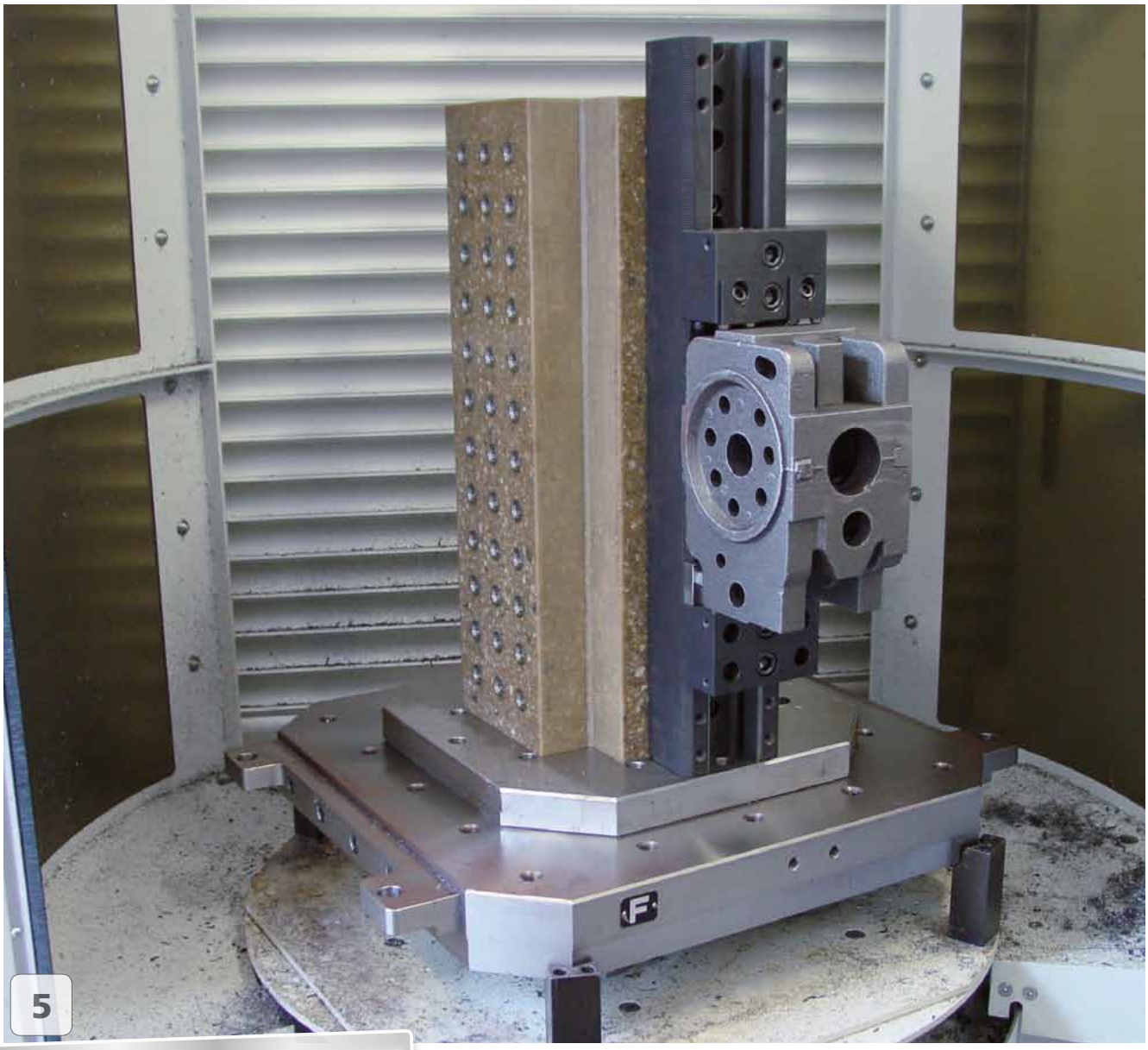
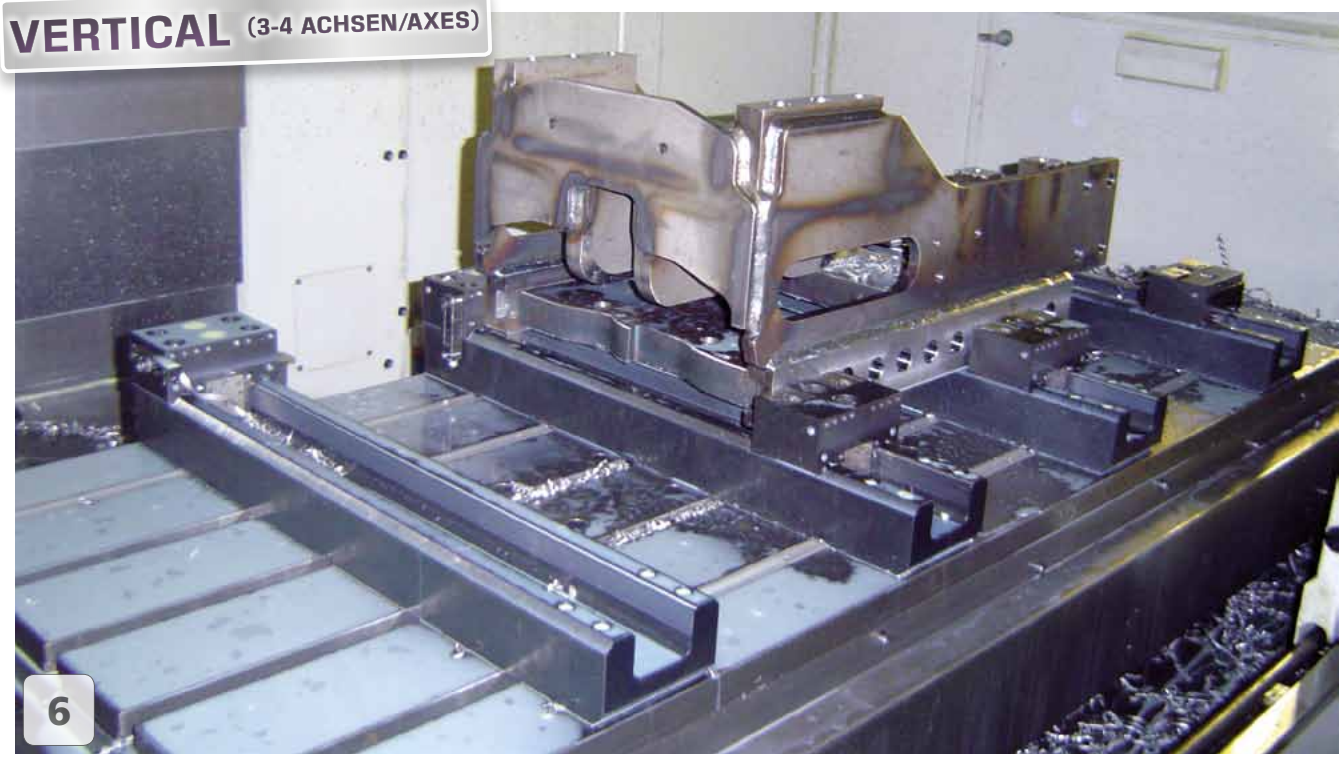


5

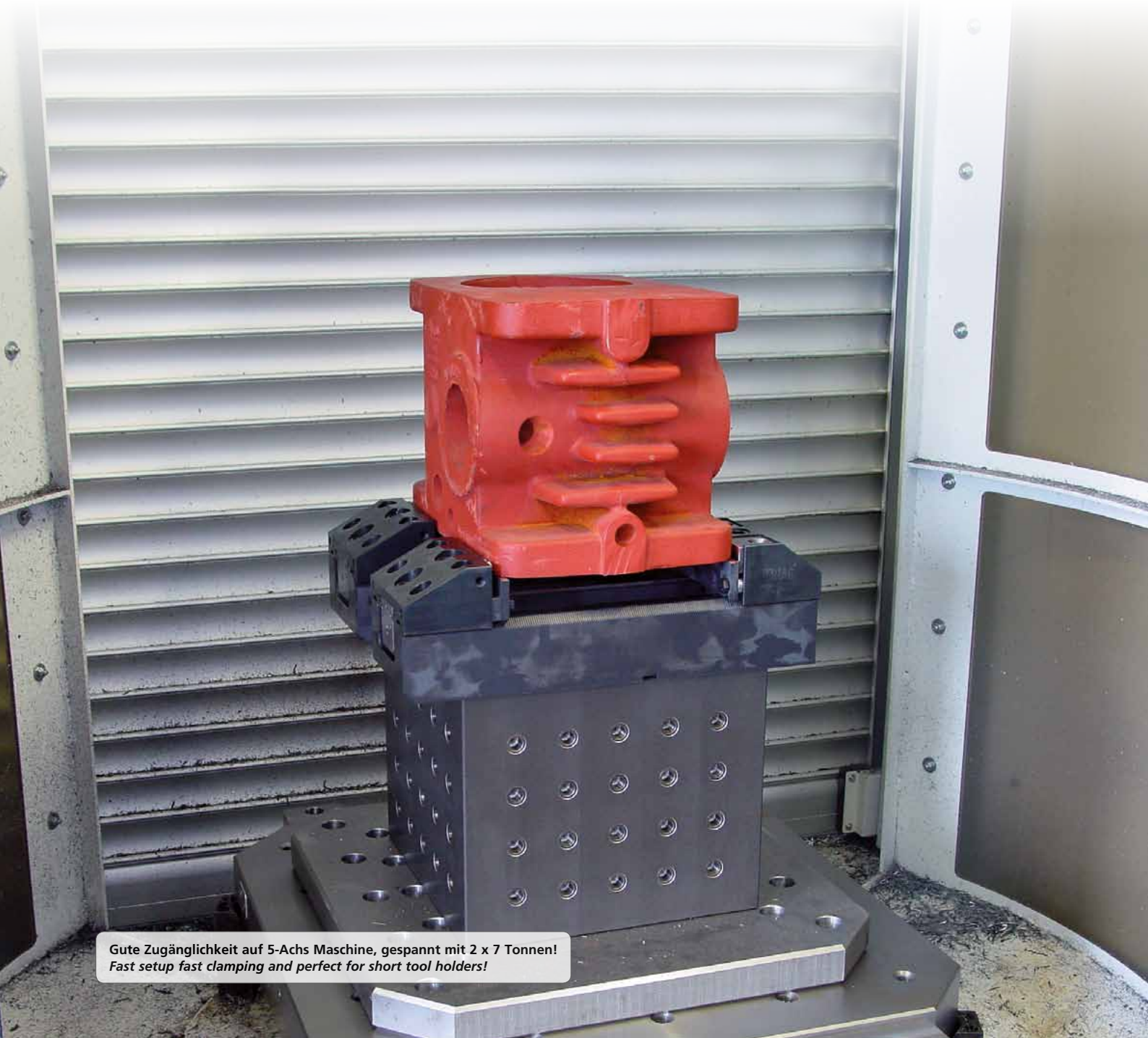
VERTICAL (3-4 ACHSEN/AXES)



6

Es gibt zusätzlich Apto Clamp Module in angeschrägter Ausführung. Damit kann ein optimaler Zugang zum Werkstück bei der 5-Achsenmaschine gewährleistet werden. Die Spannmodule produzieren bis zu 7000 daN (7 Tonnen) Spannkraft und sind für die Schwerzerspanung empfohlen.

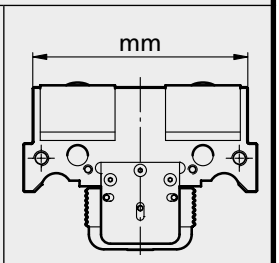
We offer Apto Clamp modules in slanted version. That ensures an optimal access to the workpieces on 5-axis machines. The clamping modules produce up to 7000 daN (7 tons) clamping force and are recommended for heavy roughing workholding.

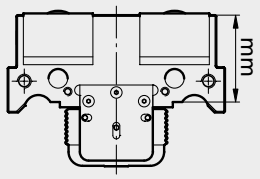


Gute Zugänglichkeit auf 5-Achs Maschine, gespannt mit 2 x 7 Tonnen!
Fast setup fast clamping and perfect for short tool holders!

System *System*	
A	Apto Clamp
P	Power Clamp
C	Compact Clamp
M	Micro Clamp
V	Vorrichtungsbaumodule *Workholding modules for dedicated fixtures*

bei Anschlagmodulen *for end module*	
N	nitriergehärtet *nitrated*
D	durchgehärtet *through hardened*
bei Spannmodulen ***for vice modules***	
1 2 3	Anzahl Spannbacken *Number of jaws*

Modulnutzbreite *Module clamping width*	
115 125 150	

Modulnutzhöhe *Module clamping height*	
50	

A S 2 R 115 N 50 B80

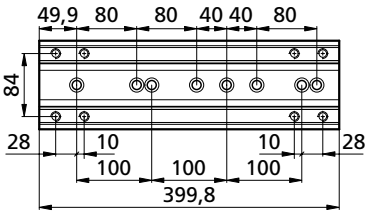
Modultyp *Type of module*	
A	Anschlagmodul *End module*
S	Spannmodul *Clamping module*
T	Trägermodul *Supporting module*
R	Rohling *Blank*

Anschlagfläche der Module *Datum face*	
F	Anschlagfläche glatt *Datum face flat*
R	Anschlagfläche geriffelt *Datum face double serrated*
D	eine Seite glatt, eine Seite geriffelt *one face flat, one face double serrated*
G	Anschlagfläche gerillt *Datum face serrated*
X	spezielle Ausführung *special execution*
5X	5axes Clamp

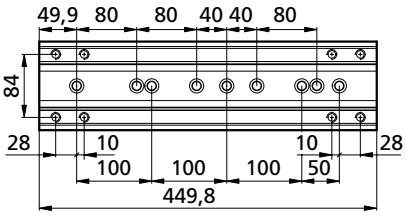
Backenhub *Stroke of clamping jaw*	
N	Niederzug *Pull down*
L	linear / parallel *linear / parallel*
-	ohne Spannbacke *no clamping jaw*

Spannbackentyp *Type of clamping jaw*	
B01 - B140	Spannbacke *Clamping jaw*
-01 - -105	Modul ohne Zubehör *Module without acces-sories*
X30 X50 X60	Trägermodullänge *Supporting module length*
PRG	Prägebacke *Stamping jaw*

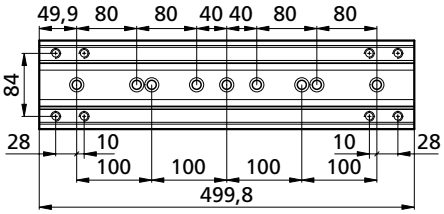
ACB4050400 kg ~18



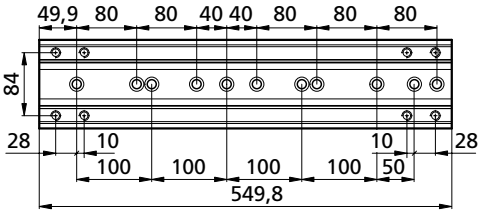
ACB4050450 kg ~20



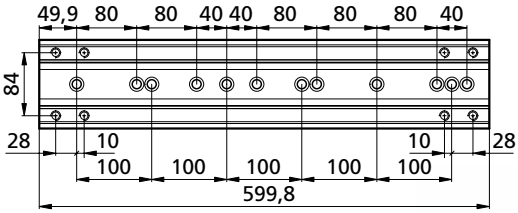
ACB4050500 kg ~22



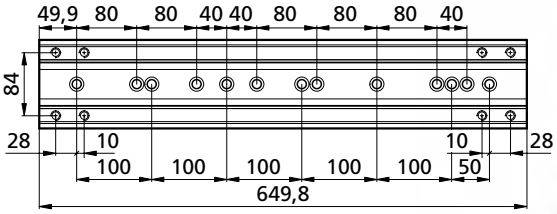
ACB4050550 kg ~24



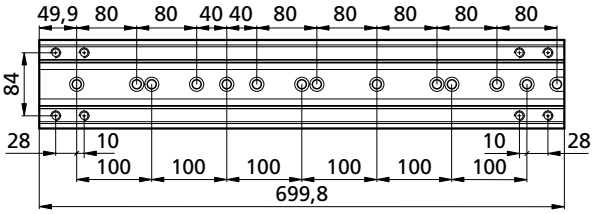
ACB4050600 kg ~26



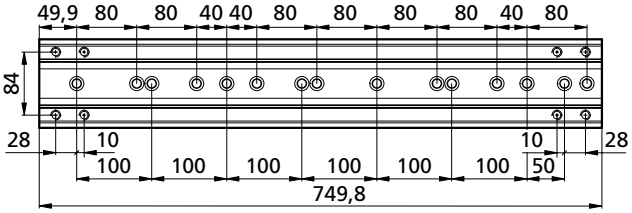
ACB4050650 kg ~29



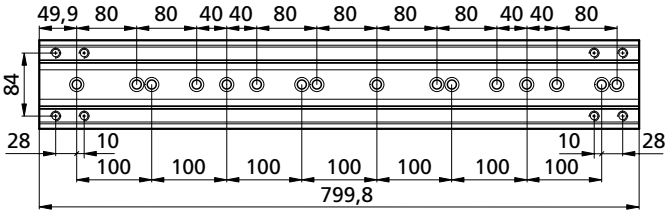
ACB4050700 kg ~31

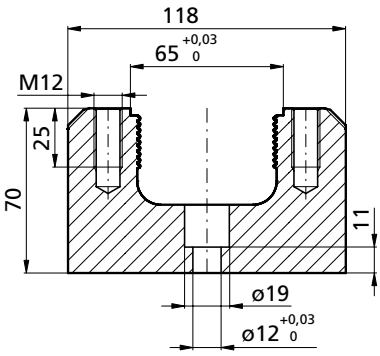


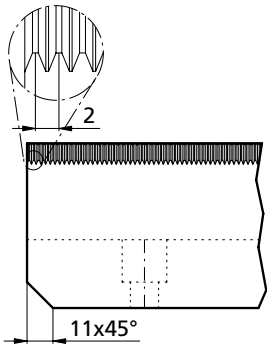
ACB4050750 kg ~33

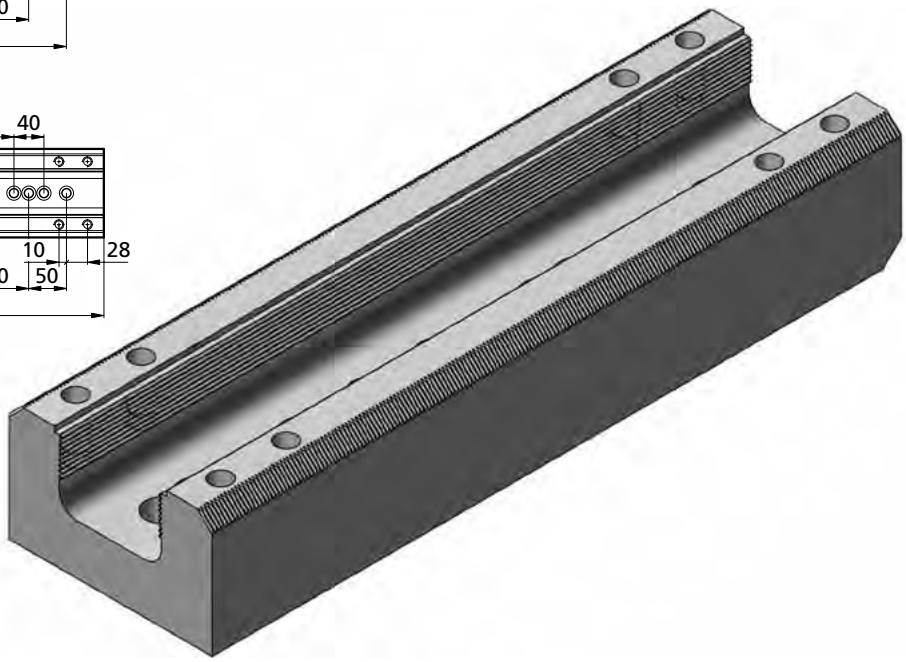


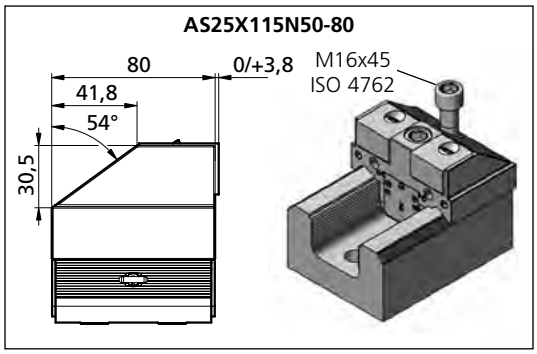
ACB4050800 kg ~35

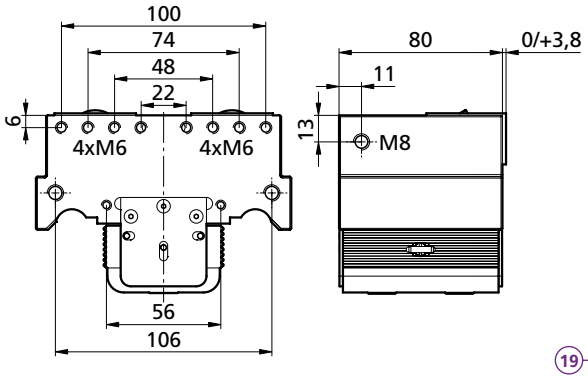


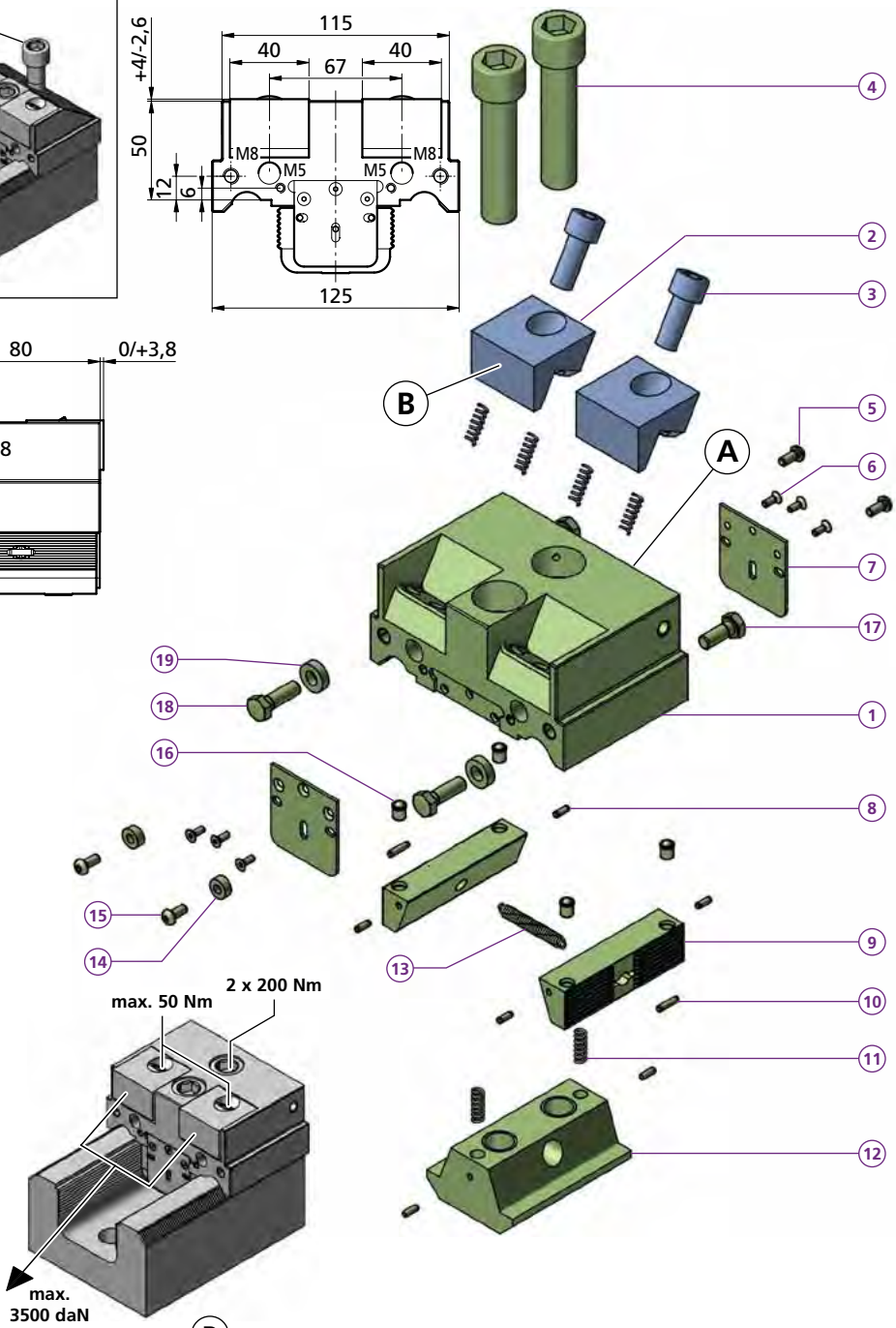












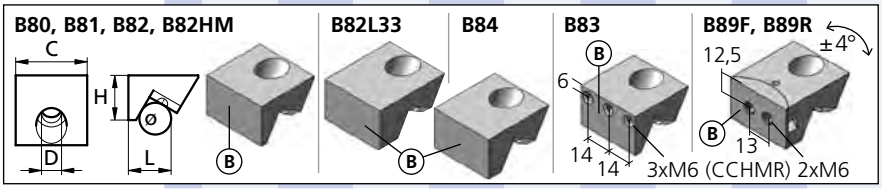
A

	AS25X115N50-80	
1	1x	TF140678
4	1x	M16x45 ISO 4762
	1x	M16x70 ISO 4762
18	2x	M8x20 ISO 4017
19	2x	ACD005
kg		~4,3
	AS2F115N50-80	
1	1x	TF140676
	AS2R115N50-80	
1	1x	TF140677
2	2x	
3	2x	M10x25 ISO 4762
4	2x	M16x70 ISO 4762
5	2x	M5x10 ISO 4762
6	6x	M3x6 DIN 7991
7	2x	ACBL4243
8	6x	Ø 3x8 VSM 12785
9	2x	ACSP7620
10	2x	Ø 3h 8x12 ISO 2338
11	6x	FED0618
12	1x	ACSK7632M16
13	1x	FED Ø 5,5x39
14	2x	PCD005
15	2x	M5x14 ISO 4762
16	4x	Ø 6-Niro SM1275-3
17	2x	M8x16 ISO 4017
18	2x	M8x20 ISO 4017
19	2x	ACD005
kg		~4,8

B

Bestellbeispiel / *Ordering example:* 1x AS2R115N50-80 & 1x B80

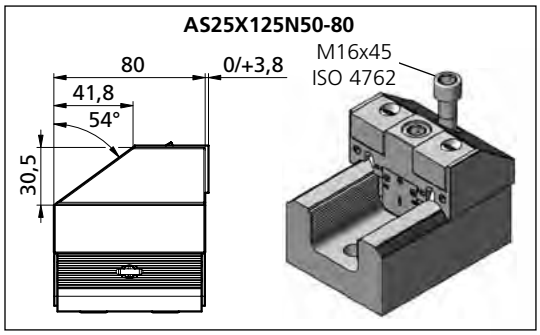
	B80	B81	B82	B82L33	B82HM	B83	B84	B89F	B89R
C	40	40	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25	25	25
L	22	22	22,2	33	22,2	22	26,3	29	29
D	11	11	11	11	11	11	11	11	11
ø	15	15	15	15	15	15	15	15	15
i	56HRC	56HRC	*	*	56HRC	HV700 x0,2mm	*	HV700 x0,2mm	HV700 x0,2mm
kg	~0,2	~0,2	~0,2	~0,28	~0,2	~0,2	~0,2	~0,24	~0,24

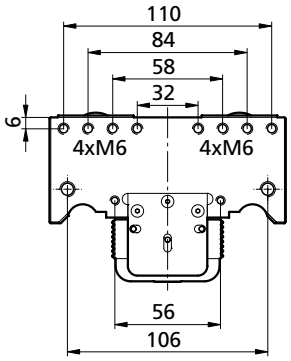


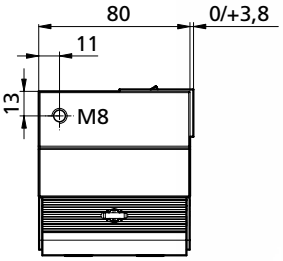
* = weich / *soft*

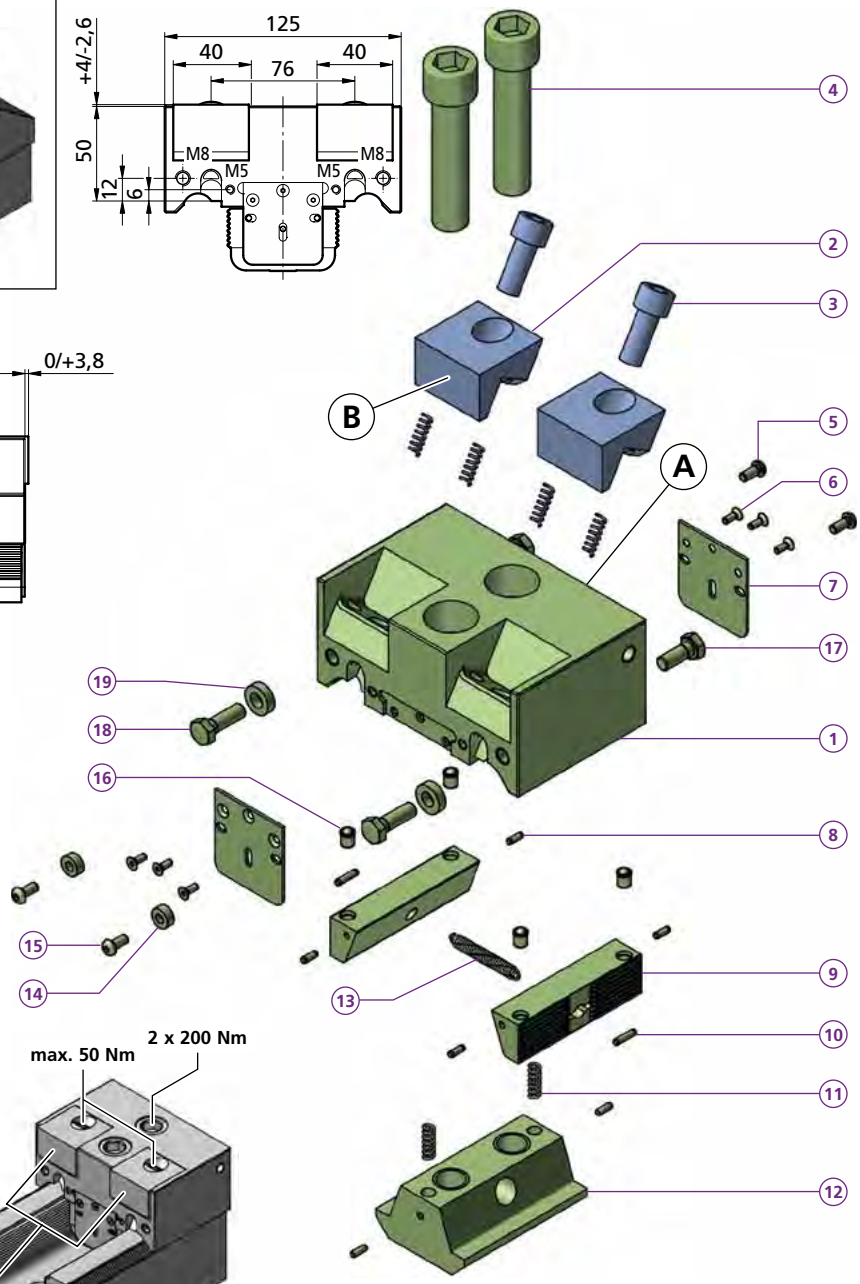
HM = Hartmetallbeschichtet / *Carbide coated*

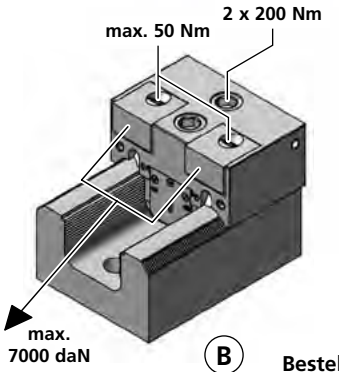
Separat bestellen / *Separate order*











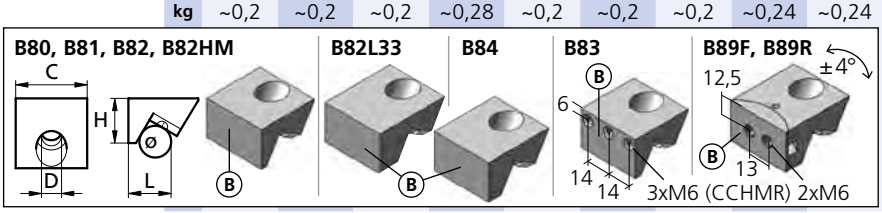
A

	AS25X125N50-80	
1	1x	TF140682
4	1x	M16x45 ISO 4762
	1x	M16x70 ISO 4762
18	2x	M8x20 ISO 4017
19	2x	ACD005
kg		~4,3
	AS2F125N50-80	
1	1x	TF140680
	AS2R125N50-80	
1	1x	TF140681
2	2x	
3	2x	M10x25 ISO 4762
4	2x	M16x70 ISO 4762
5	2x	M5x10 ISO 4762
6	6x	M3x6 DIN 7991
7	2x	ACBL4243
8	6x	Ø 3x8 BN 879
9	2x	ACSP7620
10	2x	Ø 3h 8x12 ISO 2338
11	6x	FED0618
12	1x	ACSK7632M16
13	1x	FED Ø 5,5x39
14	2x	PCD005
15	2x	M5x14 ISO 4762
16	4x	Ø 6-Niro SM1275-3
17	2x	M8x16 ISO 4017
18	2x	M8x20 ISO 4017
19	2x	ACD005
kg		~4,9

B

Bestellbeispiel / *Ordering example:* 1x AS2R125N50-80 & 1x B80

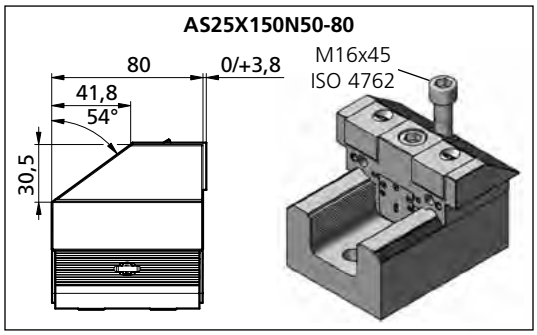
	B80	B81	B82	B82L33	B82HM	B83	B84	B89F	B89R
C	40	40	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25	25	25
L	22	22	22,2	33	22,2	22	26,3	29	29
D	11	11	11	11	11	11	11	11	11
ø	15	15	15	15	15	15	15	15	15
i	56HRC	56HRC	*	*	56HRC	HV700 x0,2mm	*	HV700 x0,2mm	HV700 x0,2mm
kg	~0,2	~0,2	~0,2	~0,28	~0,2	~0,2	~0,2	~0,24	~0,24

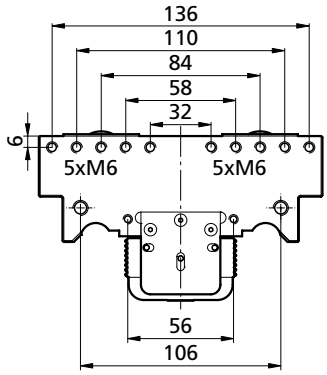


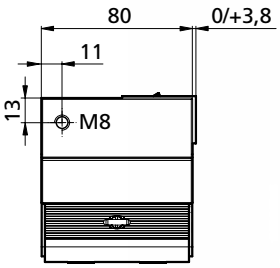
Separat bestellen / *Separate order*

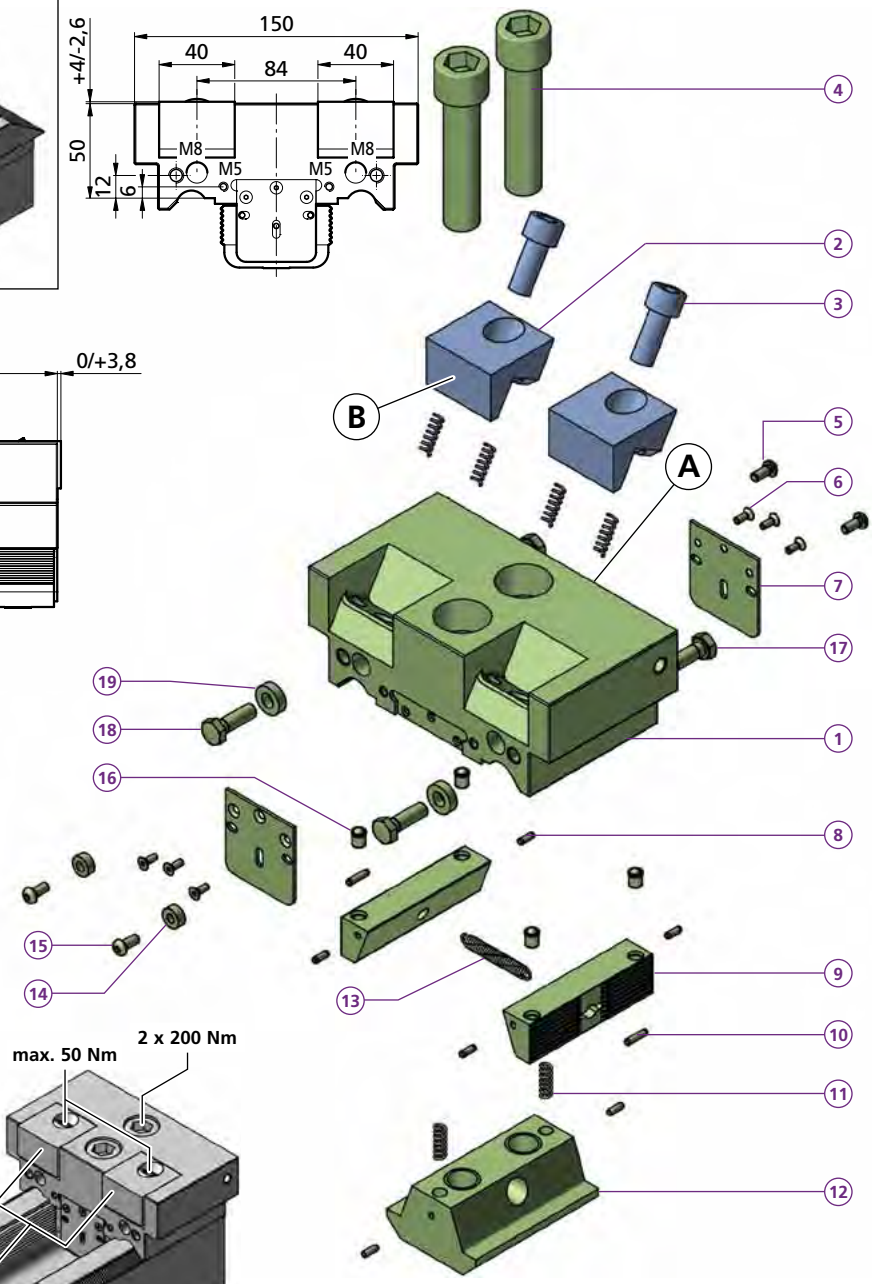
* = weich / *soft*

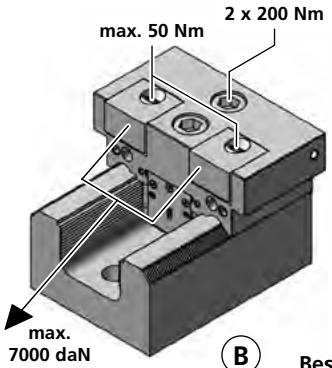
HM = Hartmetallbeschichtet / *Carbide coated*











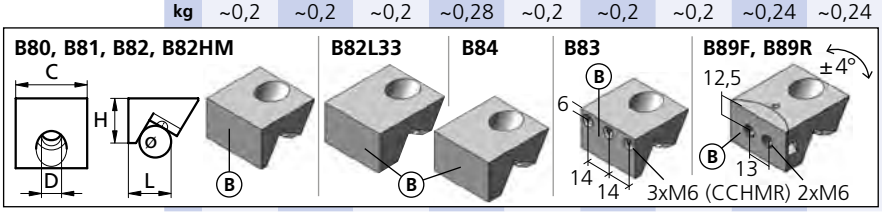
A

	AS25X150N50-80	
1	1x	TF140687
4	1x	M16x45 ISO 4762
	1x	M16x70 ISO 4762
18	2x	M8x20 ISO 4017
19	2x	ACD005
kg		~4,7
	AS2F150N50-80	
1	1x	TF140685
	AS2R150N50-80	
1	1x	TF140686
2	2x	
3	2x	M10x25 ISO 4762
4	2x	M16x70 ISO 4762
5	2x	M5x10 ISO 4762
6	6x	M3x6 DIN 7991
7	2x	ACBL4243
8	6x	Ø 3x8 VSM 12785
9	2x	ACSP7620
10	2x	Ø 3h 8x12 ISO 2338
11	6x	FED0618
12	1x	ACSK7632M16
13	1x	FED Ø 5,5x39
14	2x	PCD005
15	2x	M5x14 ISO 4762
16	4x	Ø 6-Niro SM1275-3
17	2x	M8x16 ISO 4017
18	2x	M8x20 ISO 4017
19	2x	ACD005
kg		~5,4

B

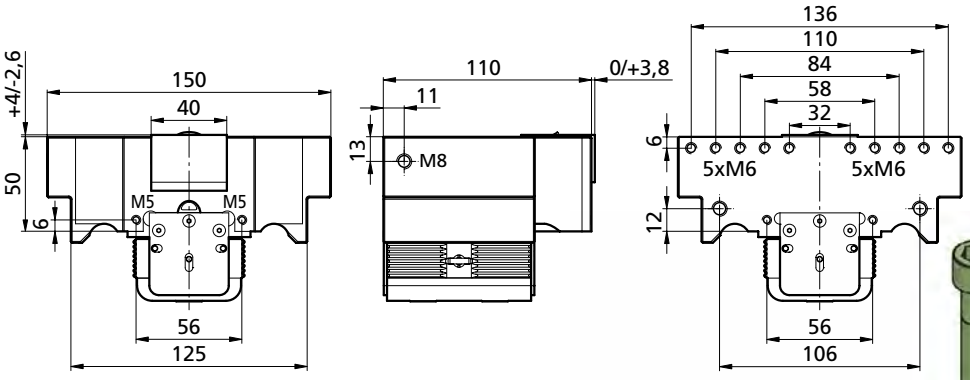
Bestellbeispiel / *Ordering example:* 1x AS2R150N50-80 & 1x B80

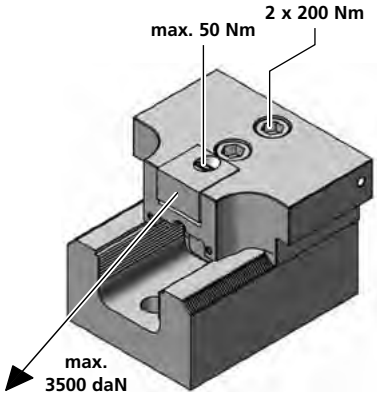
	B80	B81	B82	B82L33	B82HM	B83	B84	B89F	B89R
C	40	40	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25	25	25
L	22	22	22,2	33	22,2	22	26,3	29	29
D	11	11	11	11	11	11	11	11	11
ø	15	15	15	15	15	15	15	15	15
i	56HRC	56HRC	*	*	56HRC	HV700 x0,2mm	*	HV700 x0,2mm	HV700 x0,2mm
kg	~0,2	~0,2	~0,2	~0,28	~0,2	~0,2	~0,2	~0,24	~0,24

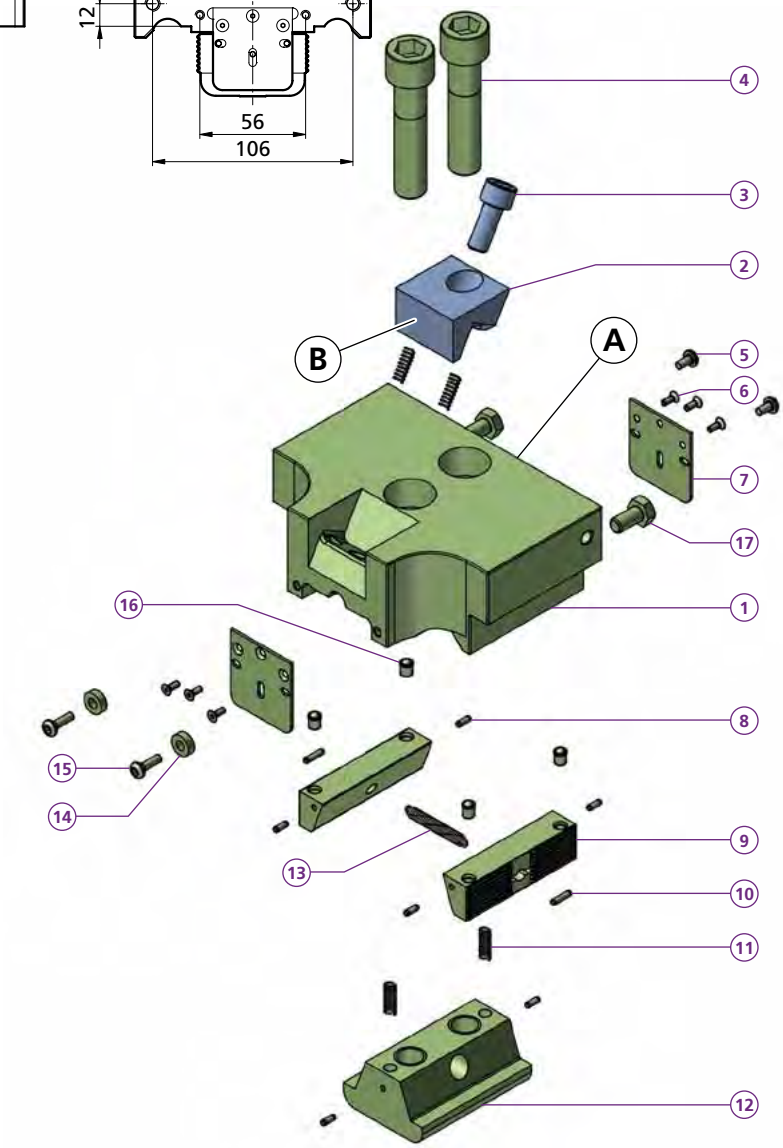


* = weich / *soft*

HM = Hartmetallbeschichtet / *Carbide coated*



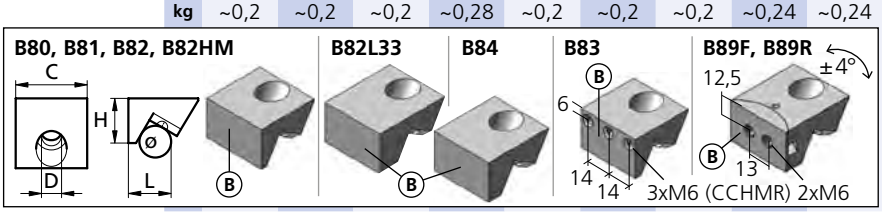




		A
	AS1F150N50-80	
1	1x TF140688	
	AS1R150N50-80	
1	1x TF140689	
2	2x	
3	1x M10x25 ISO 4762	
4	2x M16x70 ISO 4762	
5	2x M5x10 ISO 4762	
6	6x M3x6 DIN 7991	
7	2x ACBL4243	
8	6x Ø 3x8 VSM 12785	
9	2x ACSP7620	
10	2x Ø 3h 8x12 ISO 2338	
11	4x FED0618	
12	1x ACSK7632M16	
13	1x FED Ø 5,5x39	
14	2x PCD005	
15	2x M5x14 ISO 4762	
16	4x Ø 6-Niro SM1275-3	
17	2x M8x16 ISO 4017	
kg	~6,6	

B **Bestellbeispiel / *Ordering example:*** 1x AS1R150N50-80 & 1x B80

	B80	B81	B82	B82L33	B82HM	B83	B84	B89F	B89R
C	40	40	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25	25	25
L	22	22	22,2	33	22,2	22	26,3	29	29
D	11	11	11	11	11	11	11	11	11
ø	15	15	15	15	15	15	15	15	15
i	56HRC	56HRC	*	*	56HRC	HV700 x0,2mm	*	HV700 x0,2mm	HV700 x0,2mm
kg	~0,2	~0,2	~0,2	~0,28	~0,2	~0,2	~0,2	~0,24	~0,24

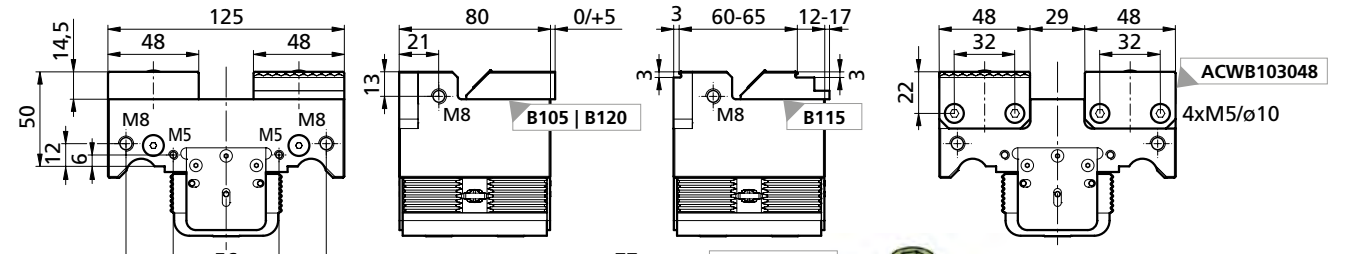


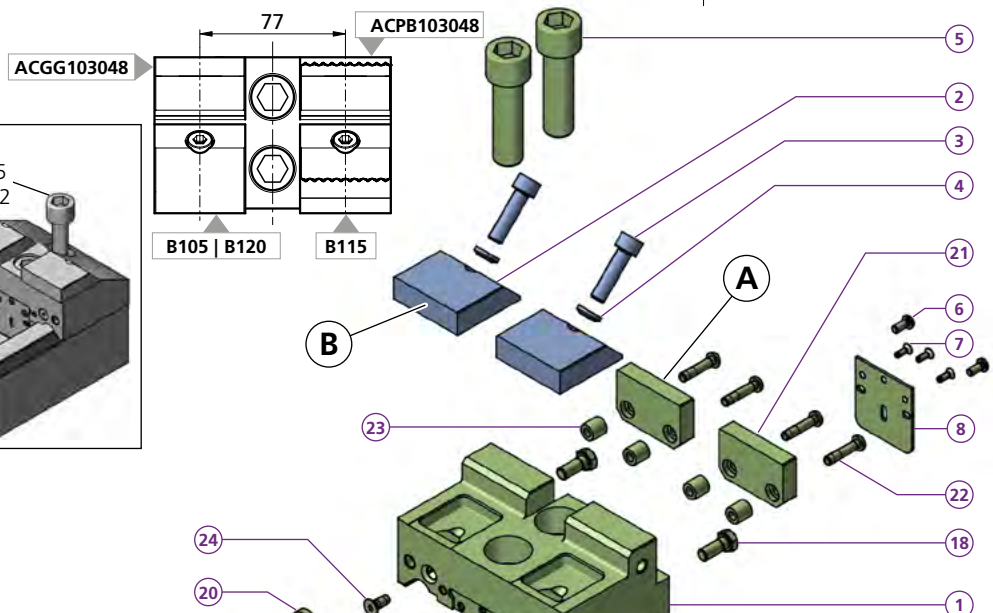
Separat bestellen / *Separate order*

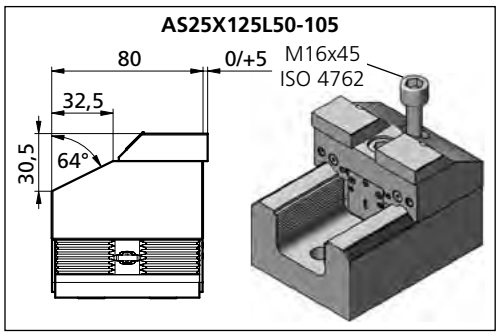
* = weich / *soft*

HM = Hartmetallbeschichtet / *Carbide coated*

AS2X125L50-105
AS25X125L50-105

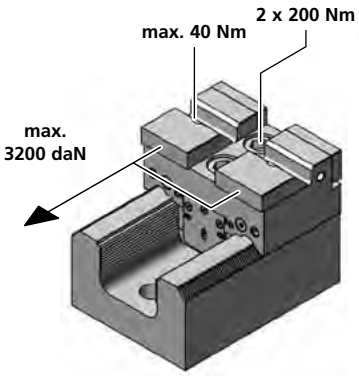






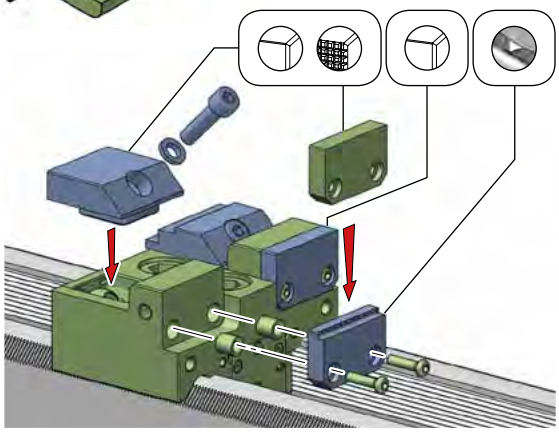
	AS25X125L50-105	
1	1x	TF140683
4	1x	M16x45 ISO 4762
	1x	M16x55 ISO 4762
19	2x	M8x20 ISO 4017
20	2x	ACD005
kg		~4,3
	AS2X125L50-105	
1	1x	TF140684
2	2x	
3	2x	M8x30 ISO 4762
4	2x	PCUSR 14
5	2x	M16x55 ISO 4762
6	2x	M5x10 ISO 4762
7	6x	M3x6 DIN 7991
8	2x	ACBL4243
9	6x	Ø 3x8 VSM 12785
10	2x	ACSP7620
11	2x	Ø 3h 8x12 ISO 2338
12	6x	FED0618
13	1x	ACSK7632M16
14	1x	FED Ø 5,5x39
15	2x	PCD005
16	2x	M5x14 ISO 4762
17	4x	Ø 6-Niro SM1275-3
18	2x	M8x16 ISO 4017
19	2x	M8x20 ISO 4017
20	2x	ACD005
21	2x	
22	4x	M5x20 ISO 4762
23	4x	Ø 5,2 ISO 4247
24	2x	M5x10 DIN 7991
25	2x	PCKMR45M8
26	4x	d=6 DIN 5401
27	2x	TS120001
kg		~4,5

powerCLAMP p. 84



	A
ACGGB103048	
*ACWB103048	
ACPB103048	

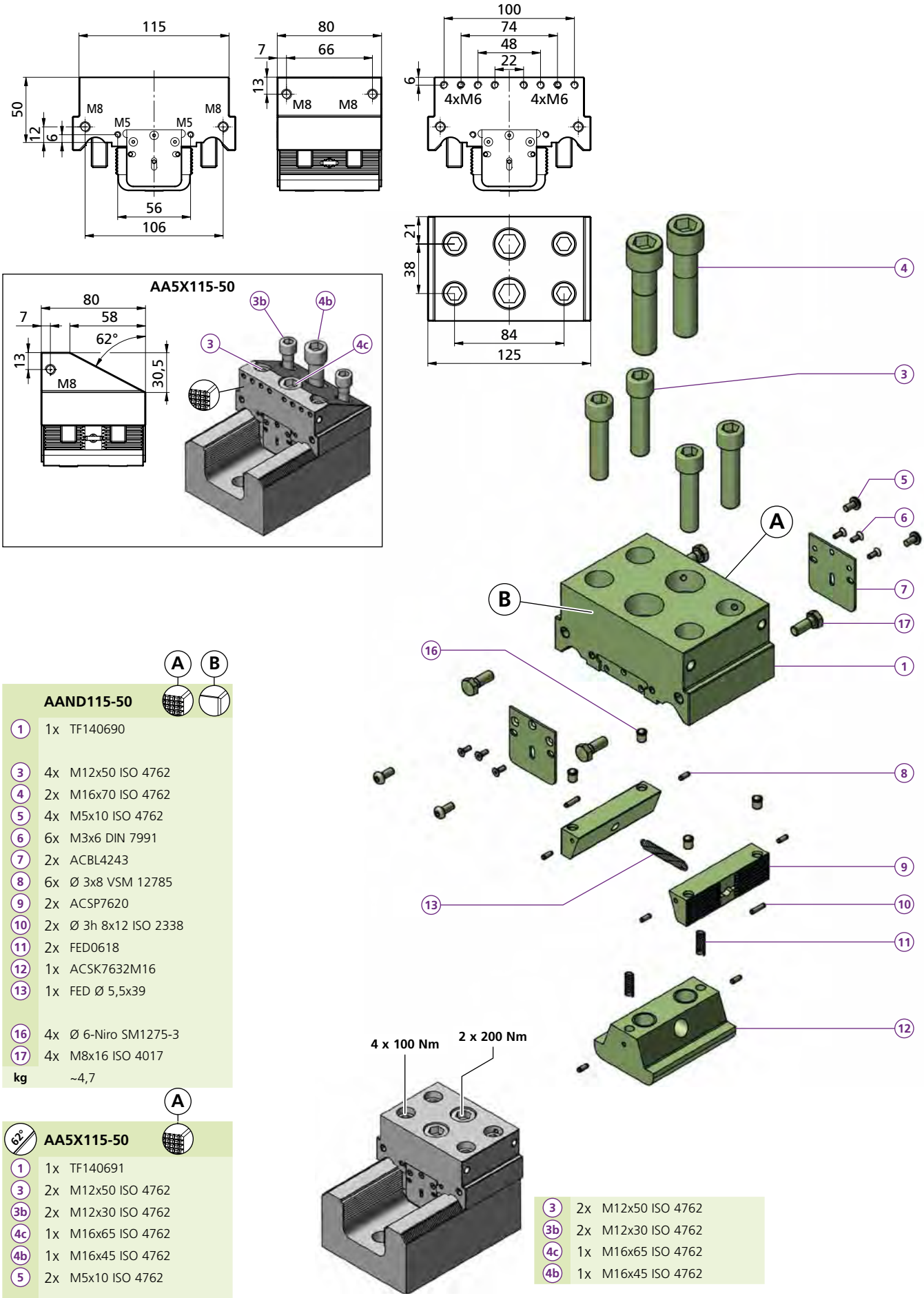
ACWB103048	ACPB103048
	



Bestellbeispiel / *Ordering example:*
1x AS2X125L50-150 & 2x B105 & 2x ACGGB103048

* = weich / *soft*

AAND115-50
AA5X115-50

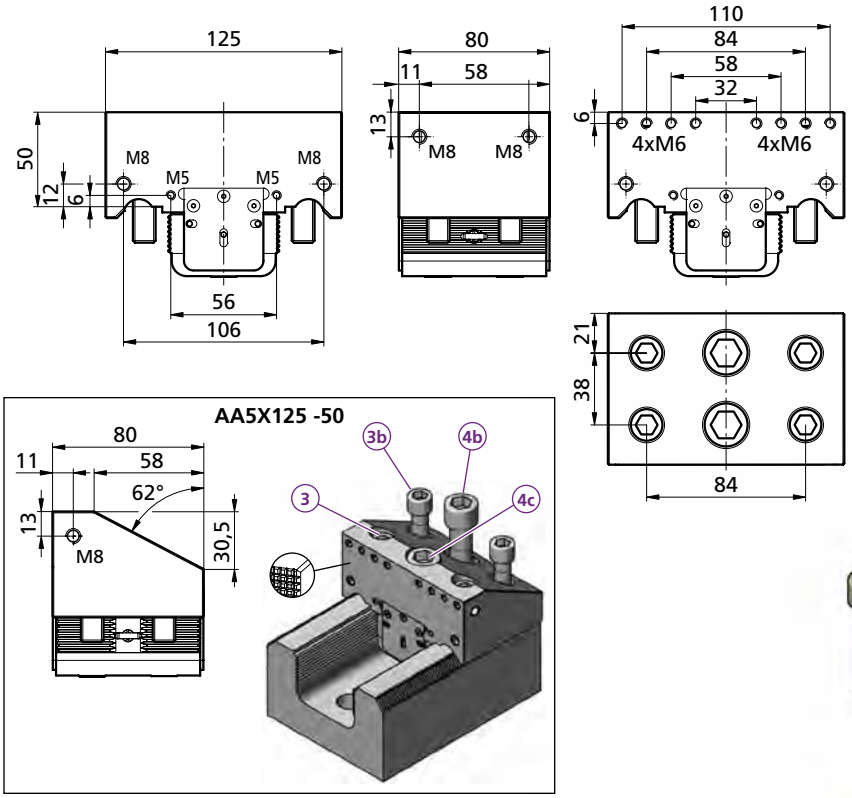


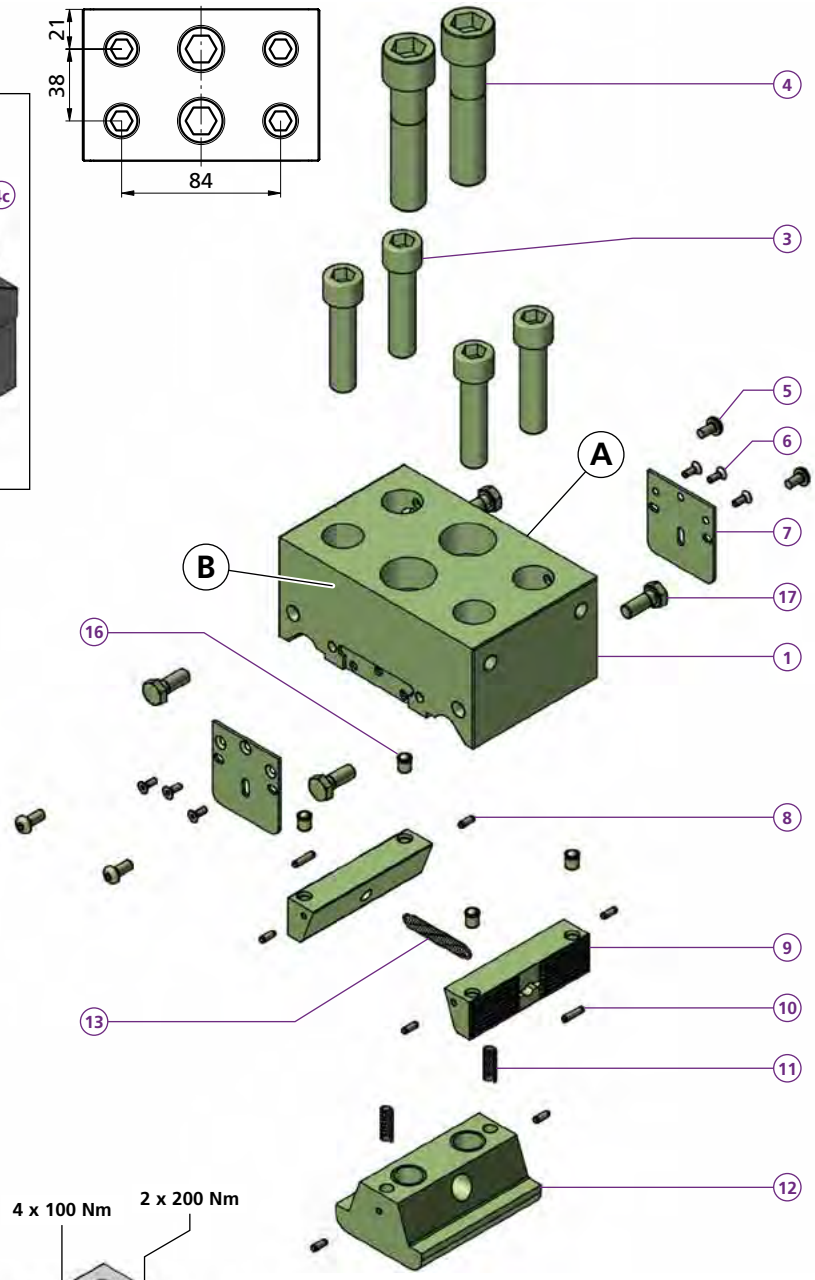
		A	B
	AAND115-50		
1	1x TF140690		
3	4x M12x50 ISO 4762		
4	2x M16x70 ISO 4762		
5	4x M5x10 ISO 4762		
6	6x M3x6 DIN 7991		
7	2x ACBL4243		
8	6x Ø 3x8 VSM 12785		
9	2x ACSP7620		
10	2x Ø 3h 8x12 ISO 2338		
11	2x FED0618		
12	1x ACSK7632M16		
13	1x FED Ø 5,5x39		
16	4x Ø 6-Niro SM1275-3		
17	4x M8x16 ISO 4017		
kg	~4,7		

		A
62°	**AA5X115-50**	
1	1x TF140691	
3	2x M12x50 ISO 4762	
3b	2x M12x30 ISO 4762	
4c	1x M16x65 ISO 4762	
4b	1x M16x45 ISO 4762	
5	2x M5x10 ISO 4762	
17	2x M8x16 ISO 4017	
kg	~4,6	

3	2x M12x50 ISO 4762
3b	2x M12x30 ISO 4762
4c	1x M16x65 ISO 4762
4b	1x M16x45 ISO 4762

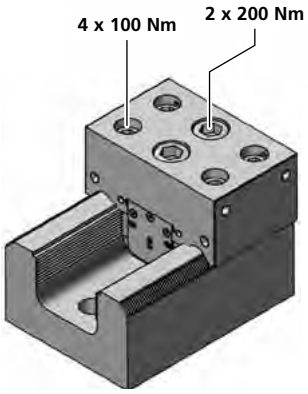
Bestellbeispiel / *Ordering example*: AAND115-50



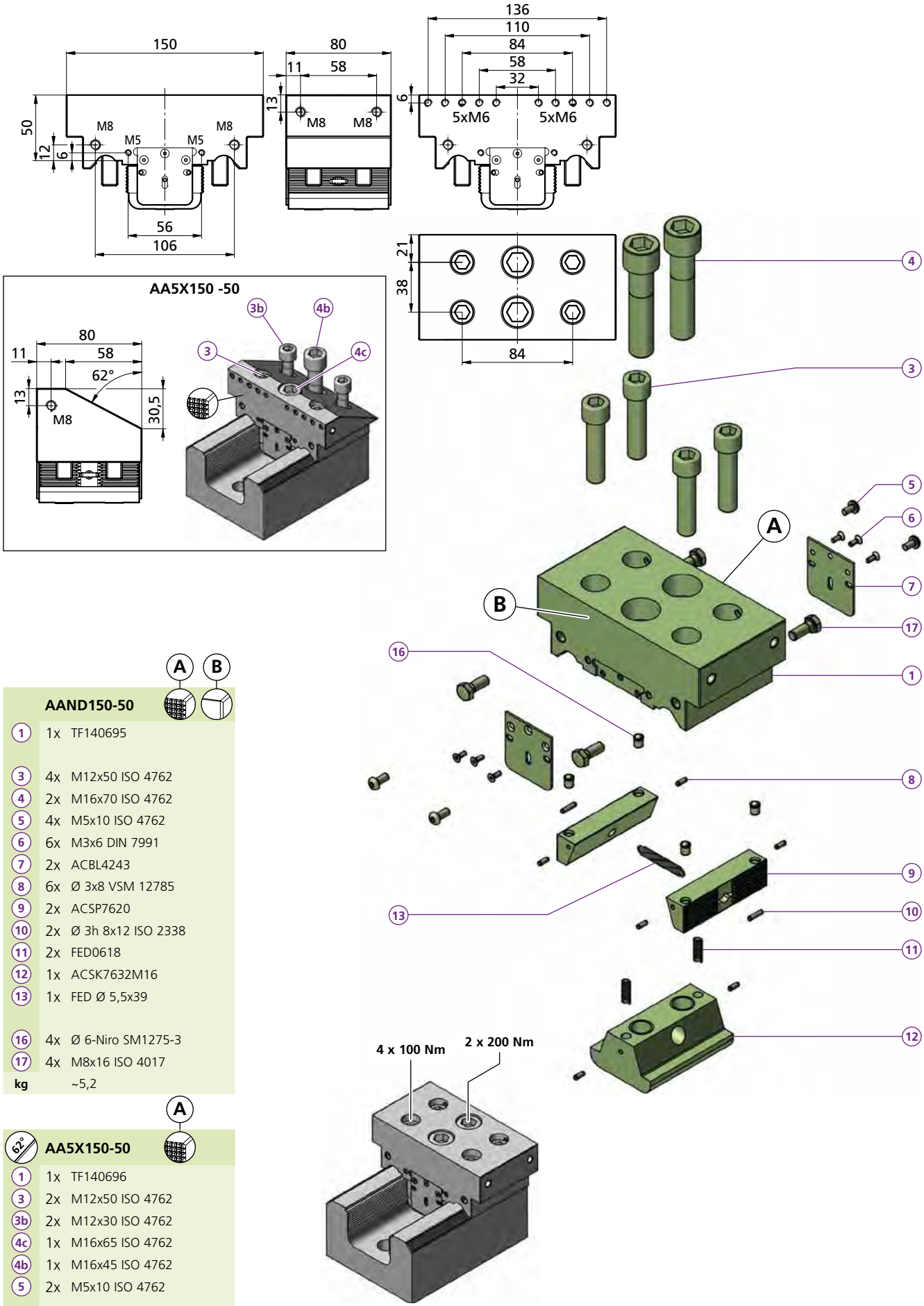


	AAND125-50	A	B
1	1x TF140692		
3	4x M12x50 ISO 4762		
4	2x M16x70 ISO 4762		
5	4x M5x10 ISO 4762		
6	6x M3x6 DIN 7991		
7	2x ACBL4243		
8	6x Ø 3x8 VSM 12785		
9	2x ACSP7620		
10	2x Ø 3h 8x12 ISO 2338		
11	2x FED0618		
12	1x ACSK7632M16		
13	1x FED Ø 5,5x39		
16	4x Ø 6-Niro SM1275-3		
17	4x M8x16 ISO 4017		
kg	~4,8		

62°	AA5X125-50	A
1	1x TF140693	
3	2x M12x50 ISO 4762	
3b	2x M12x30 ISO 4762	
4c	1x M16x65 ISO 4762	
4b	1x M16x45 ISO 4762	
5	2x M5x10 ISO 4762	
17	2x M8x16 ISO 4017	
kg	~4,6	



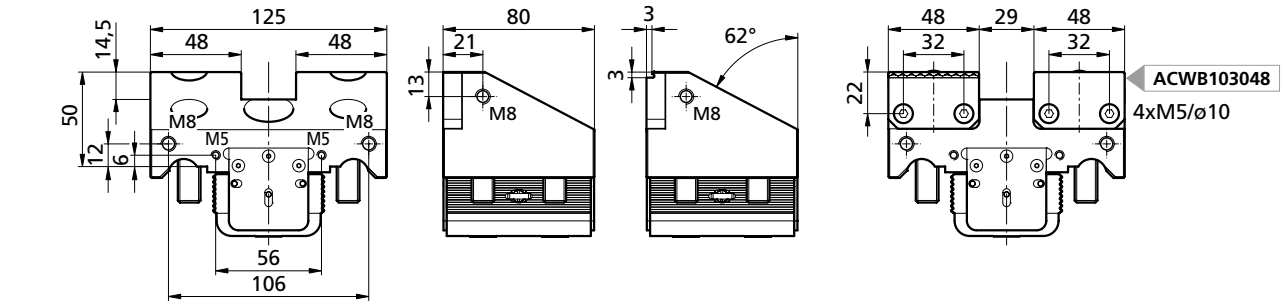
Bestellbeispiel / *Ordering example*: AAND125-50

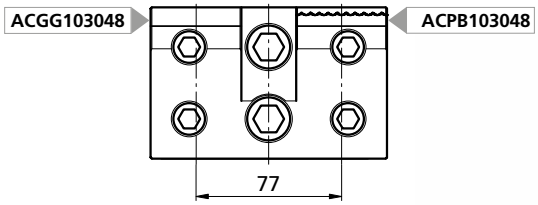


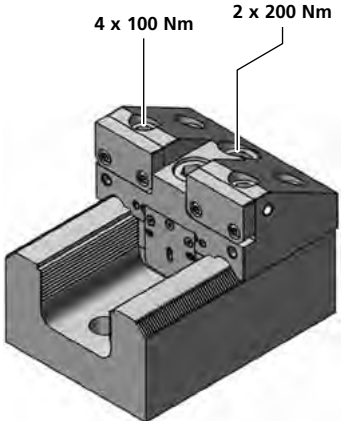
	AAND150-50	A	B
1	1x TF140695		
3	4x M12x50 ISO 4762		
4	2x M16x70 ISO 4762		
5	4x M5x10 ISO 4762		
6	6x M3x6 DIN 7991		
7	2x ACBL4243		
8	6x Ø 3x8 VSM 12785		
9	2x ACSP7620		
10	2x Ø 3h 8x12 ISO 2338		
11	2x FED0618		
12	1x ACSK7632M16		
13	1x FED Ø 5,5x39		
16	4x Ø 6-Niro SM1275-3		
17	4x M8x16 ISO 4017		
kg	~5,2		

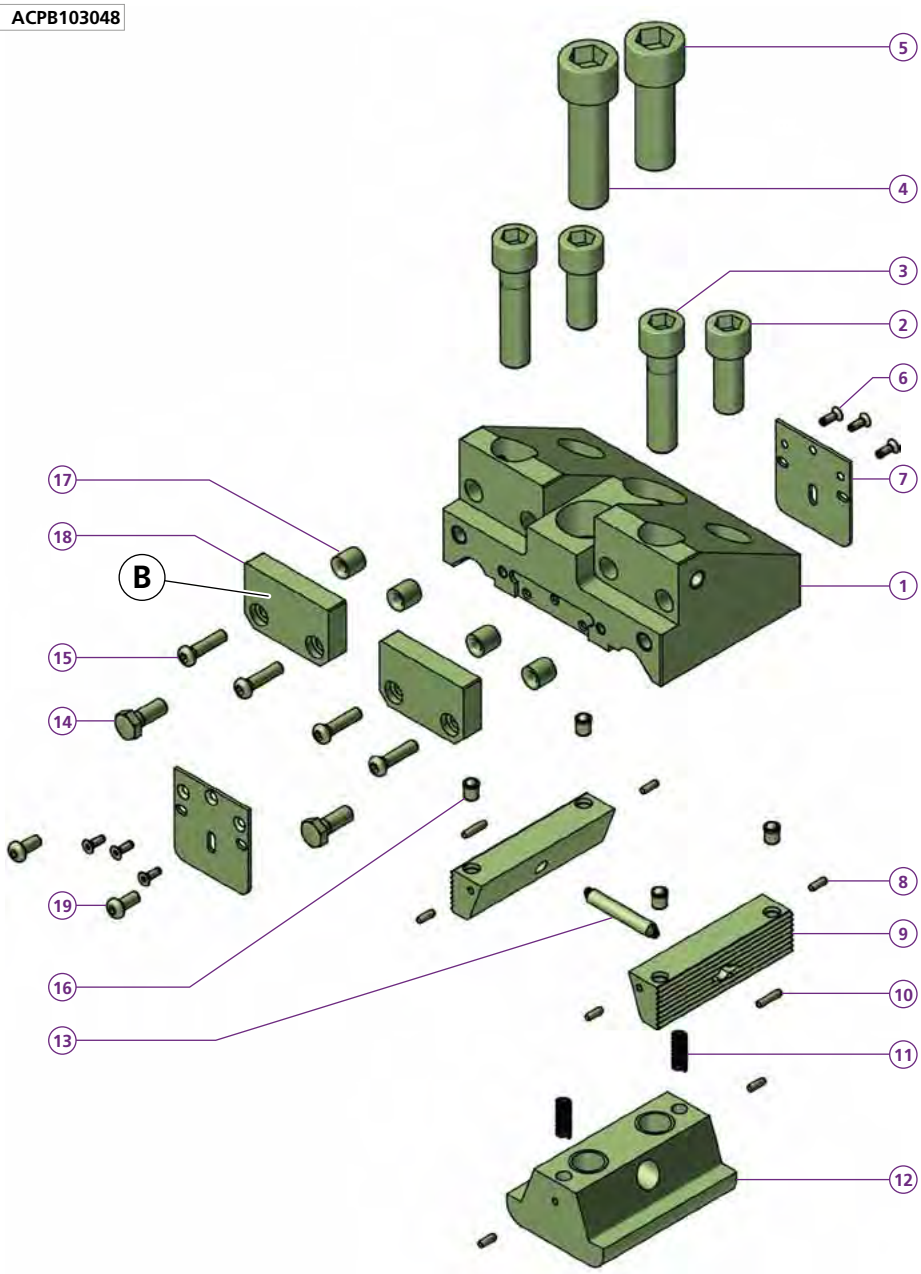
	AA5X150-50	A
1	1x TF140696	
3	2x M12x50 ISO 4762	
3b	2x M12x30 ISO 4762	
4c	1x M16x65 ISO 4762	
4b	1x M16x45 ISO 4762	
5	2x M5x10 ISO 4762	
17	2x M8x16 ISO 4017	
kg	~5,0	

Bestellbeispiel / *Ordering example*: AAND150-50









62°	AA5X125-50VB
1	1x TF140694
2	2x M12x30 ISO 4762
3	2x M12x50 ISO 4762
4	1x M16x55 ISO 4762
5	1x M16x45 ISO 4762
6	6x M3x6 DIN 7991
7	2x ACBL4243
8	6x Ø 3x8 VSM 12785
9	2x ACSP7620
10	2x Ø 3h 8x12 ISO 2338
11	2x FED0618
12	1x ACSK7632M16
13	1x FED Ø 5,5x39
14	2x M8x16 ISO 4017
15	4x M5x20 ISO 4762
16	4x Ø 6-Niro SM1275-3
17	4x 5,2x10x10 DIN179-A
18	2x
19	2x M5x10 ISO 4762
kg	~4,5

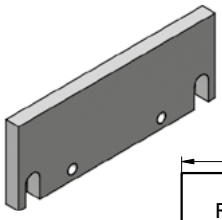
A	
ACGGB103048	
*ACWB103048	
ACPB103048	

ACWB103048	ACPB103048
	

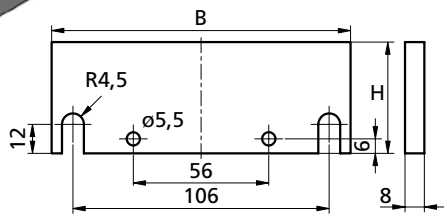
* = weich / *soft*

Bestellbeispiel / *Ordering example*:
1x AA5X125-50VB & 2x ACGGB103048

Parallelunterlage
Steel parallels

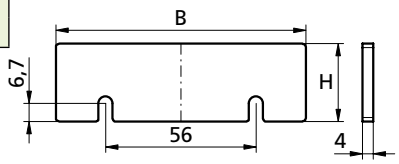


124mm	B	H	kg
ACU21124	124	21	~0,138
ACU36124	124	36	~0,250
ACU41124	124	41	~0,294
ACU46124	124	46	~0,328

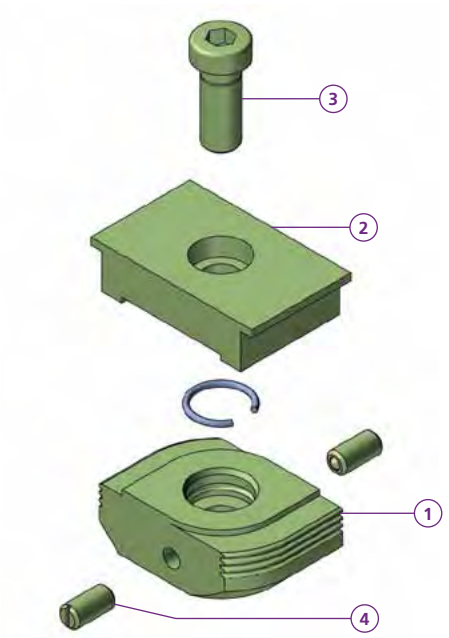


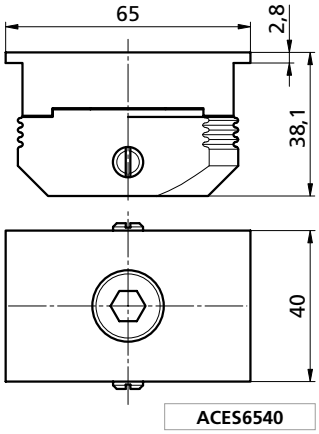
94mm	B	H	kg
PCU14093	93	14	~0,04
PCU20093	93	20	~0,06
PCU24093	93	24	~0,07
PCU29093	93	29	~0,09
PCU31093	93	31	~0,09
PCU34093	93	34	~0,10
PCU39093	93	39	~0,11
PCU44093	93	44	~0,12
PCU46093	93	46	~0,14

125mm	B	H	kg
PCU20124	124	20	~0,08
PCU24124	124	24	~0,09
PCU29124	124	29	~0,11
PCU31124	124	31	~0,12
PCU34124	124	34	~0,13
PCU39124	124	39	~0,15
PCU44124	124	44	~0,17

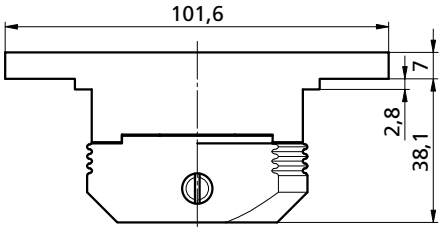


Universalnutenstein
Universal nut

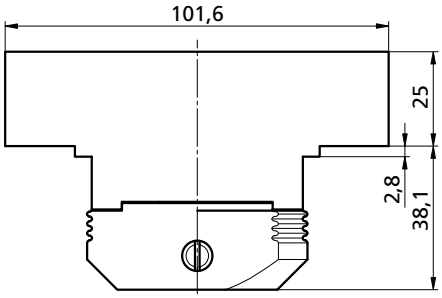




ACES6540



ACES10240H07

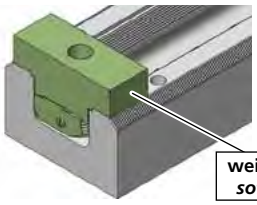


ACES10040H25W

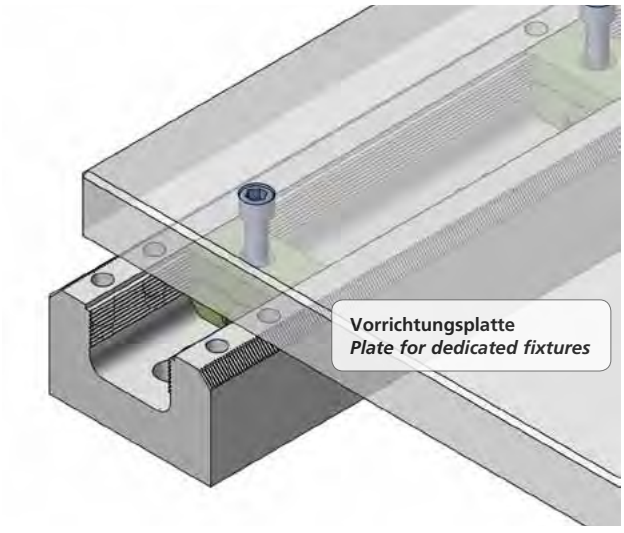
ACES6540		
1	1x	ACZS6540
2	1x	ACEL6540
3	1x	M12x30 DIN7984
4	2x	SM1275-1KSM8
kg		~ 0,67

ACES10240H07		
1	1x	ACZS6540
2	1x	ACEL6540-07102
3	1x	M12x30 DIN7984
4	2x	SM1275-1KSM8
kg		~ 0,88

ACES10040H25W		
1	1x	ACZS6540
2	1x	ACEL10040H25W
3	1x	M12x30 DIN7984
4	2x	SM1275-1KSM8
kg		~ 1,42

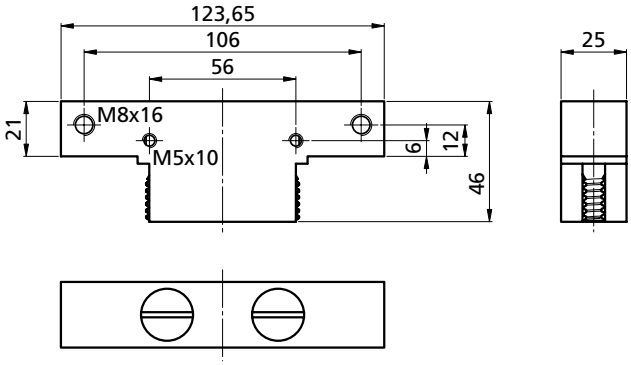


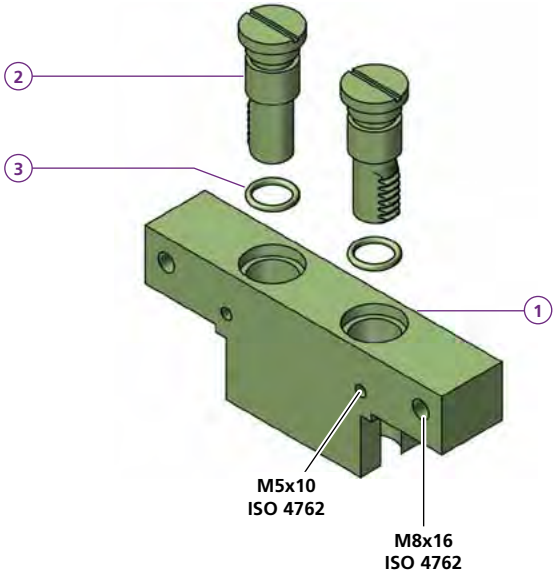
weich *soft*	1.2312



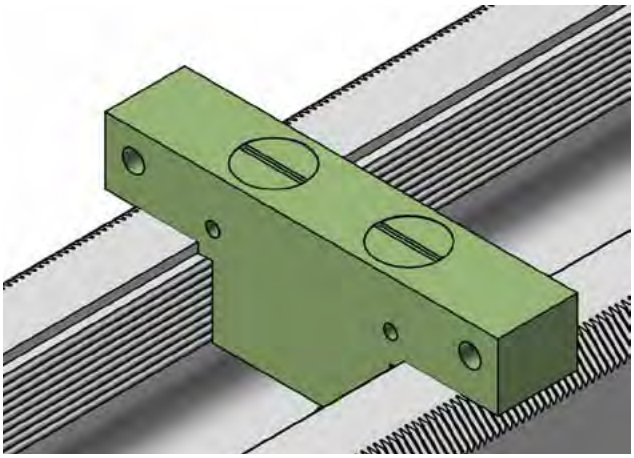
Bestellbeispiel / *Ordering example*: ACES6540

Universal - Unterlagenhalter
Universal holder for steel parallels





	ACUH21-124
1	1x TW090086-02
2	2x ACBS 1646
3	2x OR Ø 12X2
kg	~ 0,74



Bestellbeispiel / *Ordering example:* ACUH21-124

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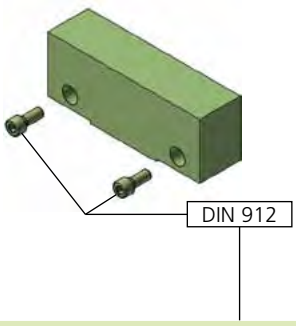
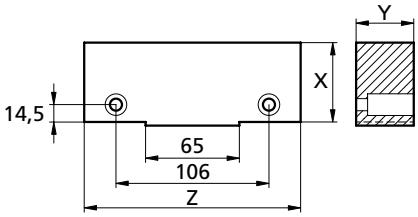
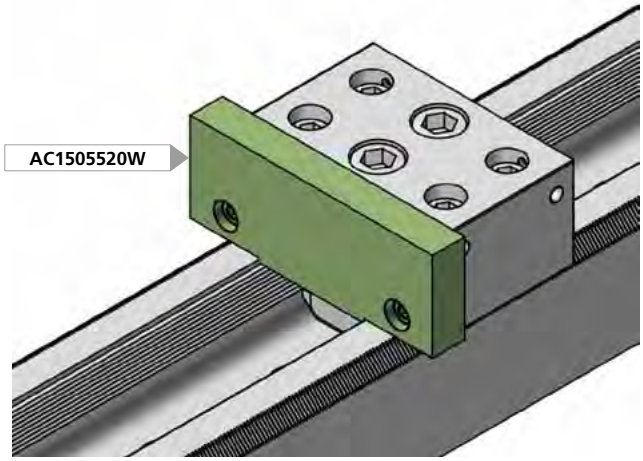
weiche Backe
soft jaw





		X	Y	Z	kg
AC1505520W	M8x20	55	20	150	~ 1,28
AC1505540W	M8x20	55	40	150	~ 2,55



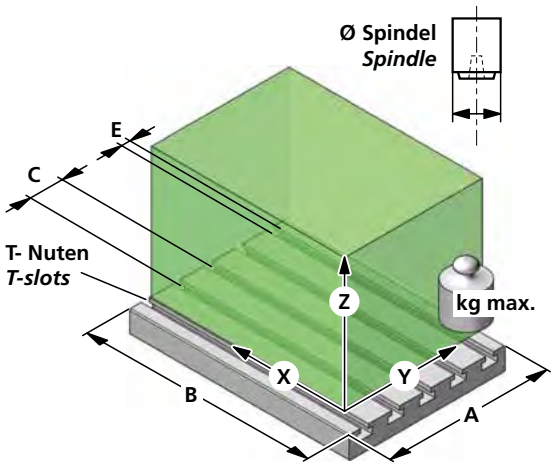
Bestellbeispiel / *Ordering example*: AC1505520W

Maschinenplan für Angebot
Machines plan for offer

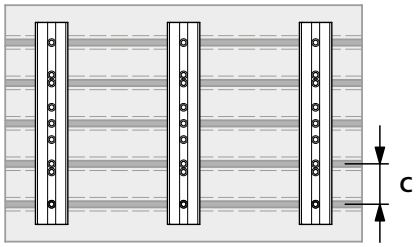
VERTICAL

Kunde ***Customer***				
Maschine ***Machine***		Werkstoff, Halbzeug, Rohteil-Nr., Modell- oder Gesenk-Nr. *Raw material, blank or casting-Nr.*		
X	Verfahrweg *Traverse*			**mm**
Y	Verfahrweg *Traverse*			**mm**
Z	Verfahrweg *Traverse*			**mm**
Z min.	kleinster Abstand von der Tischoberfläche zur Spindelnase *smallest distance from table surface to spindle gauge line*			**mm**
Z max.	grösster Abstand von der Tischoberfläche zur Spindelnase *greatest distance from table surface to spindle gauge line*			**mm**
Ø Spindel ***Spindle***	Spindeldurchmesser *Spindle diameter*			**mm**
kg max.	Maximale Tischbelastung *Maximum loading capacity*			**kg**
A x B	Tischgrösse *Size of the table*			**mm**
E	T-Nuten Grösse *T-slots size*			**mm**
C	T-Nuten Abstand *T-slots distance*			**mm**
Rasterplatte ***Grid plate***	**H** Raster Abstand *Grid distance*	**mm**	**G** Gewinde & Passungsdurchmesser **Ø** *Thread & Precision Bohre*	
	Anzahl Werkstücke pro Los *Number of workpieces per lot*			**Stück** ***Pieces***

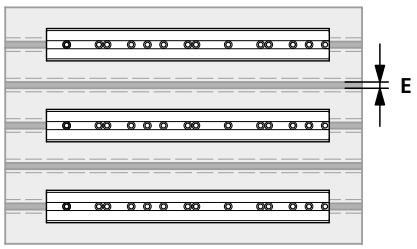
Maximal mögliche Bearbeitungsgrösse



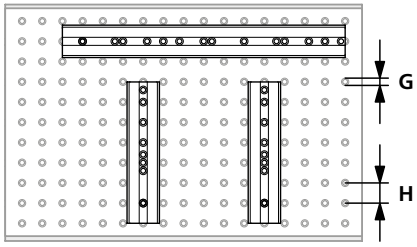
Montage der PC-Basisschiene auf dem Maschinentisch
Assembly of the PC base-rail on the machine table



1
Positionierung der Basisschiene quer zur Nute
Positioning of the base-rail crosswise to the nut



2
Positionierung der Basisschiene längs zur Nute
Positioning of the base-rail lengthwise to the nut



3
Positionierung der Basisschiene auf einer Rasterplatte
Positioning of the base-rail on a grid plate

Bitte Werkstückzeichnung beilegen und Bearbeitungsfolge markieren
Enclose drawing of workpiece and mark processing sequence, please