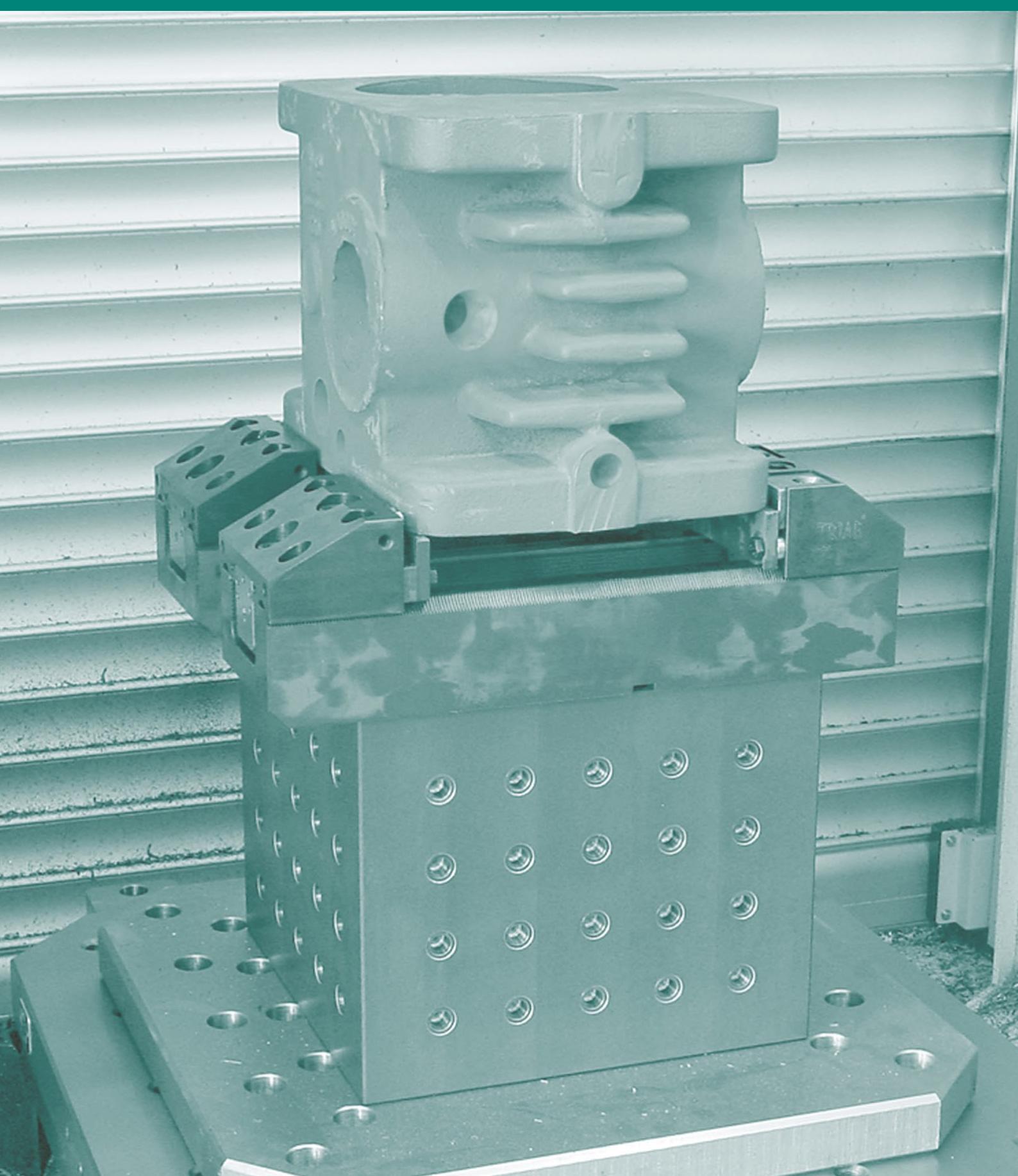
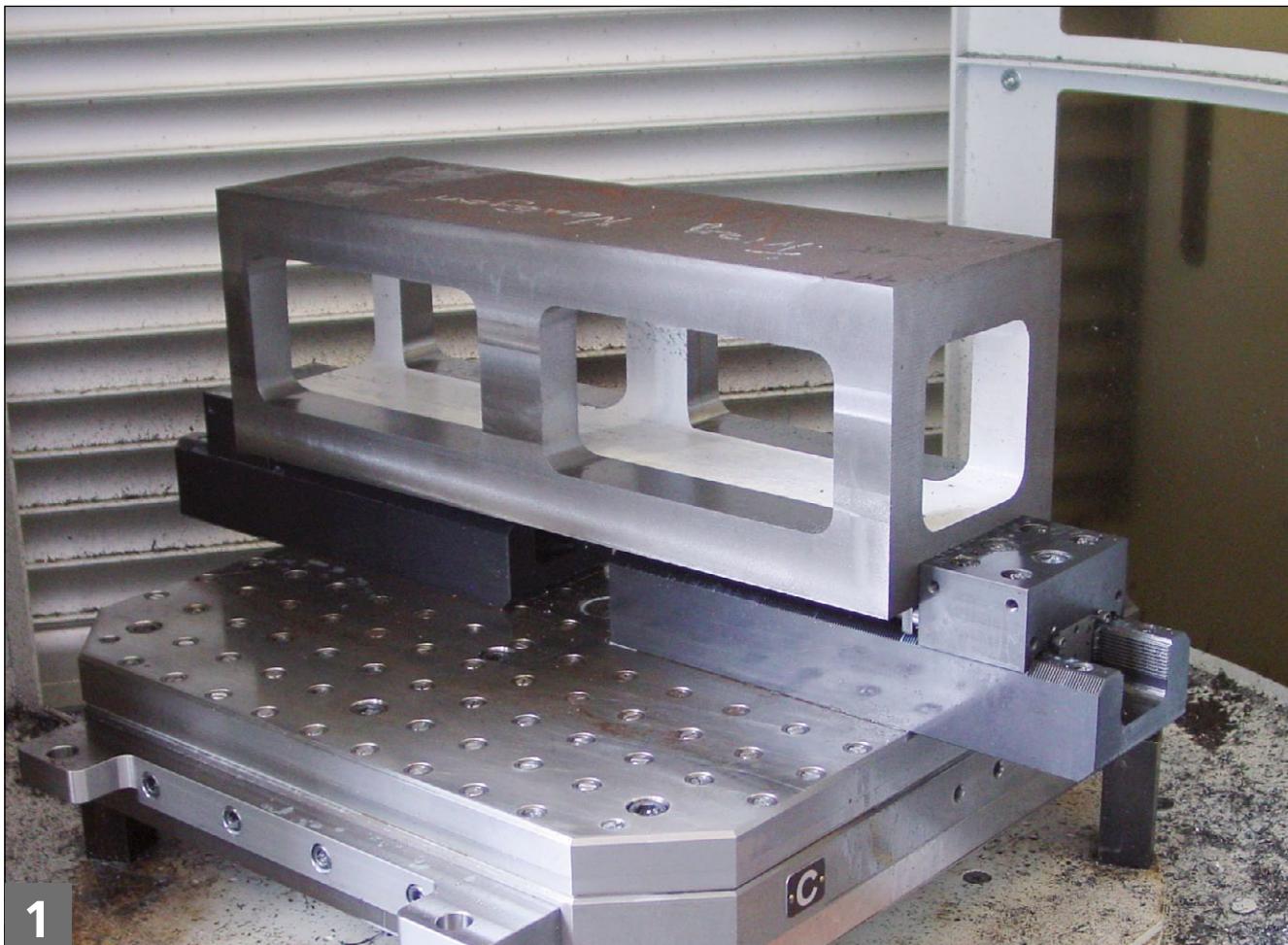


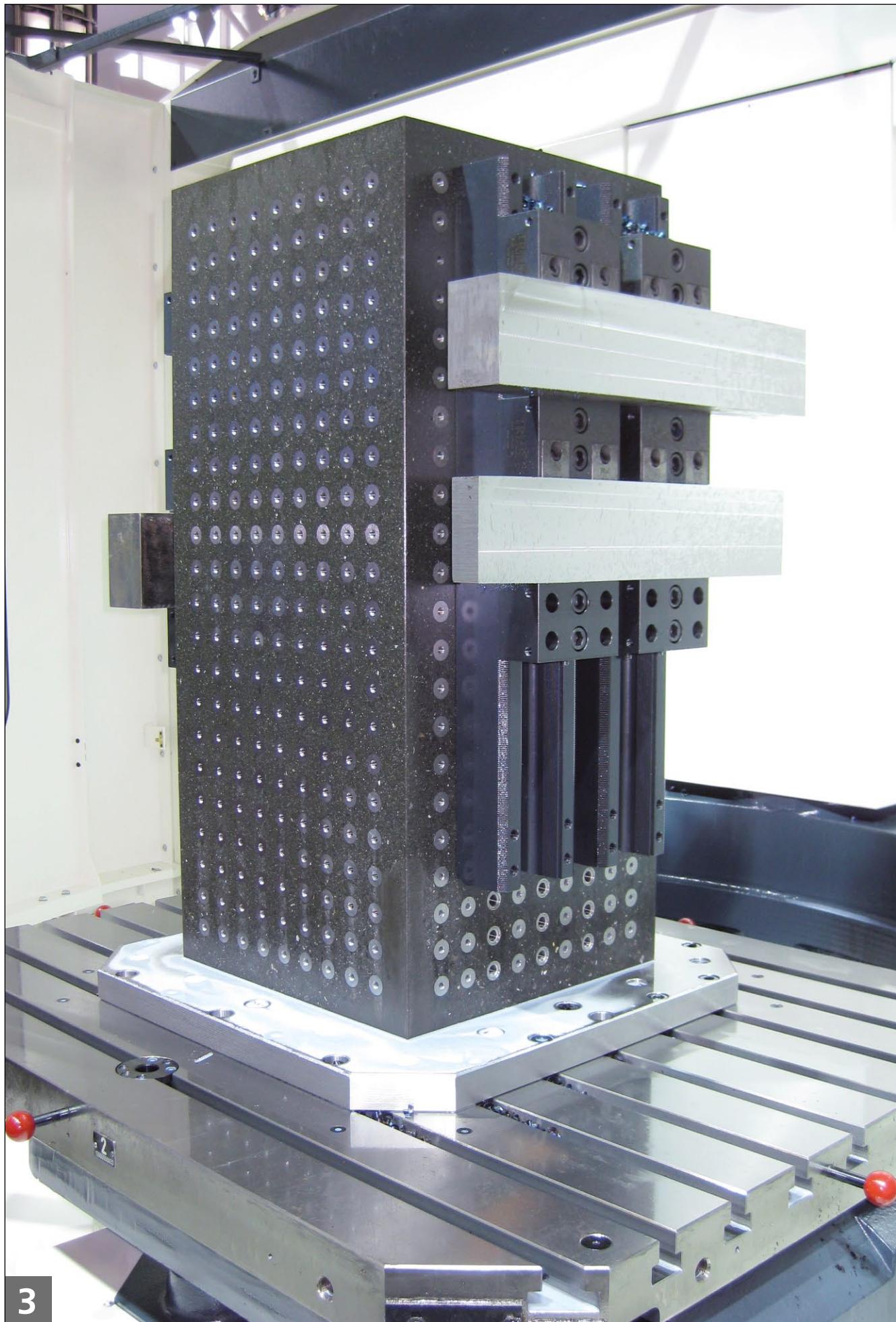


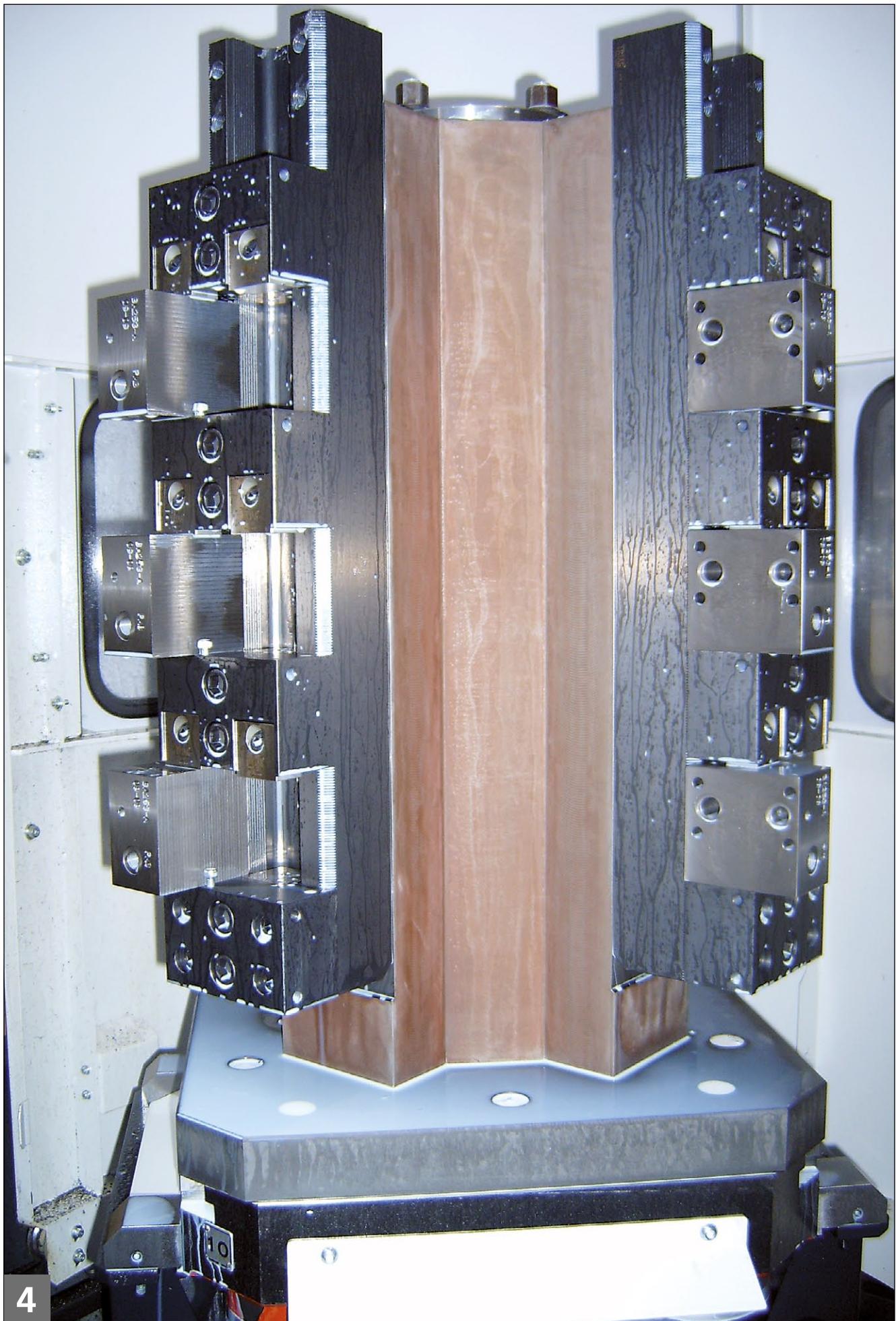
# *aptoclamp*

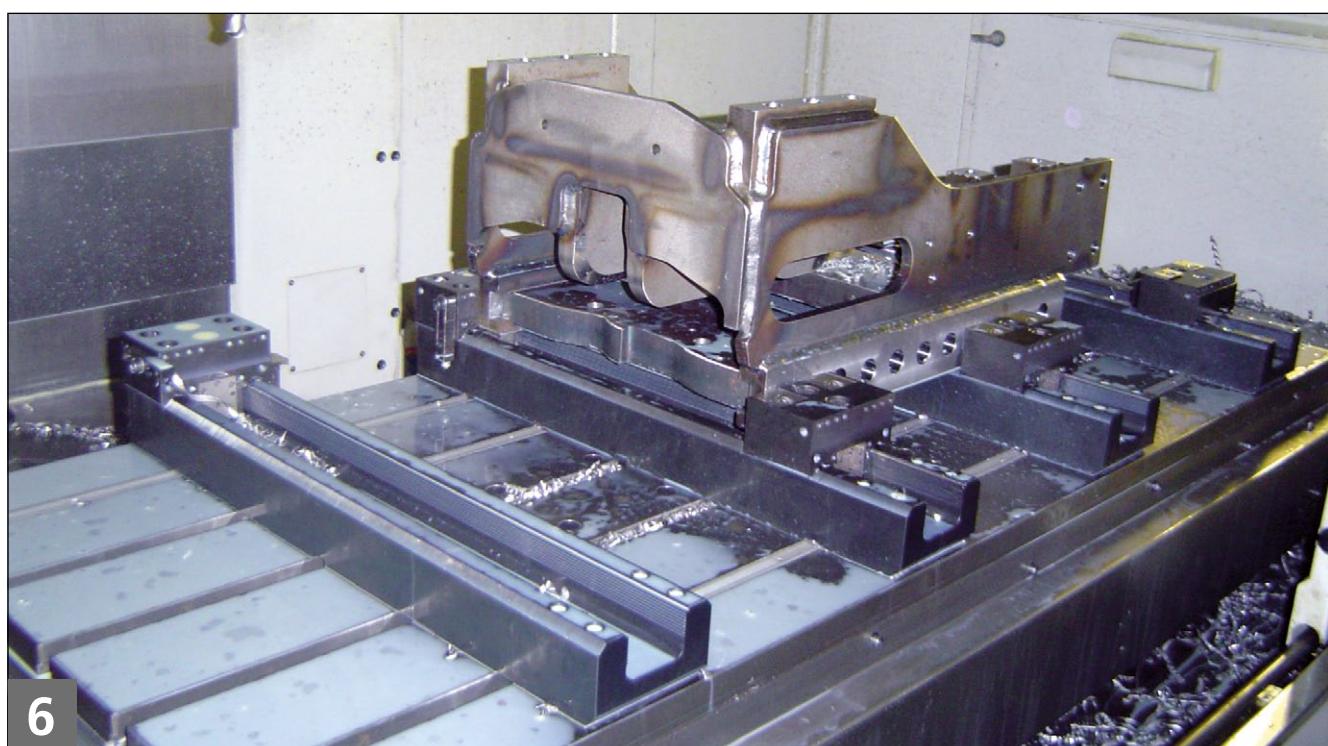
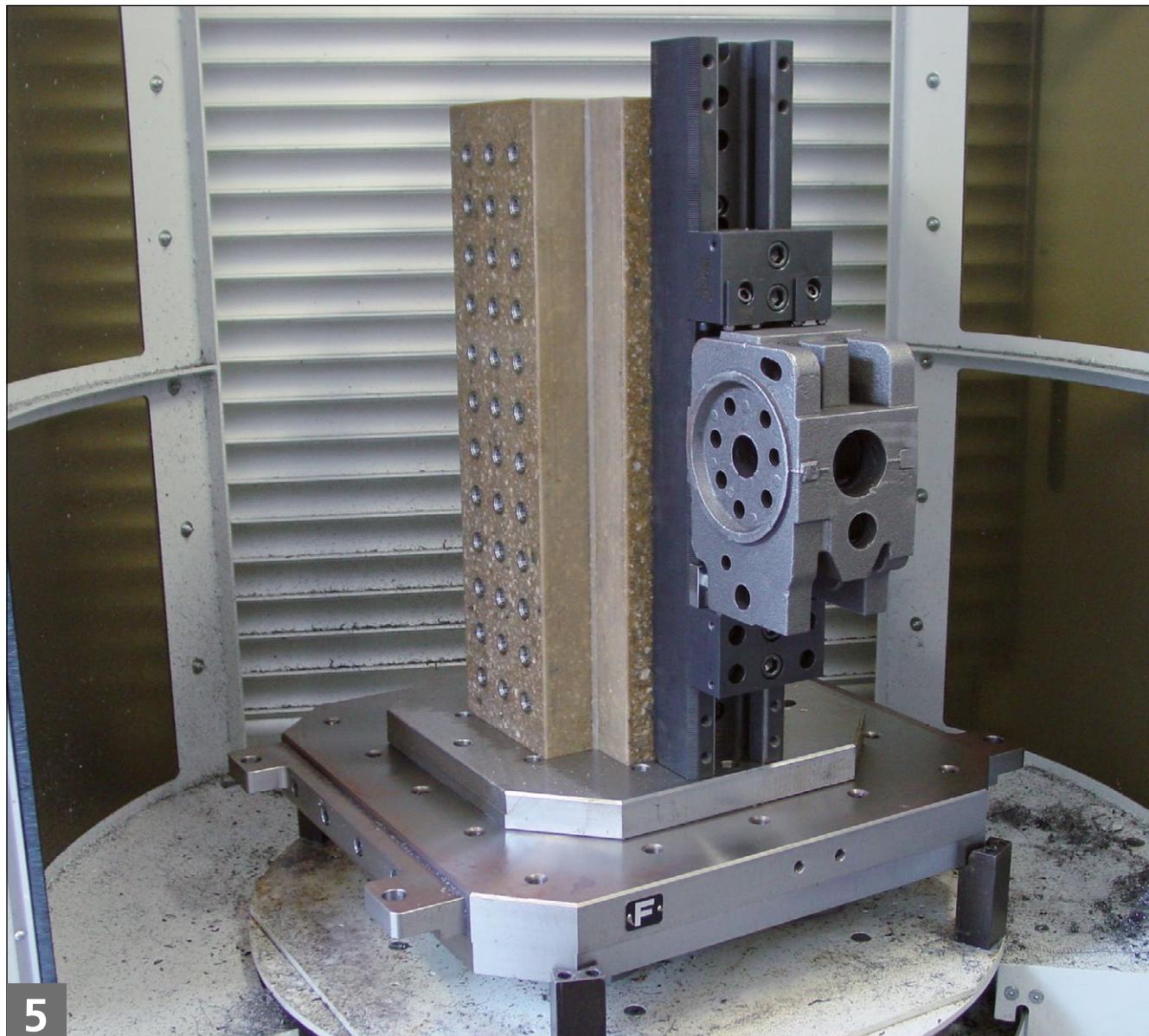
## & 5axes aptoCLAMP





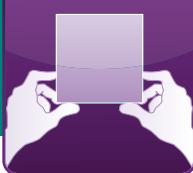








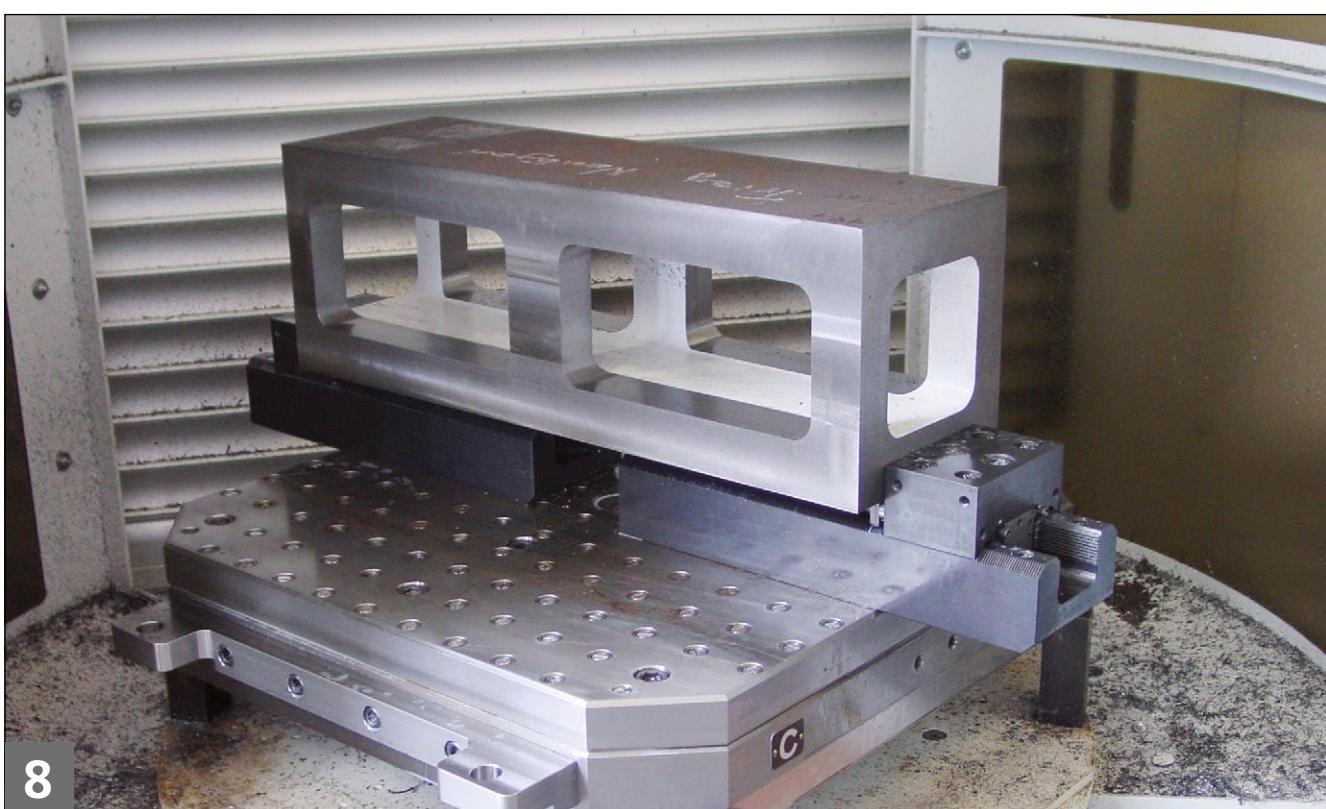
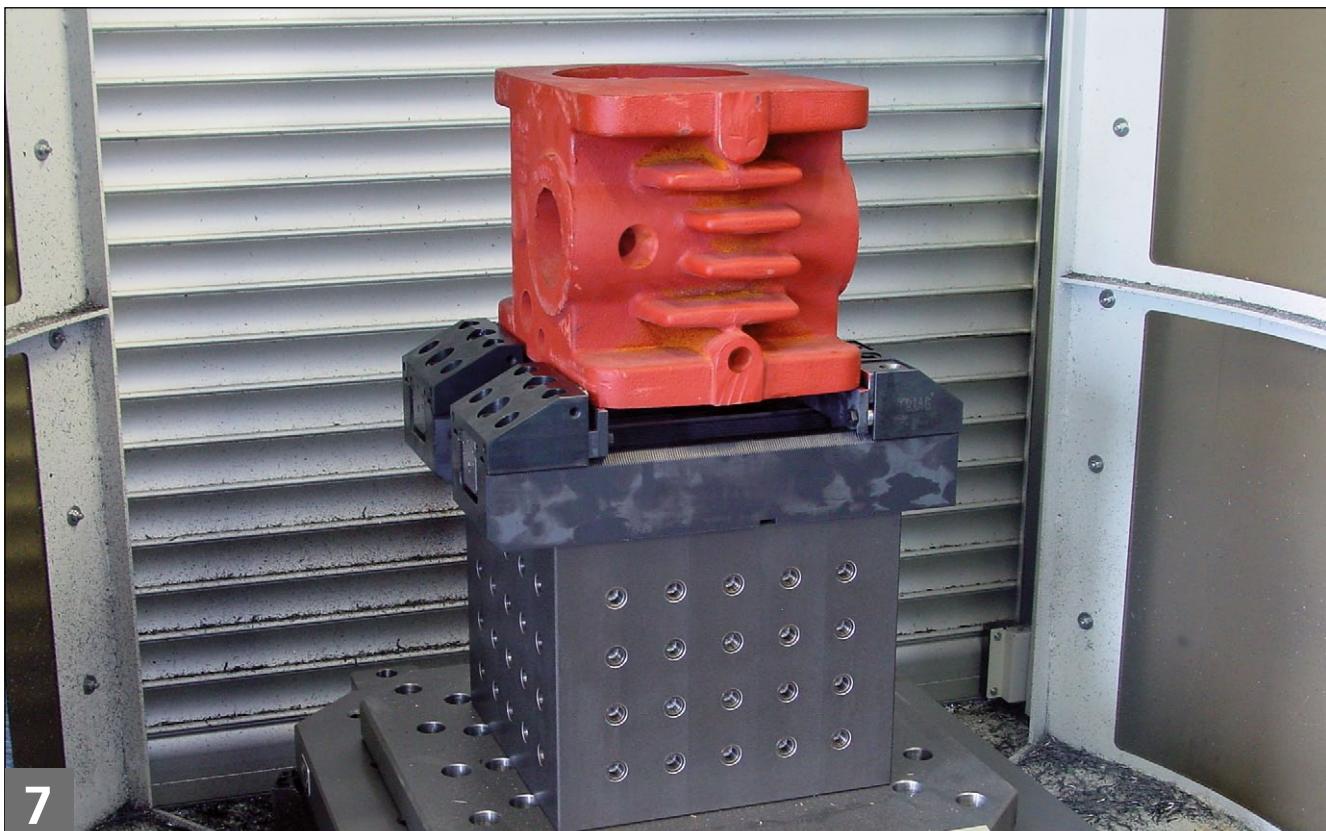
## 5axes aptoCLAMP



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 7000daN (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 7000daN (7 tons) clamping force and are recommended for heavy roughing workholding.*

En complément un module Apto Clamp en exécution biseautée. De ce fait l'accès vers la pièce à usiner est optimal et garanti avec les machines à 5 axes. Ces modules de serrages produisent jusqu'à 7000daN (7 tonnes) de force de serrage et sont recommandés pour des usinages lourds.





**Die hohe Spannkraft dieses Systems ermöglicht den Einsatz für schwere Zerspanung**

*The high clamping force of the Apto Clamp enables heavy cuts*

*La grande force de serrage de ce système rend sa mise en service possible*



**1.**

Zwei Schrauben lösen  
*Loosen two screws*  
*Desserrer les deux vis*



**2.**

Abheben und neu platzieren  
*Lift and change position*  
*Enlever et repositionner le module*



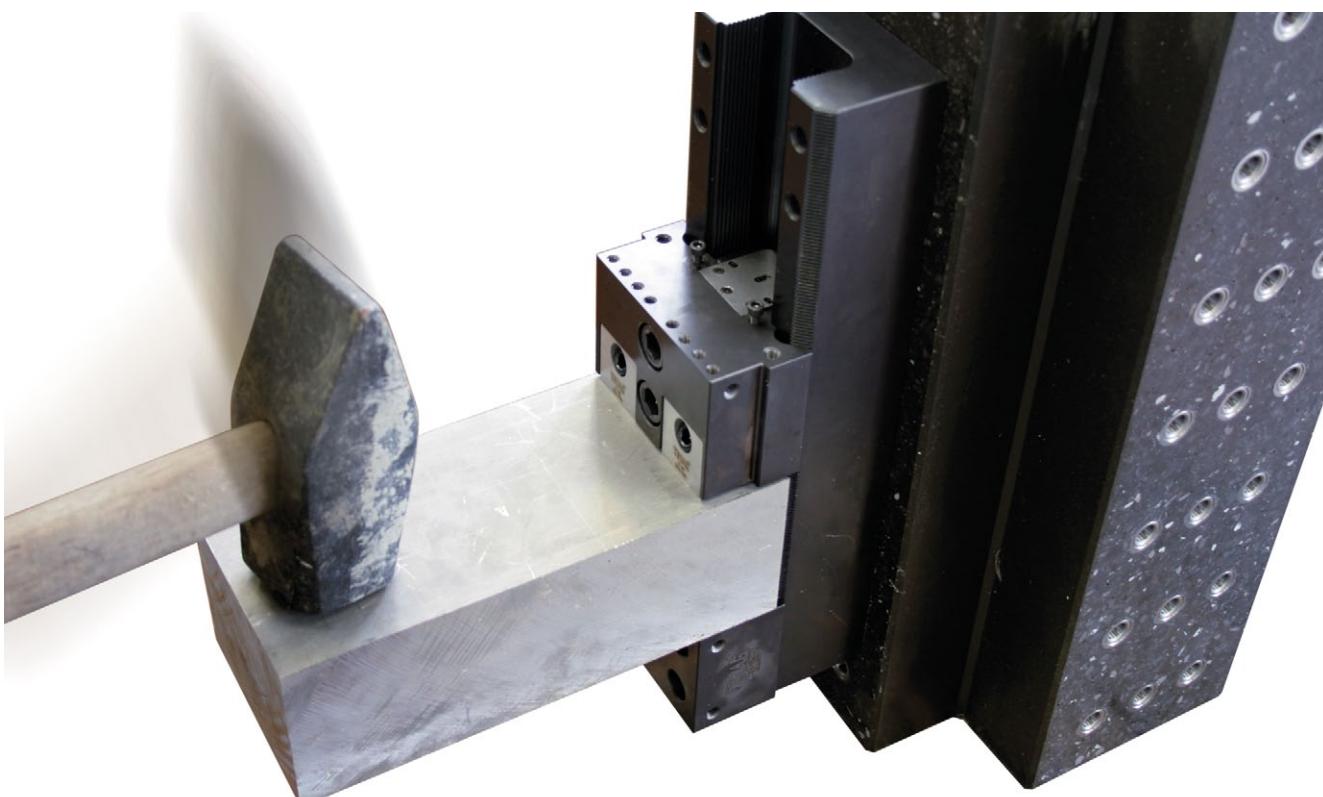
**3.**

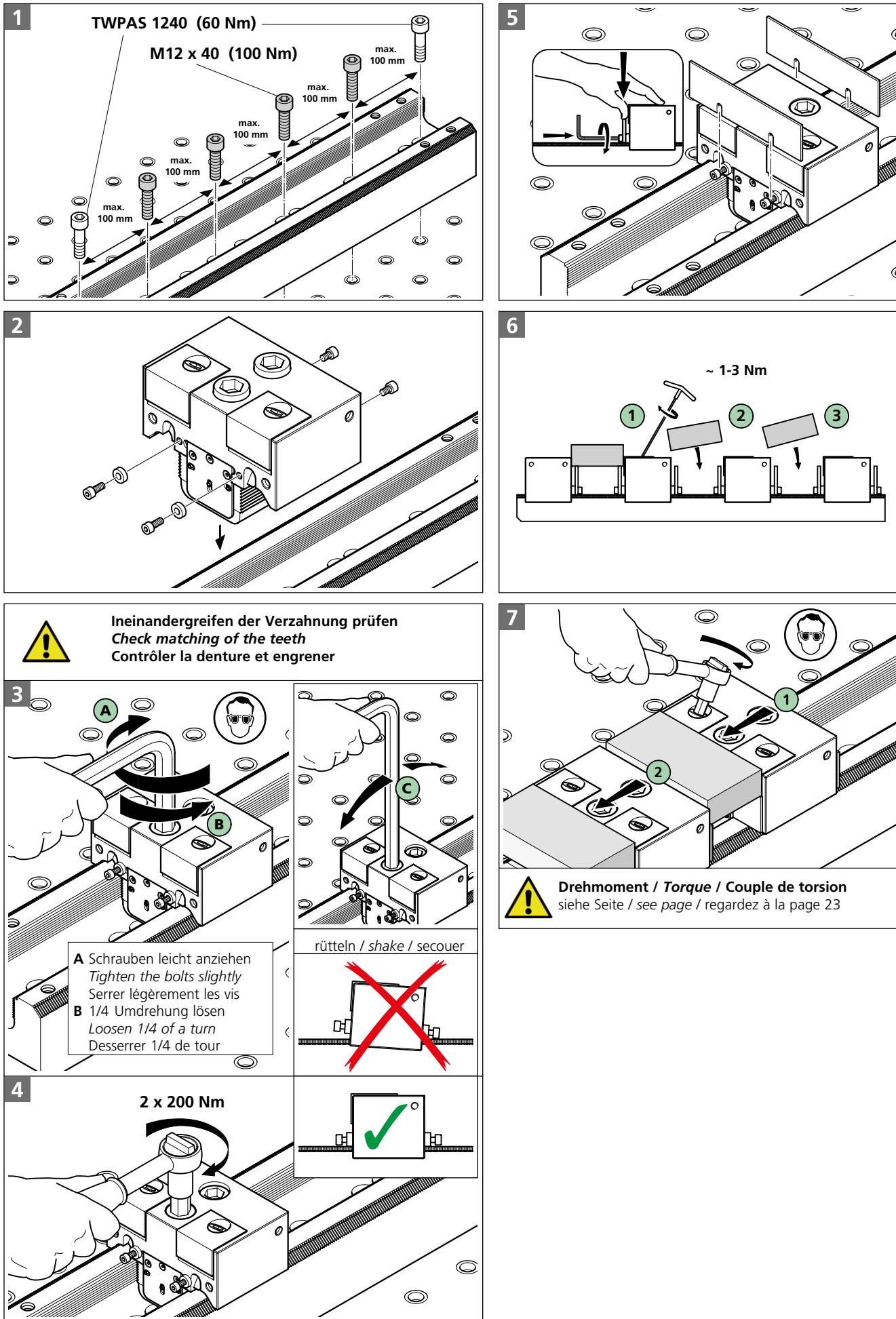
Zwei Schrauben anziehen  
*Fasten two screws*  
*Serrer les deux vis*

Beim Apto Clamp ermöglicht eine Verzahnung mit 2 mm Teilung auf der Basisschiene ein schnelles und genaues Positionieren der Spann- und Anschlagmodule. Die herausragende Weiterentwicklung besteht darin, dass durch gezielte elastische Deformation einer Lippe die spielfreie Paarung erfolgt. Spann- und Bearbeitungskräfte werden einerseits an der ebenen, robusten Oberseite der Basisschiene aufgenommen, während andererseits das Spannmodul durch einen spreizenden Keil mit robustem Rundgewindeprofil in der Schiene verankert wird. Das Einfügen zusätzlicher Module zwischen bestehenden Spannstellen ist problemlos möglich. Apto Clamp ist die konsequente Weiterentwicklung von powerCLAMP zur Bearbeitung noch größerer Werkstücke.

*With the new Apto Clamp a serration of 2 mm pitch on the base rail allows a rapid and accurate positioning of the modules. 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. The insertion of additional vice modules can be accomplished without problems. Apto Clamp is the logical development of powerCLAMP to handle even larger work pieces.*

Avec Apto Clamp il est possible de poser rapidement et précisément les modules de serrage et modules d'appui, grâce à sa denture avec une division de 2 mm. Le développement se distingue par déformation élastique d'une lèvre, ce fait garantit un accouplement sans jeu entre module et rail de base. Tout au pluriel ou tout au singulier d'usinage sont concentrés dans la robuste partie supérieure du rail de base, tandis que l'autre partie est fixée dans le rail au moyen d'une ancre expansive qui s'engage dans le profil rond du rail de base. L'insertion et le positionnement des modules de serrage additionnels ne pose aucun problème. Apto Clamp est le développement logique du powerCLAMP afin d'avoir la possibilité d'usiner des pièces encore plus grandes.







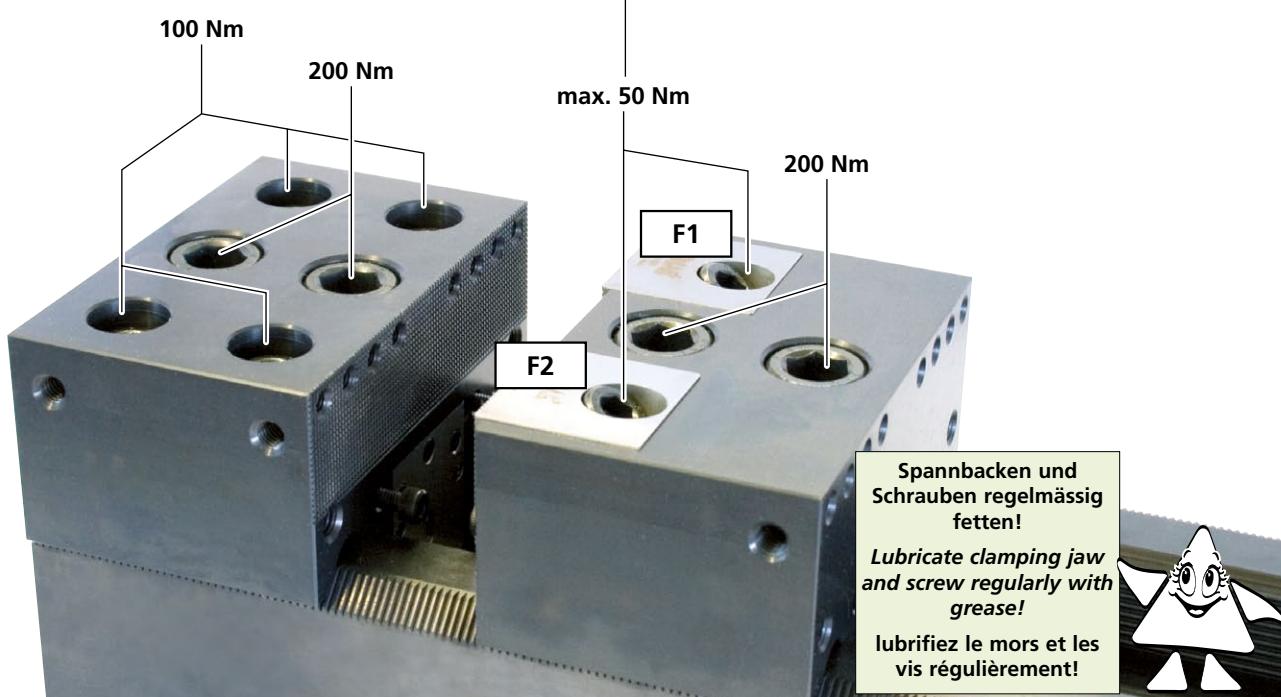
# ACHTUNG / CAUTION / ATTENTION

**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.

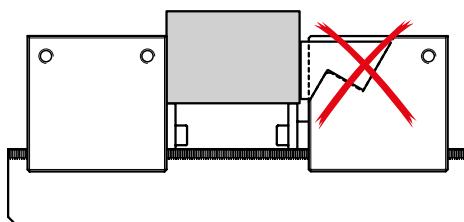
**IMPORTANT:** Les valeurs des couples de torsion mentionnés sont les valeurs maximales absolues. Pour les forces de serrage vous pouvez vous référer à la tabelle ci-dessous.

Schraube Screw Vis	Drehmoment max. Torque max. Couple de torsion max.		Spannkraft (F1+F2) max. Workholding force (F1+F2) max. Force de serrage (F1+F2) max.		
	Nm	(lb·ft)	daN	(lb)	t
<b>M10</b>	10	7,3	1200	2'666	1,2
	20	14,7	2700	6'000	2,7
	30	22,1	4100	9'111	4,1
	40	29,4	5600	12'444	5,6
	50	36,8	7000	15'555	7,0



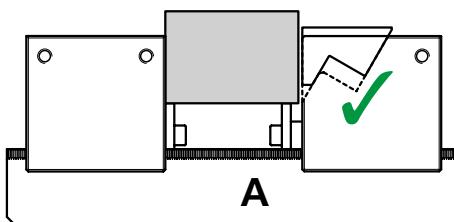
**WICHTIG:**

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



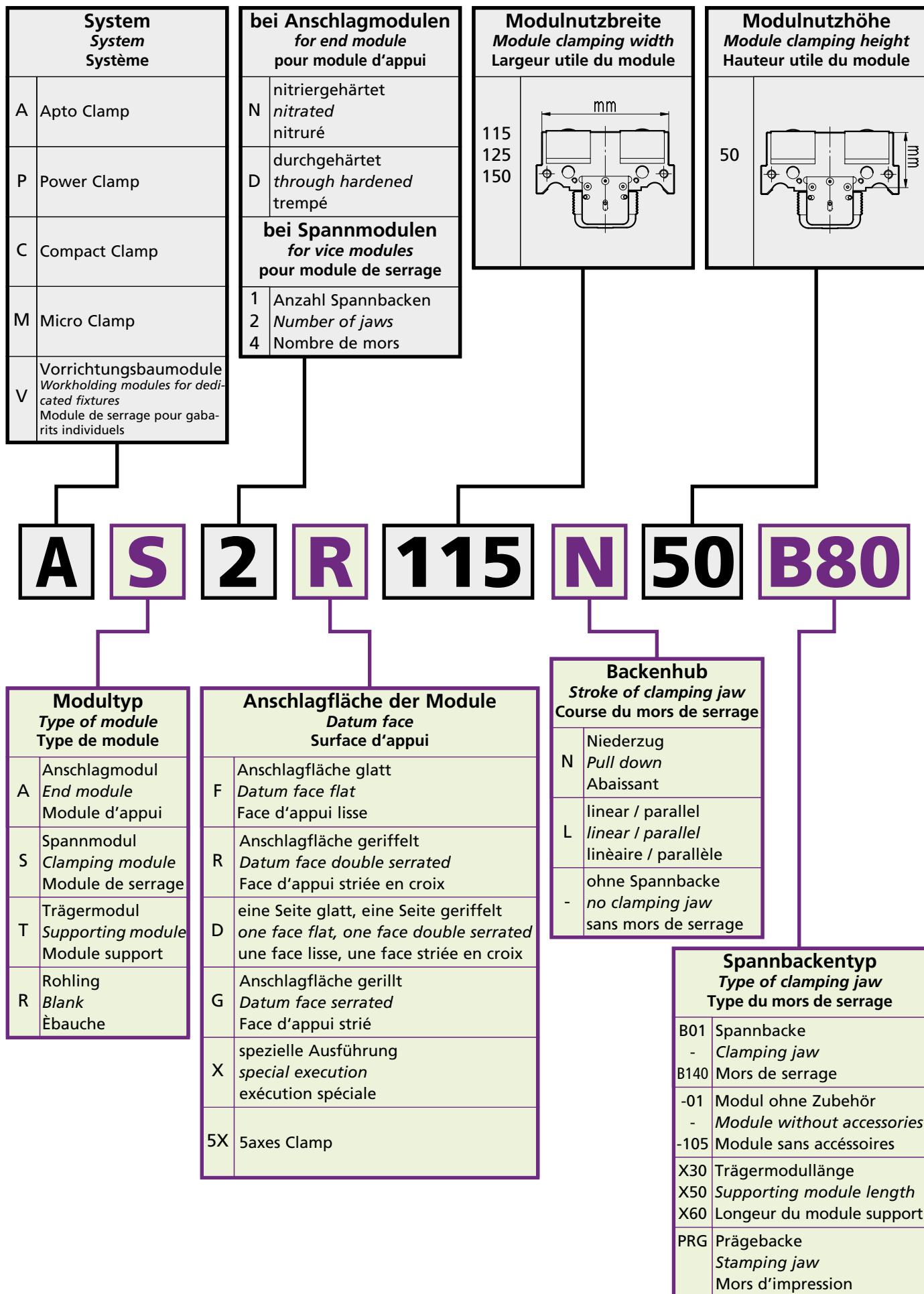
**IMPORTANT:**

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 guarantees proper clamping of the new workpiece.



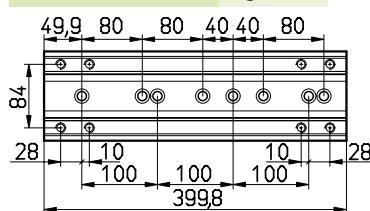
**IMPORTANT:**

Avant le réglage d'un nouveau module, le mors doit être remis en position de départ, afin d'obtenir un serrage optimal (voir image A)!

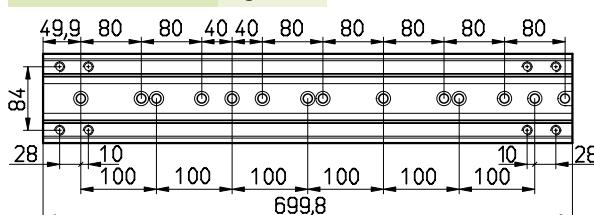




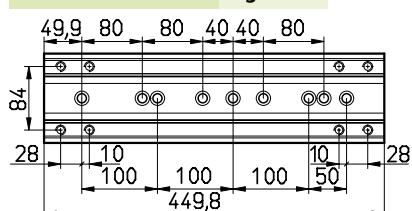
**ACB 40-50 400** kg ~18



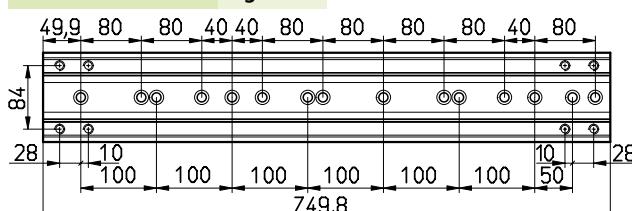
**ACB 40-50 700** kg ~31



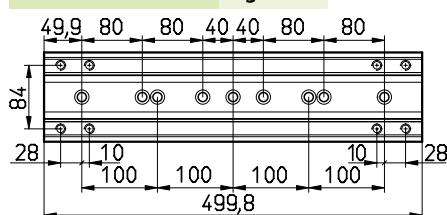
**ACB 40-50 450** kg ~20



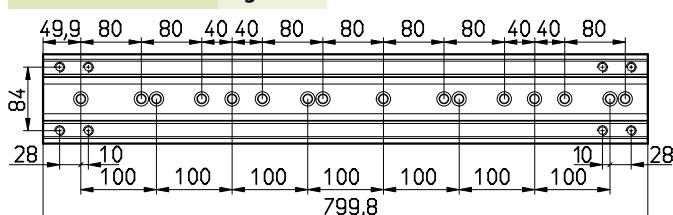
**ACB 40-50 750** kg ~33



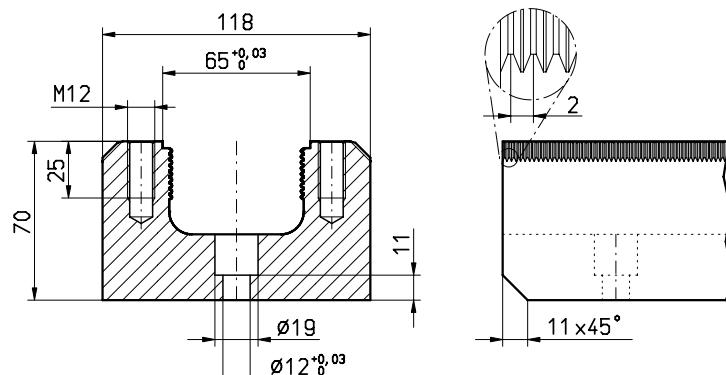
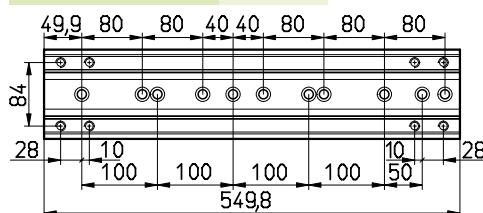
**ACB 40-50 500** kg ~22



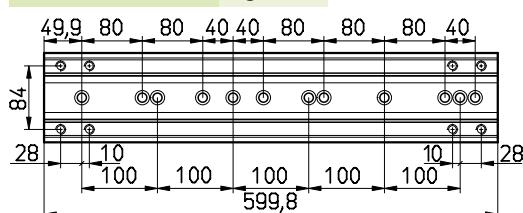
**ACB 40-50 800** kg ~35



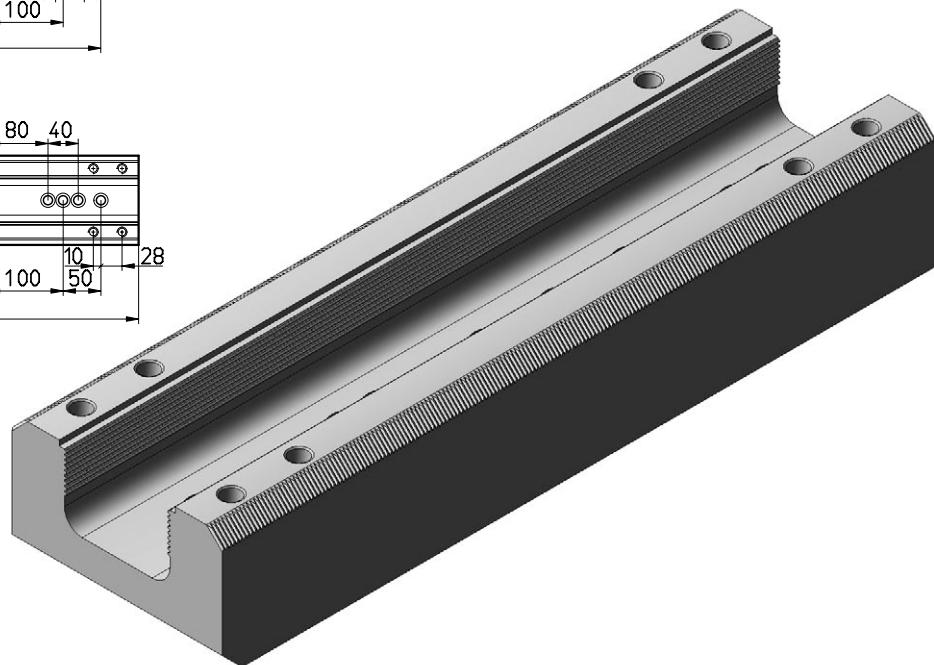
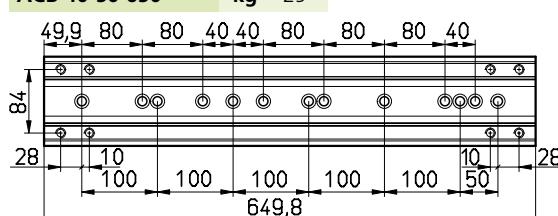
**ACB 40-50 550** kg ~24



**ACB 40-50 600** kg ~26



**ACB 40-50 650** kg ~29



# Spannmodule

## Clamping module

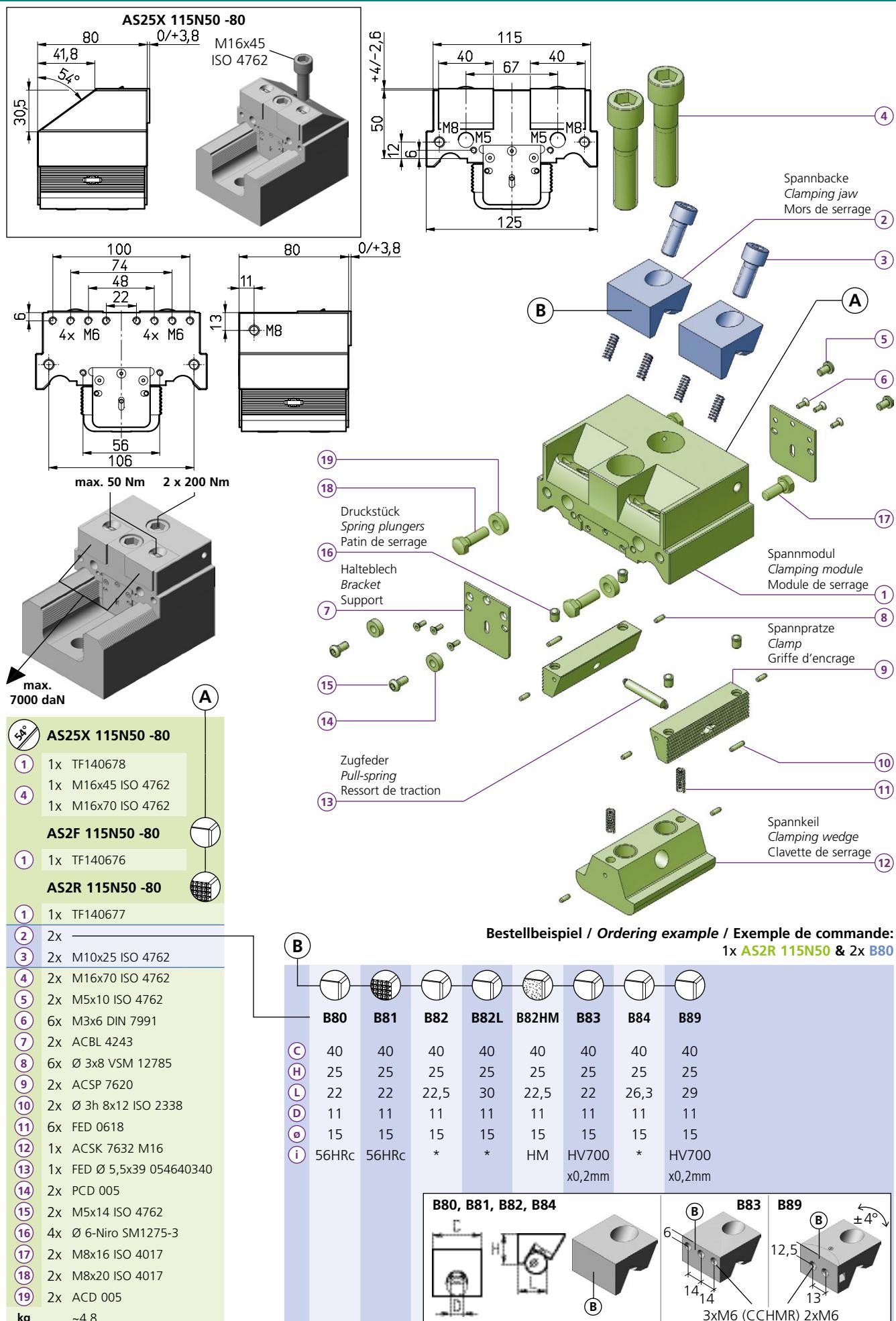
### Module de serrage

**AS2R/F 115N50 -80**

**AS25X 115N50 -80**



**aptoclamp**

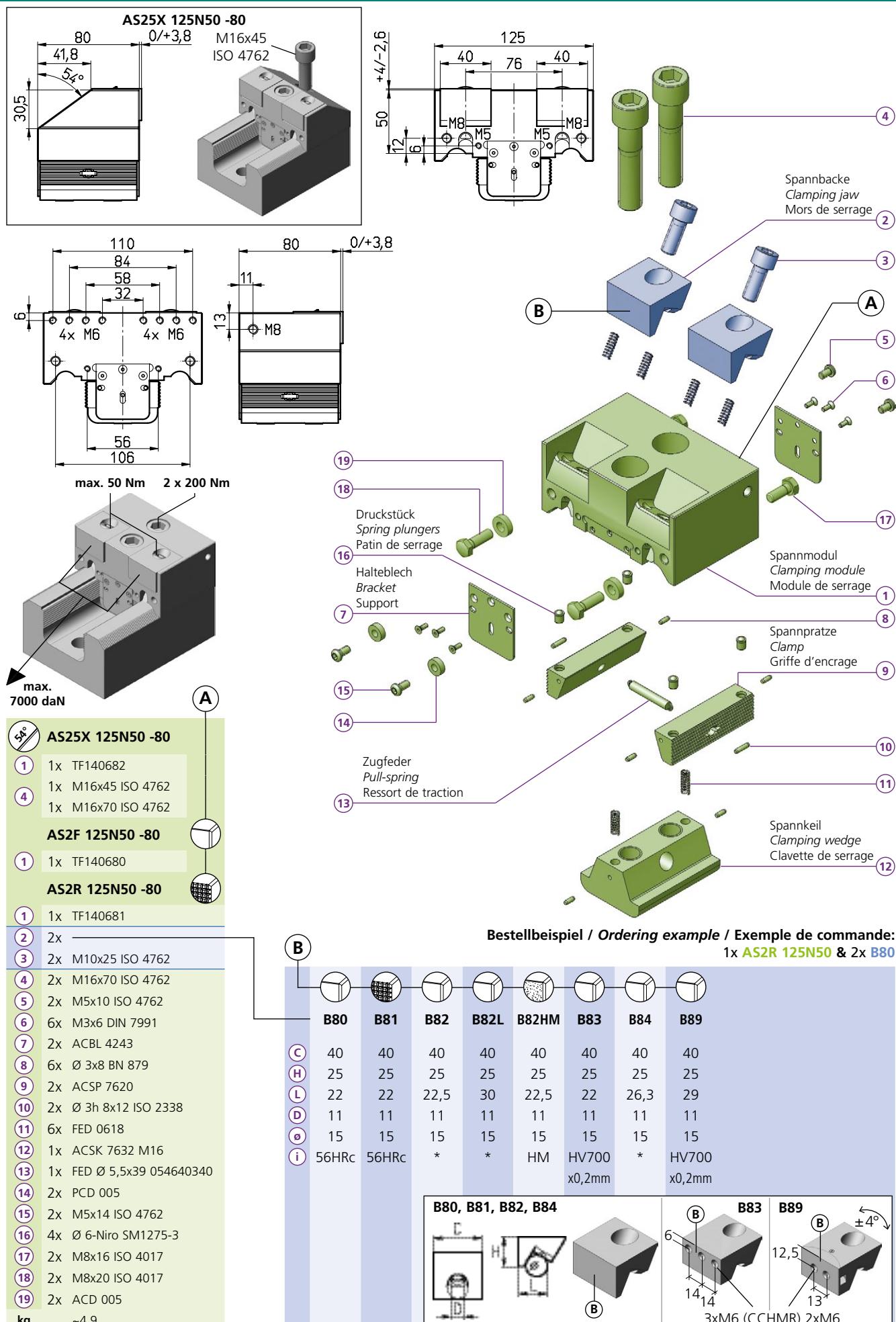


**AS2R/F 125N50 -80**

# AS25X 125N50 -80



# *aptOCLAMP*



\* = weich / soft / doux

**HM = Hartmetallbeschichtet / Carbide coated / Revêtue avec carbone**

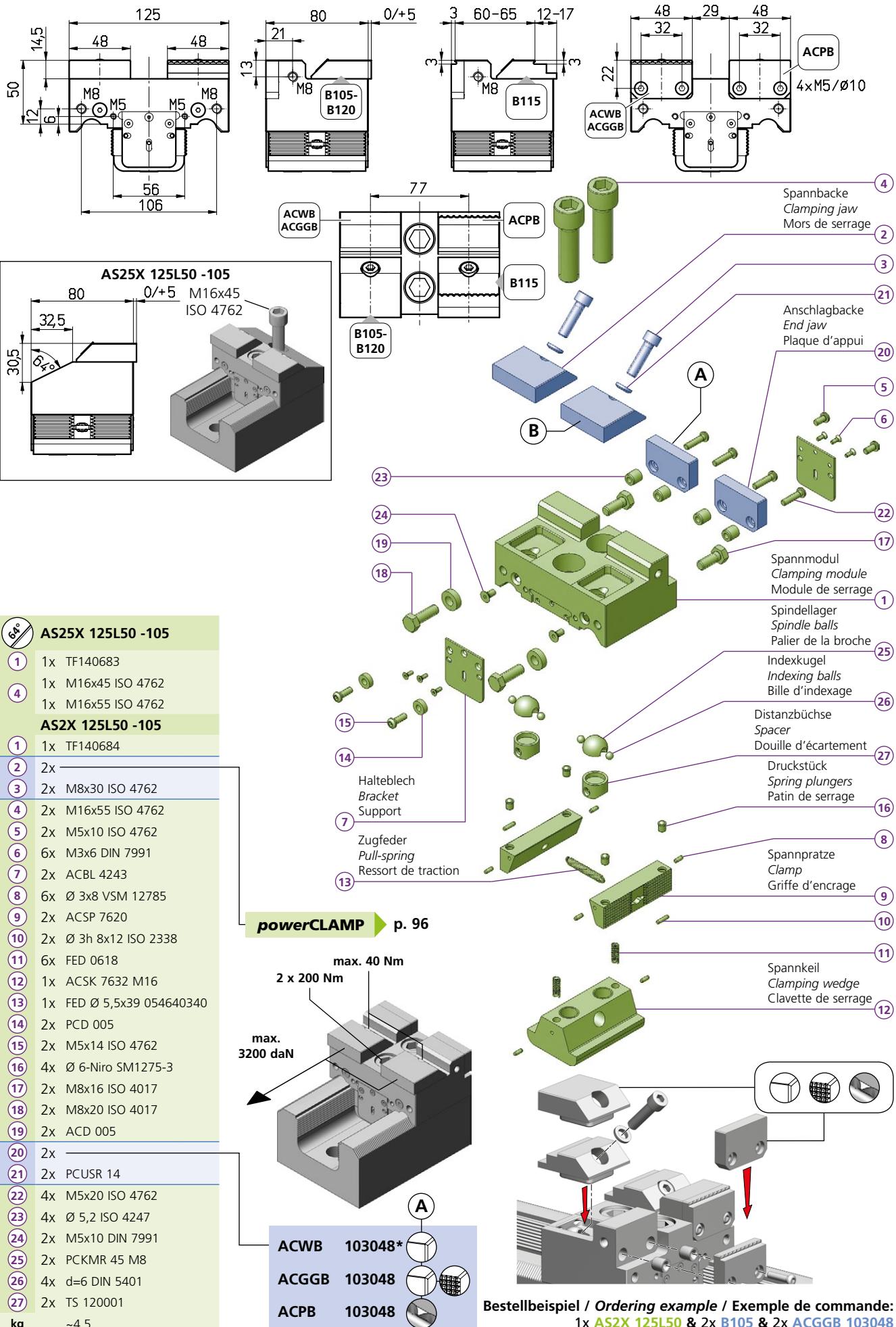


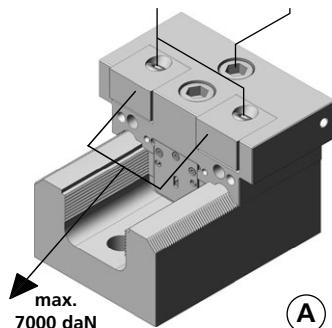
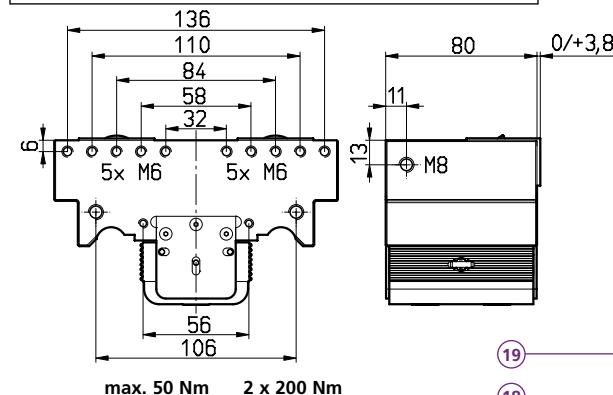
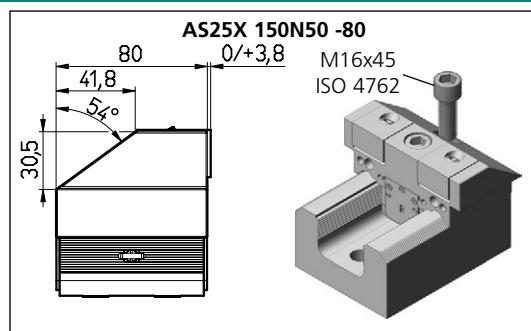
## AS2X 125L50 -105

## AS25X 125L50 -105

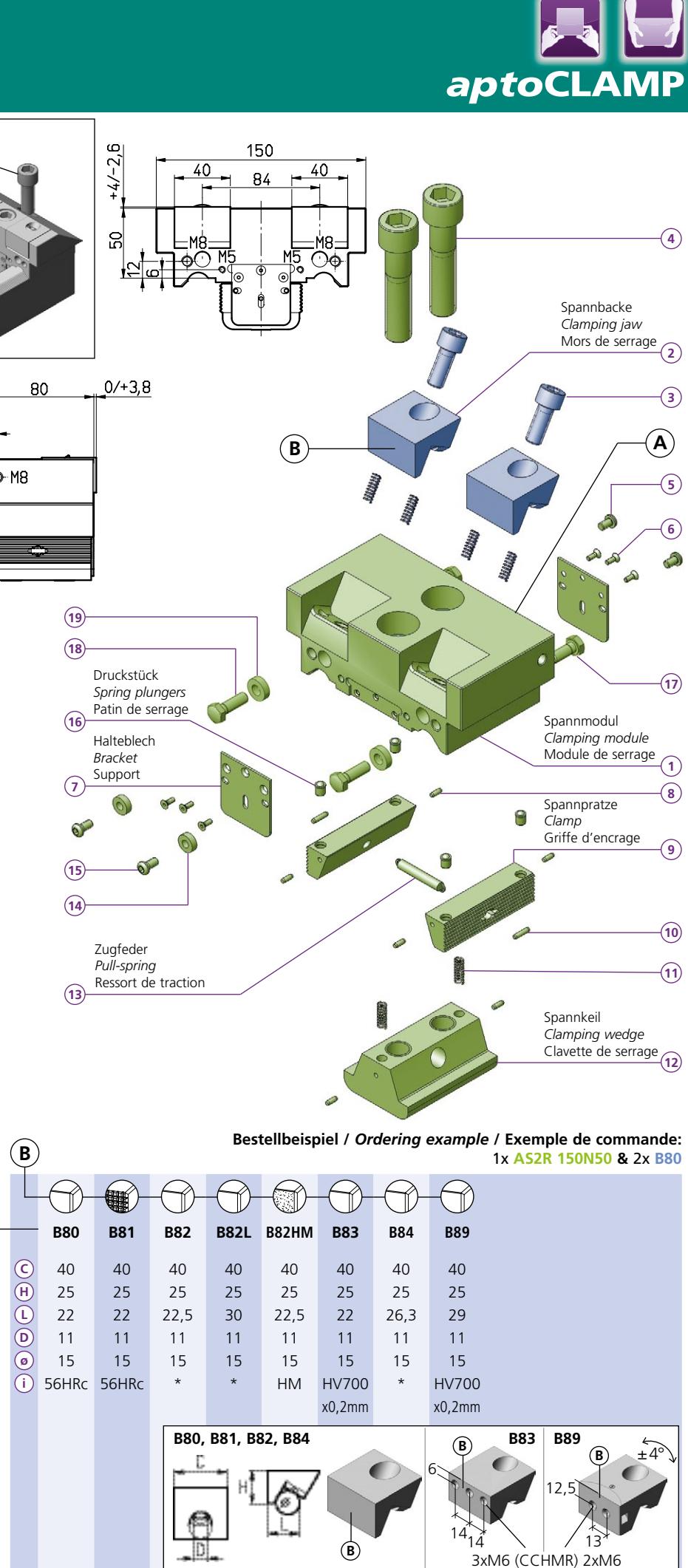
## Linear

**autoCLAMP**



**AS2R/F 150N50 -80**
**AS25X 150N50 -80**


	<b>AS25X 150N50 -80</b>
(1)	1x TF140687
(4)	1x M16x45 ISO 4762
(1)	1x M16x70 ISO 4762
	<b>AS2F 150N50 -80</b>
(1)	1x TF140685
	<b>AS2R 150N50 -80</b>
(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 ACBL 4243
(8)	6x Ø 3x8 VSM 12785
(9)	2x ACSP 7620
(10)	2x Ø 3h 8x12 ISO 2338
(11)	6x FED 0618
(12)	1x ACSK 7632 M16
(13)	1x FED Ø 5,5x39 054640340
(14)	2x PCD 005
(15)	2x M5x14 ISO 4762
(16)	4x Ø 6-Niro SM1275-3
(17)	2x M8x16 ISO 4017
(18)	2x M8x20 ISO 4017
(19)	2x ACD 005
kg	~5,4



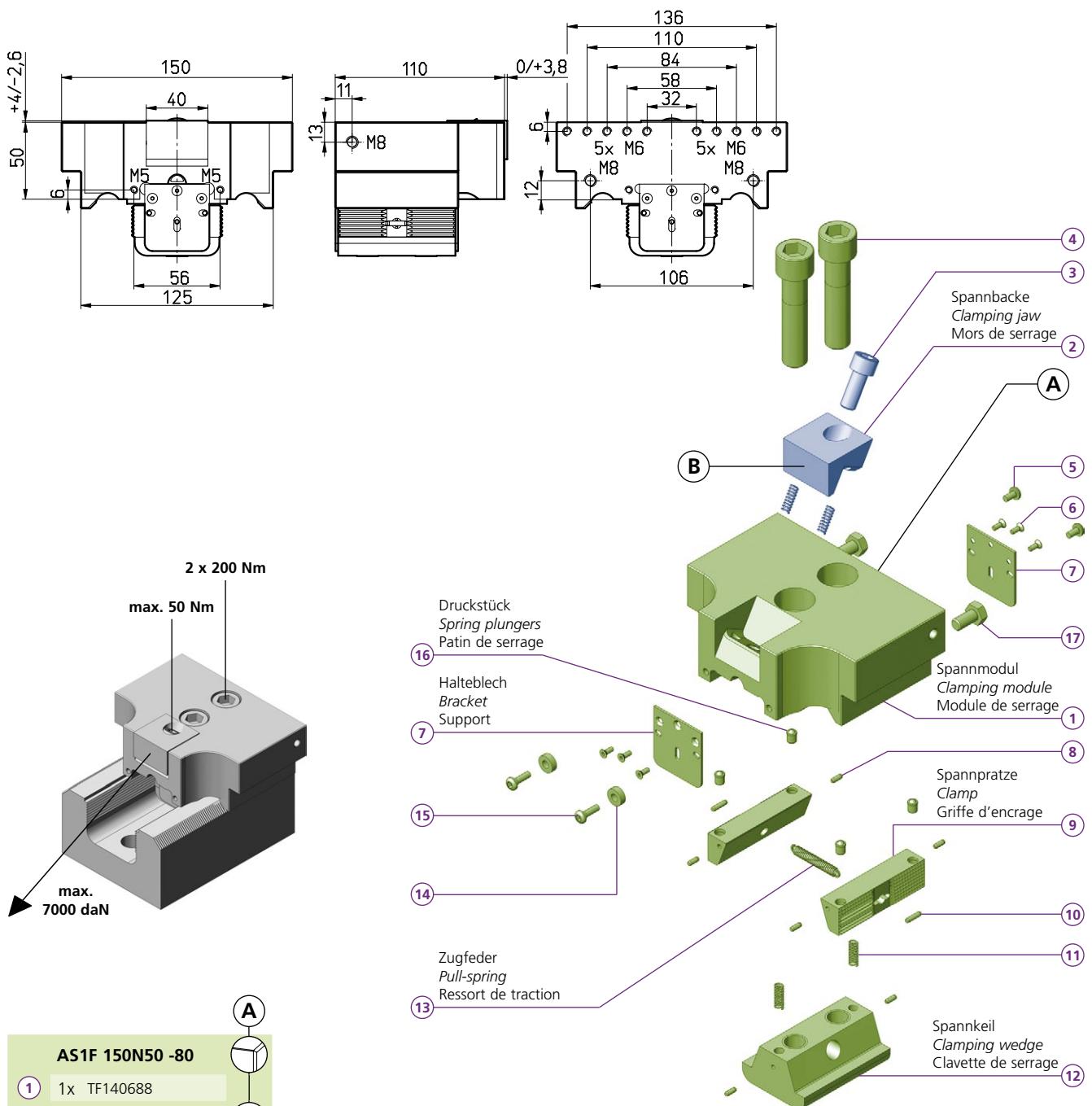
\* = weich / soft / doux

HM = Hartmetallbeschichtet / Carbide coated / Revêtue avec carbure



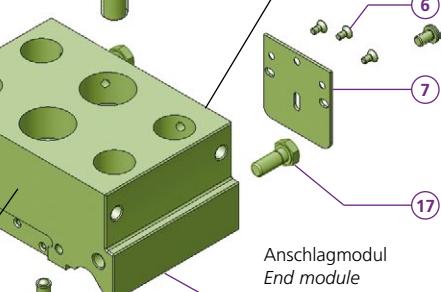
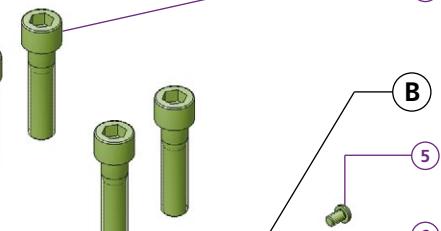
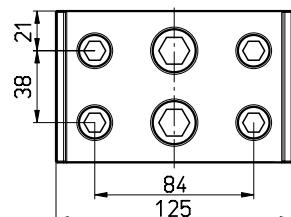
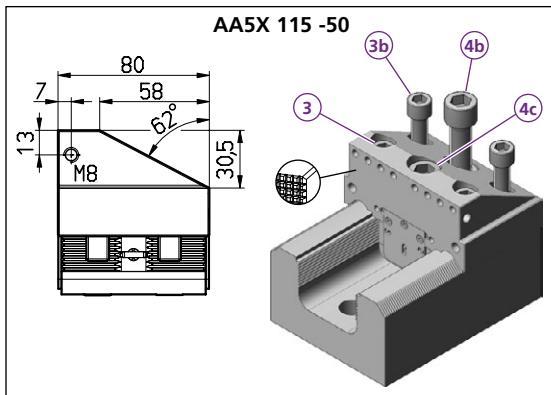
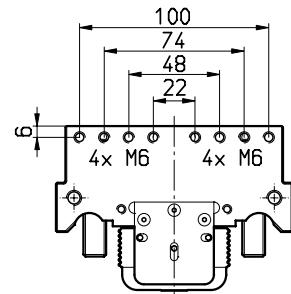
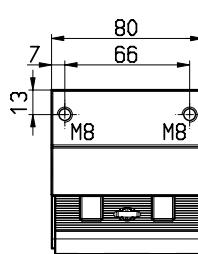
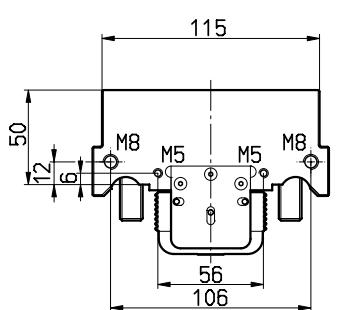
**AS1R/F 150N50 -80**

**aptoclamp**



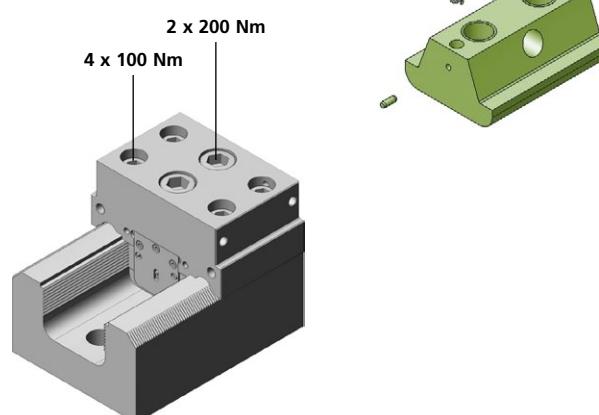
<b>AS1F</b>	<b>150N50 -80</b>	
<b>1</b>	1x TF140688	
<b>AS1R</b>	<b>150N50 -80</b>	
<b>1</b>	1x TF140689	
<b>2</b>	2x	
<b>3</b>	1x M10x25 ISO 4762	
<b>4</b>	2x M16x70 ISO 4762	
<b>5</b>	2x M5x10 ISO 4762	
<b>6</b>	6x M3x6 DIN 7991	
<b>7</b>	2x ACBL 4243	
<b>8</b>	6x Ø 3x8 VSM 12785	
<b>9</b>	2x ACSP 7620	
<b>10</b>	2x Ø 3h 8x12 ISO 2338	
<b>11</b>	4x FED 0618	
<b>12</b>	1x ACSK 7632 M16	
<b>13</b>	1x FED Ø 5,5x39 054640340	
<b>14</b>	2x PCD 005	
<b>15</b>	2x M5x14 ISO 4762	
<b>16</b>	4x Ø 6-Niro SM1275-3	
<b>17</b>	2x M8x16 ISO 4017	
<b>kg</b>	~6.6	

Bestellbeispiel / Ordering example / Exemple de commande:							
	1x AS1R 150N50 & 1x B80						
B							
C	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25
L	22	22	22,5	30	22,5	22	26,3
D	11	11	11	11	11	11	11
Ø	15	15	15	15	15	15	15
i	56HRC	56HRC	*	*	HM	HV700 x0,2mm	HV700 x0,2mm

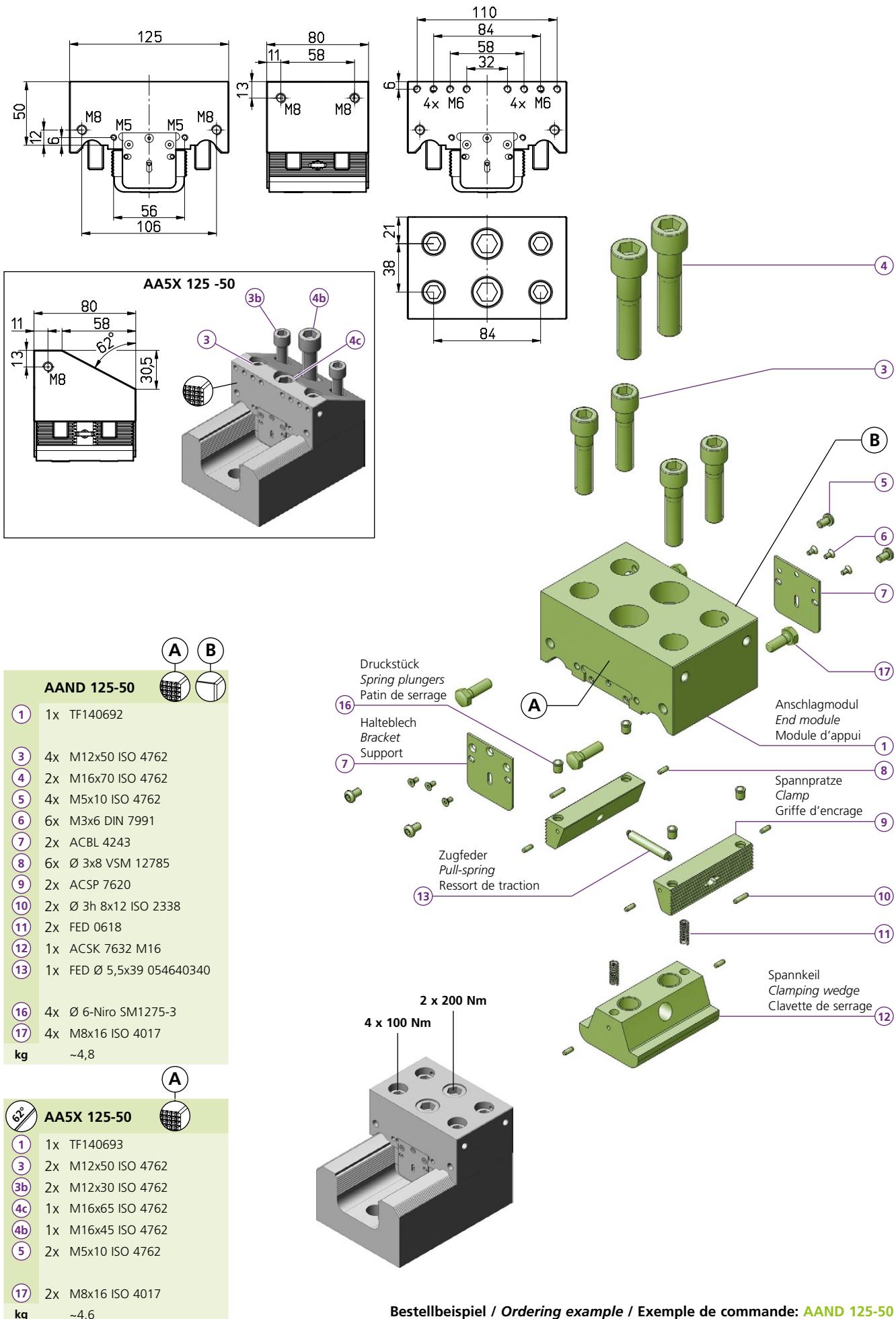


<b>AAND 115-50</b>	
1	1x TF140690
3	4x M12x50 ISO 4762
4	2x M16x70 ISO 4762
5	4x M5x10 ISO 4762
6	6x M3x6 DIN 7991
7	2x ACBL 4243
8	6x Ø 3x8 VSM 12785
9	2x ACSP 7620
10	2x Ø 3h 8x12 ISO 2338
11	2x FED 0618
12	1x ACSK 7632 M16
13	1x FED Ø 5,5x39 054640340
16	4x Ø 6-Niro SM1275-3
17	4x M8x16 ISO 4017
<b>kg</b>	<b>~4,7</b>

<b>AA5X 115-50</b>	
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
<b>kg</b>	<b>~4,6</b>



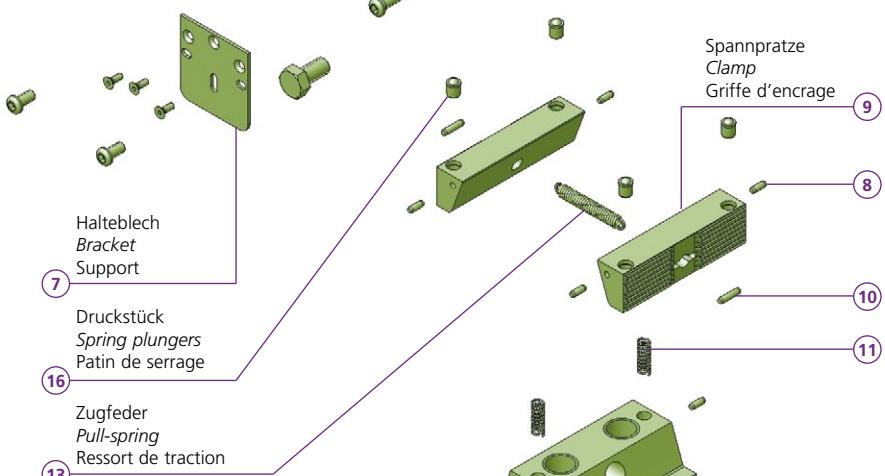
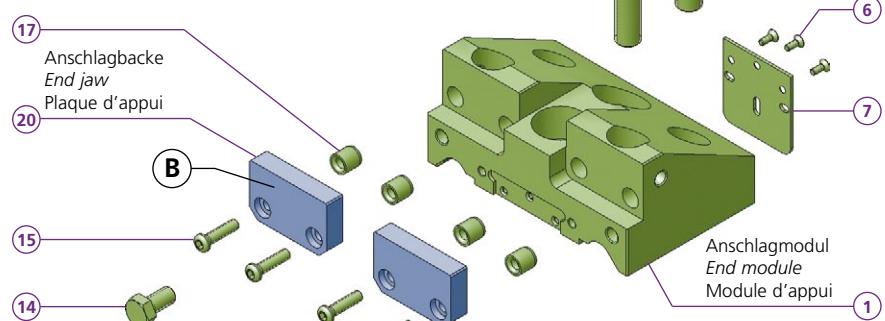
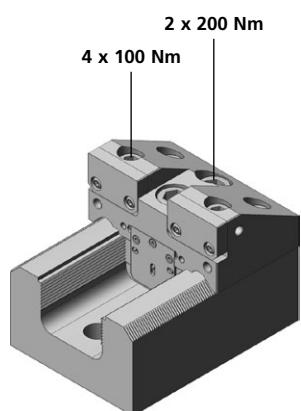
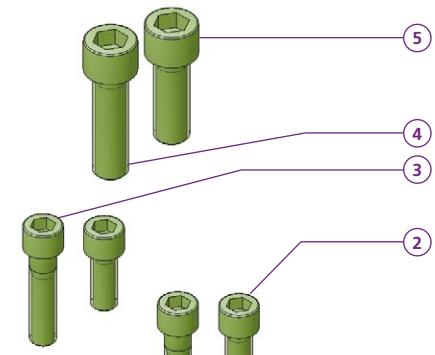
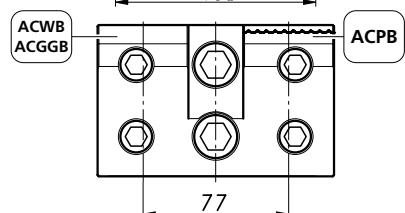
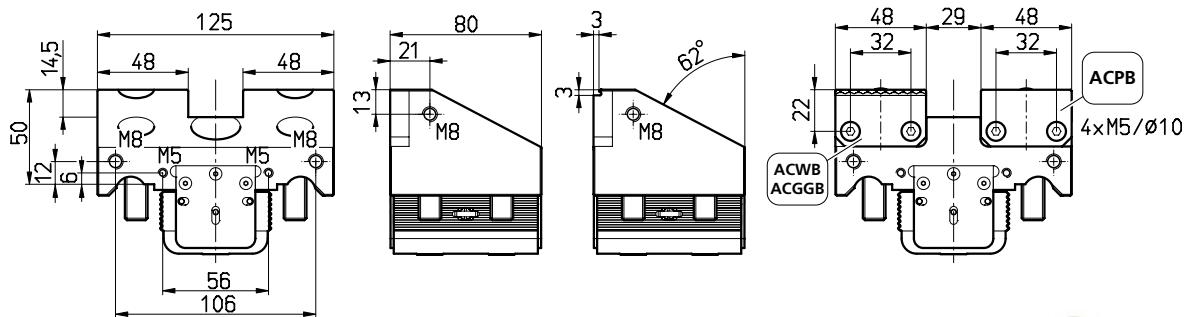
**Bestellbeispiel / Ordering example / Exemple de commande:** **AAND 115-50**





# AA5X 125-50 VB

**aptoCLAMP**



Zugfeder  
Pull-spring  
Ressort de traction

Halteblech  
Bracket  
Support

Druckstück  
Spring plungers  
Patin de serrage

Anschlagbacke  
End jaw  
Plaque d'appui

B

Anschlagmodul  
End module  
Module d'appui

Spannpratze  
Clamp  
Griffe d'enrage

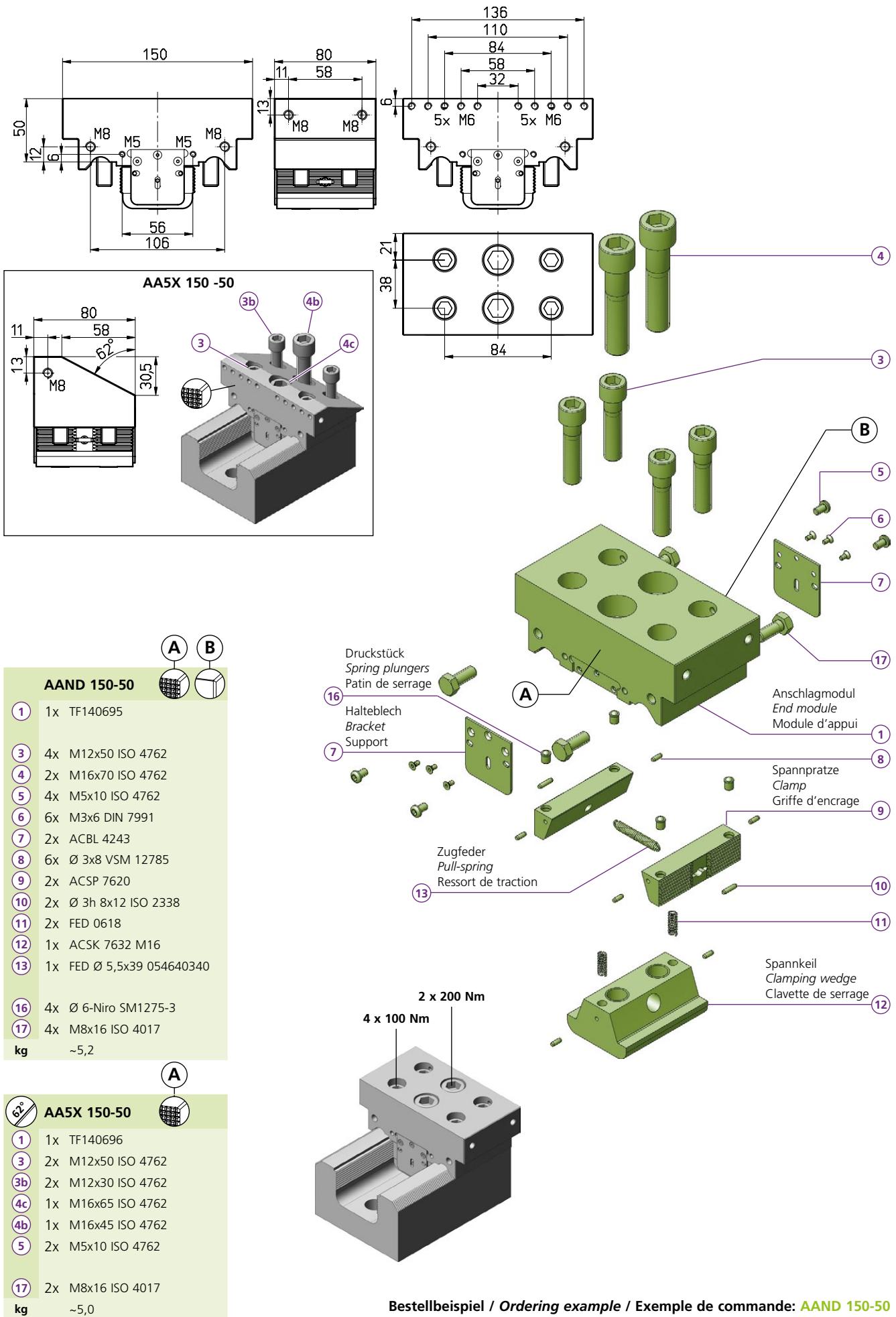
Spannkeil  
Clamping wedge  
Clavette de serrage

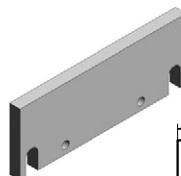
AA5X 125-50 VB	
1	1x TF140694
2	2x M12x30 ISO 4762
3	2x M12x50 ISO 4762
4	1x M16x55 ISO 4762
5	1x M5x10 ISO 4762
6	6x M3x6 DIN 7991
7	2x ACBL 4243
8	6x Ø 3x8 VSM 12785
9	2x ACSP 7620
10	2x Ø 3h 8x12 ISO 2338
11	2x FED 0618
12	1x ACSK 7632 M16
13	1x FED Ø 5,5x39 054640340
14	2x M8x16 ISO 4017
15	4x M5x20 ISO 4762
16	4x Ø 6-Niro SM1275-3
17	4x Ø 5,2 ISO 4247
20	2x _____
kg	~4,5

<b>ACWB</b>	<b>103048*</b>
<b>ACGGB</b>	<b>103048</b>
<b>ACPB</b>	<b>103048</b>

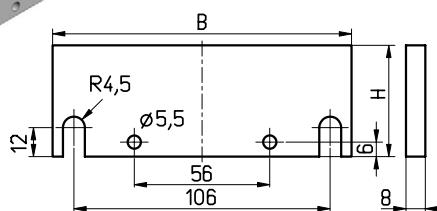
**Bestellbeispiel / Ordering example / Exemple de commande:**  
1x AA5X 125-50 & 2x ACGGB 103048

\* = weich / soft / doux



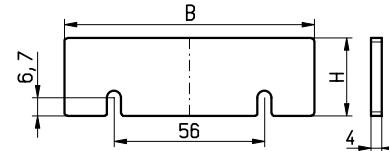
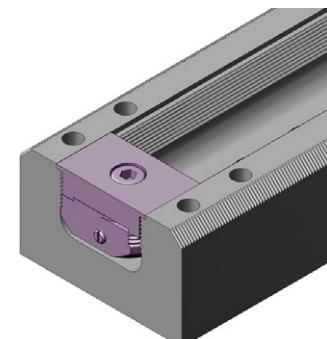
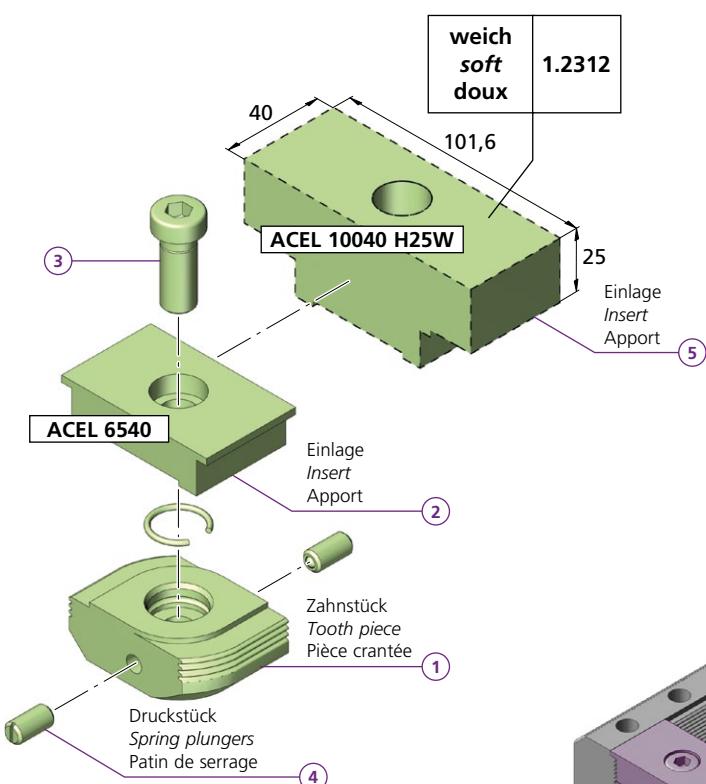
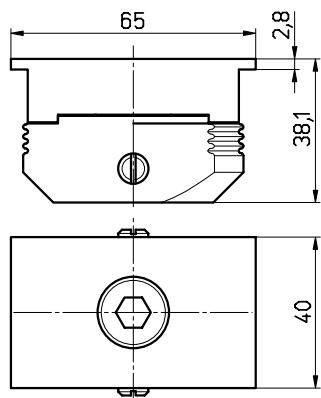

**Parallelunterlage**  
**Steel parallels**  
**Cales parallèles**


H	Module 124mm	B
21	ACU 21124	124
36	ACU 36124	124
41	ACU 41124	124
46	ACU 46124	124



H	Module 94mm	B
14	PCU 14093	93
20	PCU 20093	93
24	PCU 24093	93
29	PCU 29093	93
31	PCU 31093	93
34	PCU 34093	93
39	PCU 39093	93
44	PCU 44093	93
46	PCU 46093	93

H	Module 125mm	B
20	PCU 20124	124
24	PCU 24124	124
29	PCU 29124	124
31	PCU 31124	124
34	PCU 34124	124
39	PCU 39124	124
44	PCU 44124	124

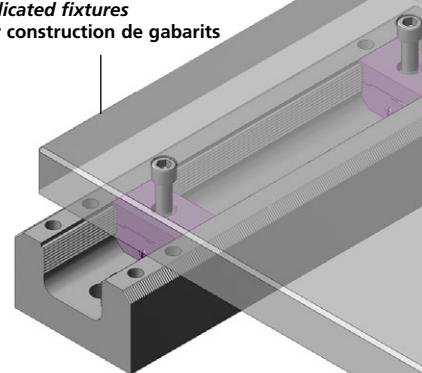
**Universalnutenstein****Universal nut****Tasseau universel****ACES 6540**

- ① 1x ACZS6540
- ② 1x ACEL 6540
- ③ 1x M12x30 DIN 7984
- ④ 2x SM 1275-1 KS M08
- kg** ~ 0,66

**ACES 10040**

- ⑤ 1x ACEL 10040 H25W
- kg** ~ 1,01

Vorrichtungsplatte  
Plate for dedicated fixtures  
Plateau pour construction de gabarits



# Universal - Unterlagenhalter

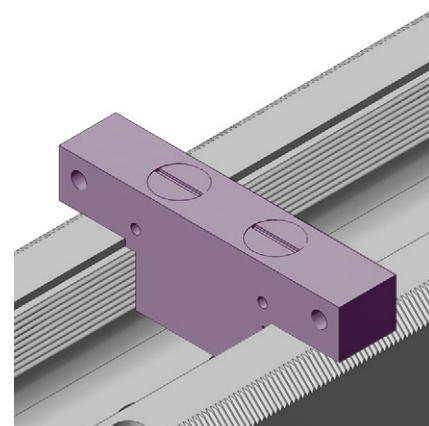
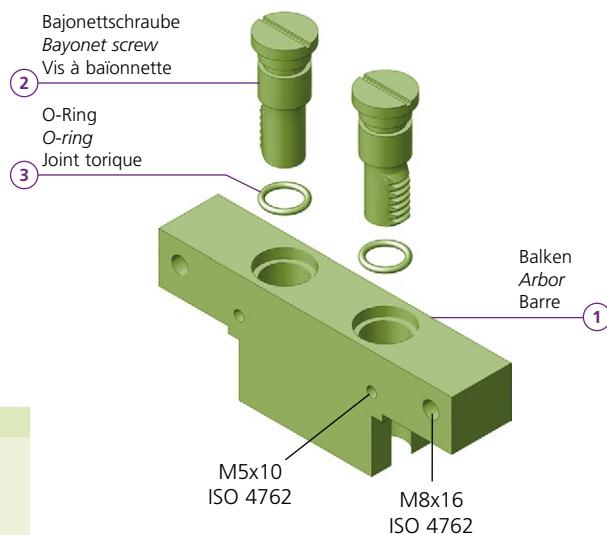
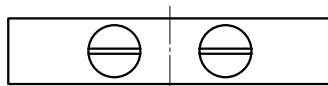
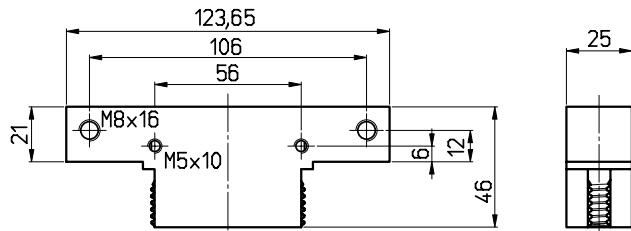
## Universal holder for steel parallels

### Support universel pour cales



**aptoclamp**

**Universal - Unterlagenhalter**  
**Universal holder for steel parallels**  
**Support universel pour cales**

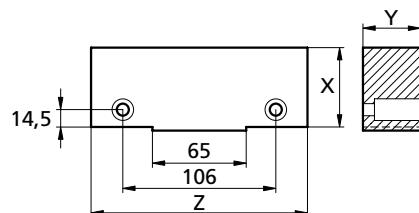
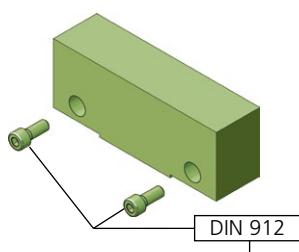


#### ACUH 21-124

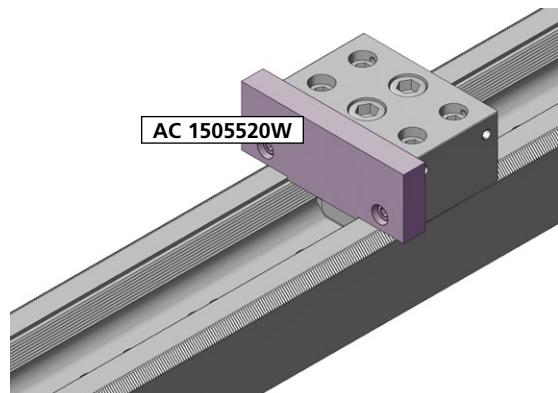
- ① 1x TW090086-02
  - ② 1x ACBS 1646
  - ③ 2x OR Ø 12X2
- kg** ~ 0,74

Bestellbeispiel / Ordering example / Exemple de commande: **ACUH 21-124**

**weiche Backe**  
**soft jaw**  
**mors doux**



		X	Y	Z	kg
AC 1505520W	M8x20	55	20	150	~ 1,28
AC 1505540W	M8x20	55	40	150	~ 2,55



Bestellbeispiel / Ordering example / Exemple de commande: **ACES 6540**