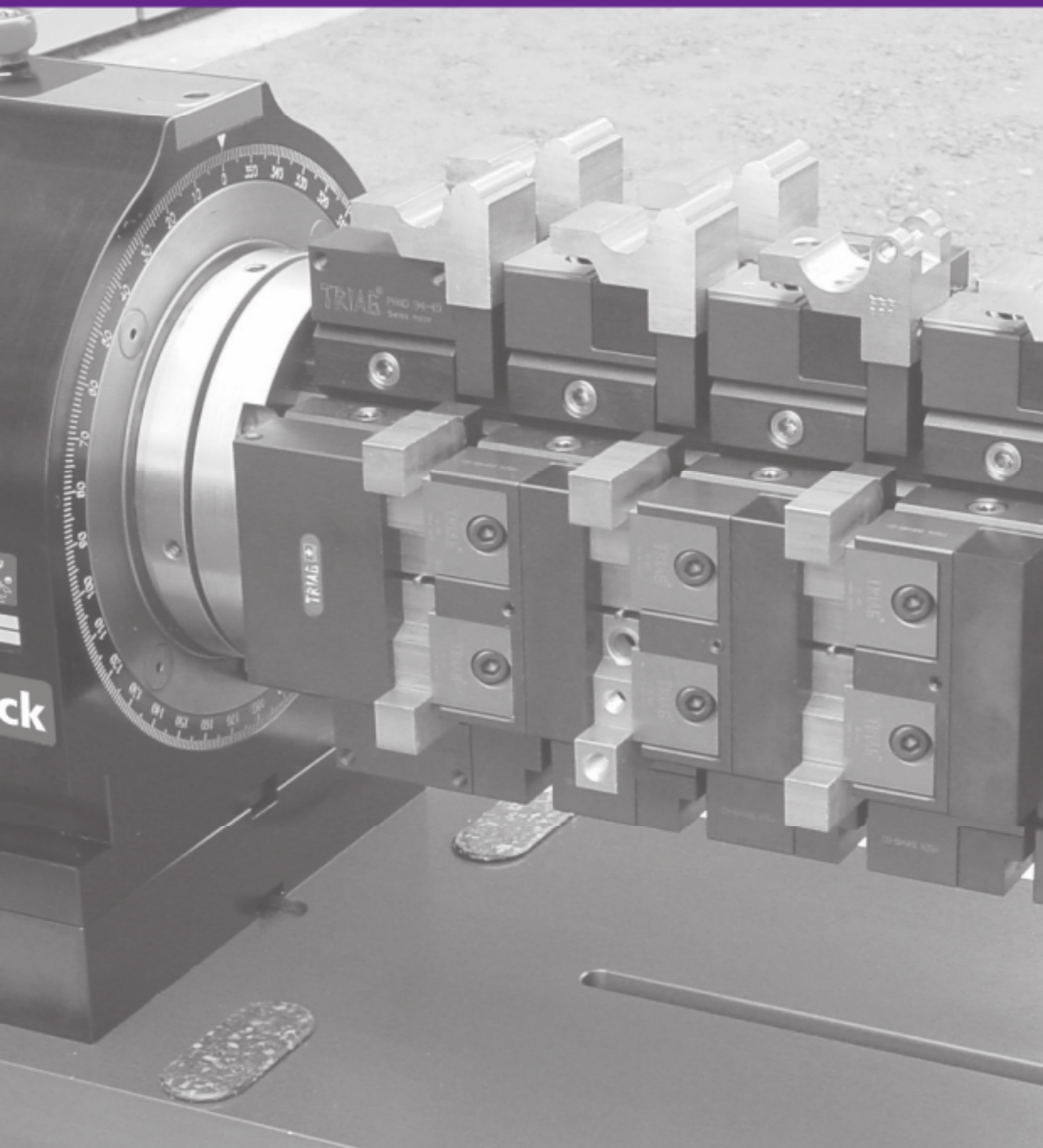


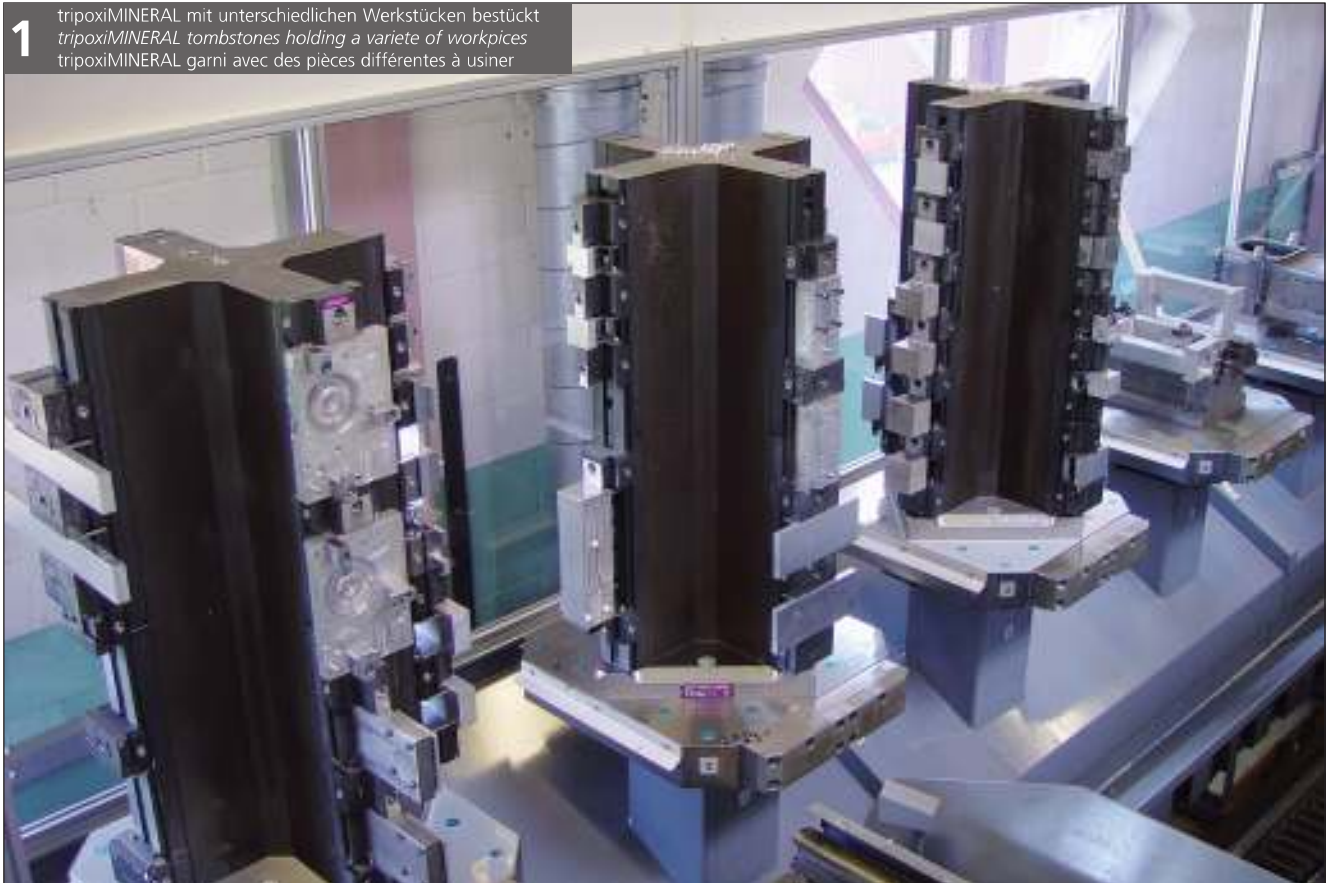


*power*CLAMP & *5axes* *power*CLAMP





1 tripoxiMINERAL mit unterschiedlichen Werkstücken bestückt
 tripoxiMINERAL tombstones holding a variety of workpieces
 tripoxiMINERAL garni avec des pièces différentes à usiner



3 Zentrischspanner auf einem Spezialturm
 Centric vices installed on a special tombstone
 Module de serrage à centrer sur une tourelle spéciale



...im Einsatz auf der 5 Achsenmaschine
 ...in action on a 5 axis machine
 ...en action avec le 5^{ème} axe



5 Dreiseitenbearbeitung ab 19 mm
Three-sided machining beginning at 19 mm
 Usinage à trois côtés dès 19 mm



7 Aufspannung mit Power Clamp auf einem „Triproxy“ Mineralgussturm
Set up with Power Clamp on a tombstone made of composite concrete
 Serrage Power Clamp sur une tourelle à minérale coulée



6 Das Triag Power Clamp im Einsatz als Spannstock (Starterset)
Triag Power Clamp in action as machine vise (starter set)
 Le Triag Power Clamp en action comme étau (starter set)



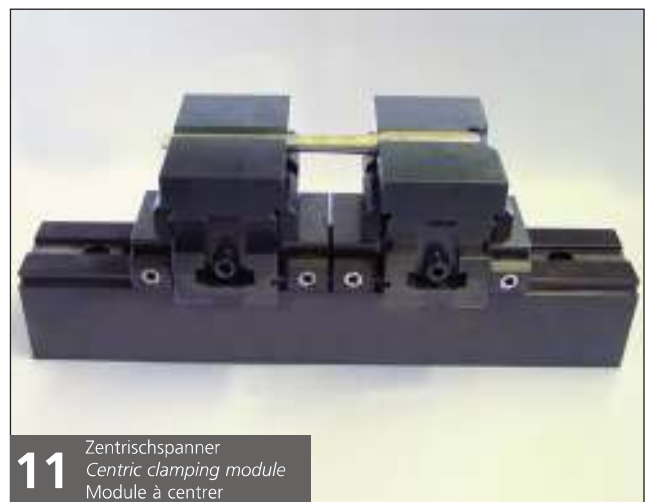
8 Toolclick mit Power Clamp
Toolclick with Power Clamp
 Toolclick avec Power Clamp



9 ...im Einsatz auf der 4. Achse
...in action on the 4th axis
 ...en action avec le 4ème axe



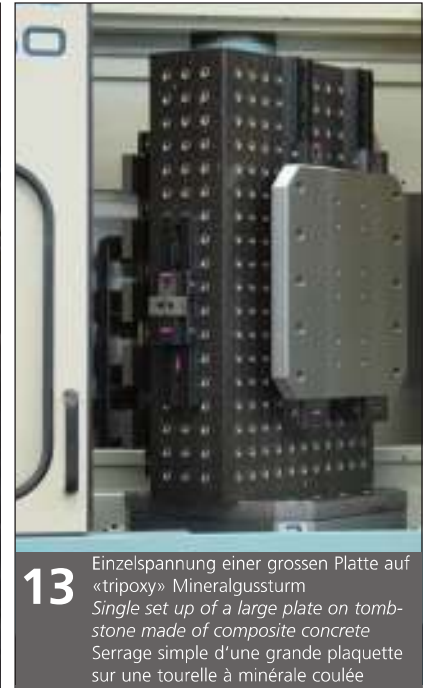
10 ...im Einsatz auf der 5 Achsenmaschine
...in action on a 5 axis machine
 ...en action avec le 5 ème axe



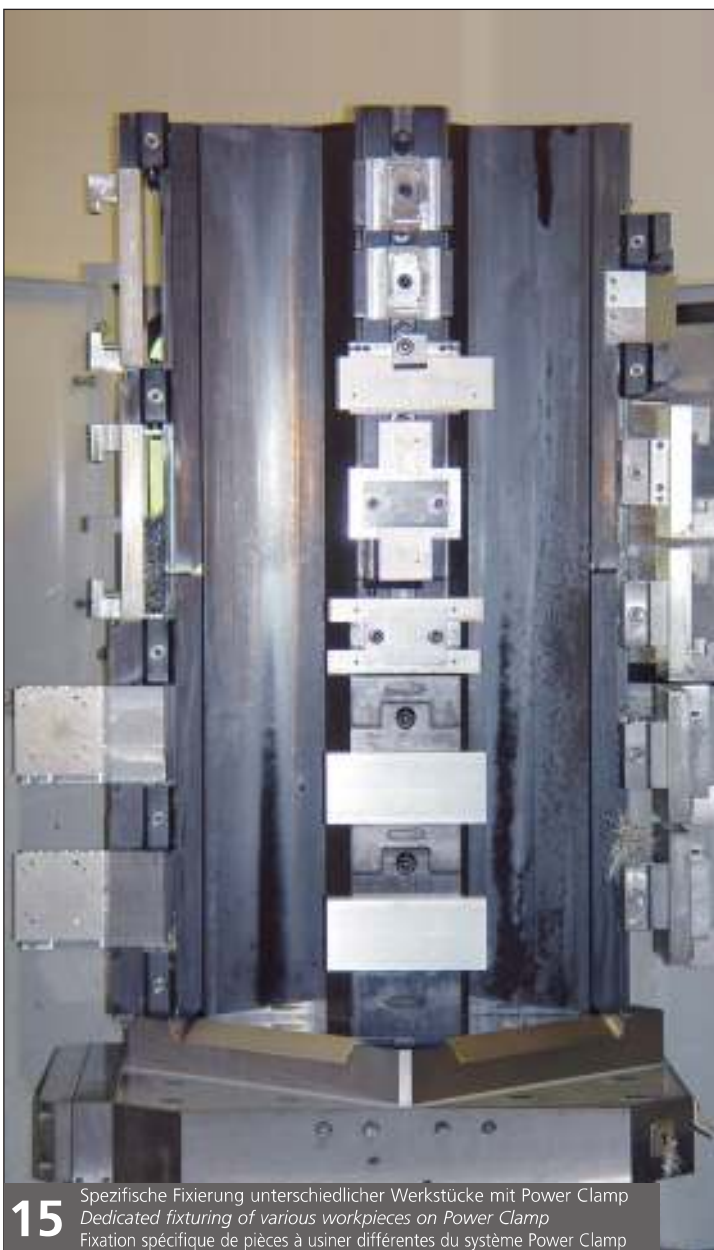
11 Zentrischspanner
Centric clamping module
 Module à centrer



12 Verschiedene dringende Werkstücke in Bearbeitung,
 Grundplatte, Nutensteine und Keile (Total 9 Werkstücke)
*Various urgent work pieces in progress, base plate, nuts
 and wedges (totally 9 pieces)*
 Diverses pièces de travaux urgents en cours, la plaque de
 base, les noix et les cales (total 9 pièces)



13 Einzelspannung einer grossen Platte auf
 «tripoxy» Mineralgussturm
*Single set up of a large plate on tomb-
 stone made of composite concrete*
 Serrage simple d'une grande plaquette
 sur une tourelle à minérale coulée



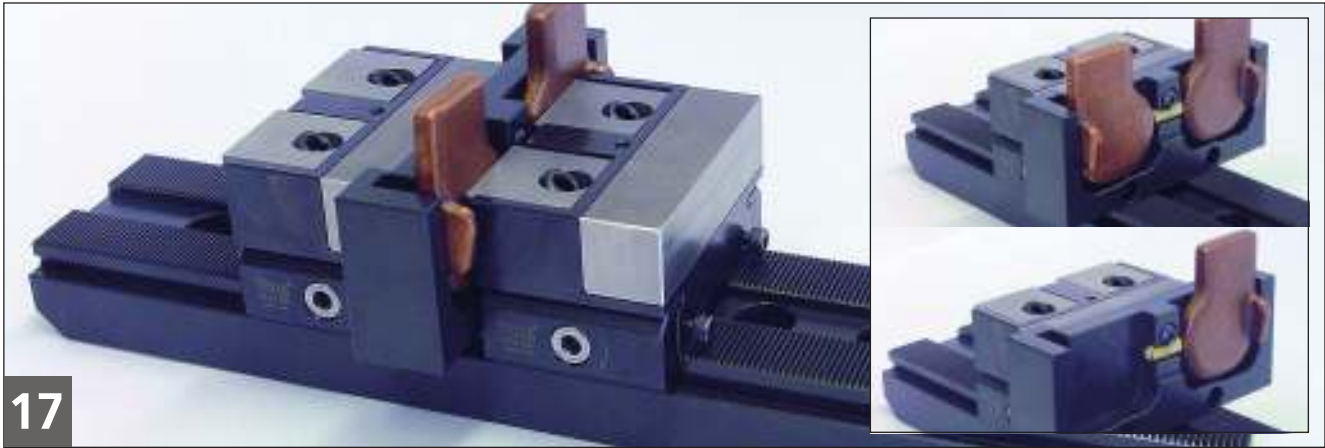
15 Spezifische Fixierung unterschiedlicher Werkstücke mit Power Clamp
Dedicated fixturing of various workpieces on Power Clamp
 Fixation spécifique de pièces à usiner différentes du système Power Clamp



14



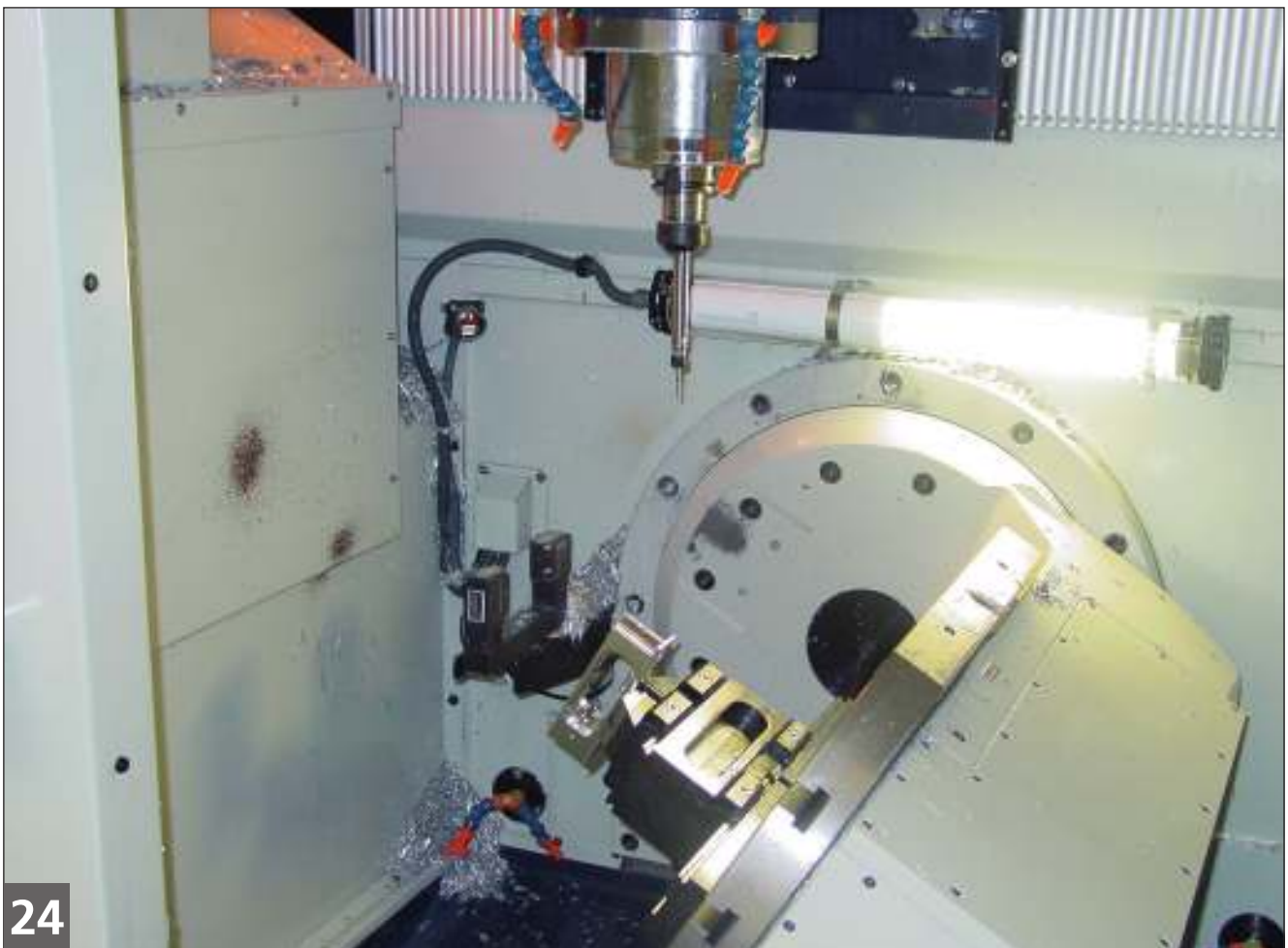
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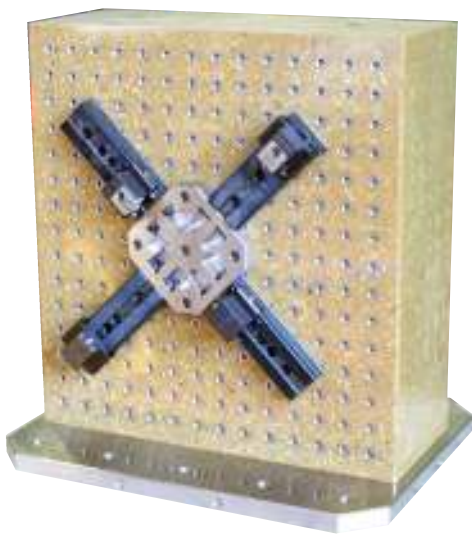




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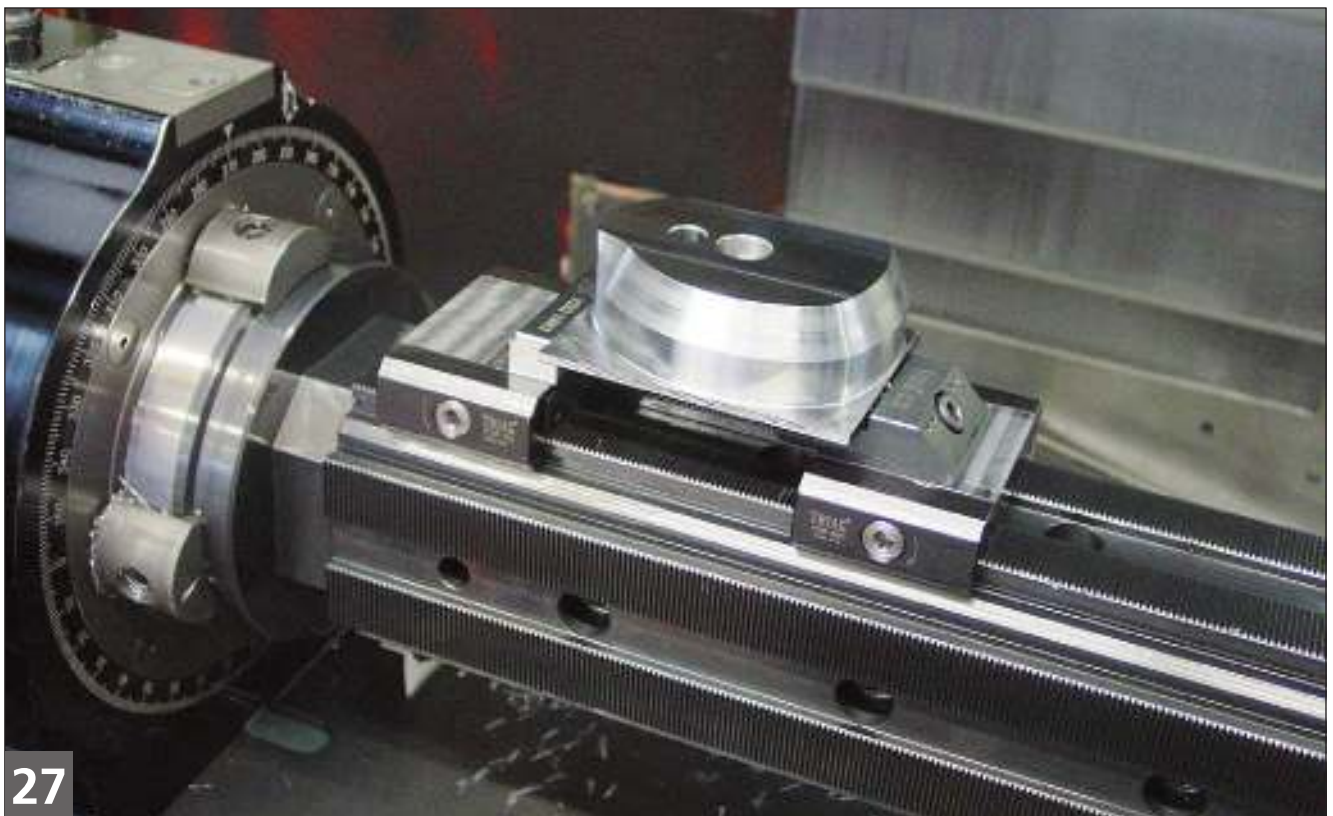
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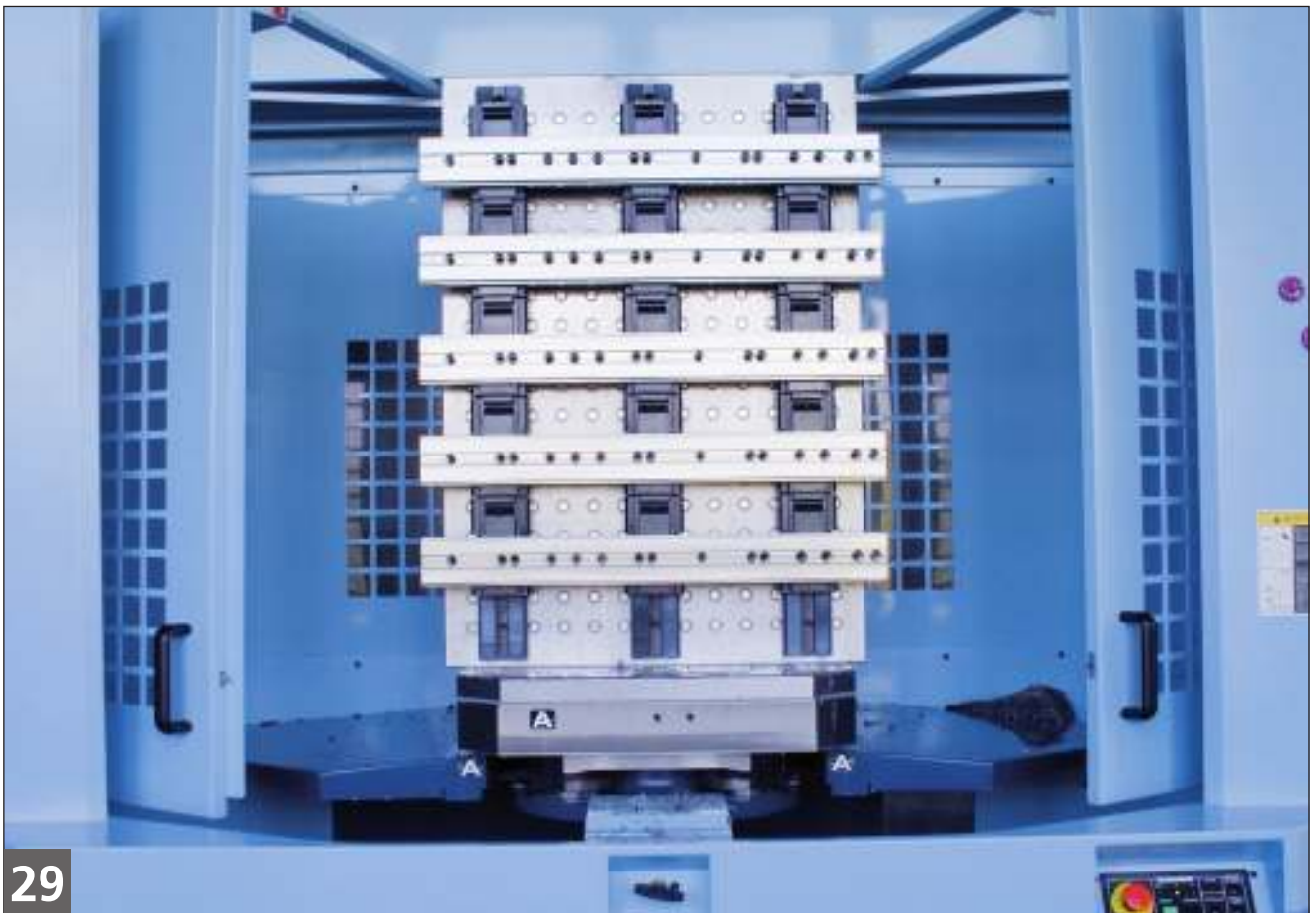
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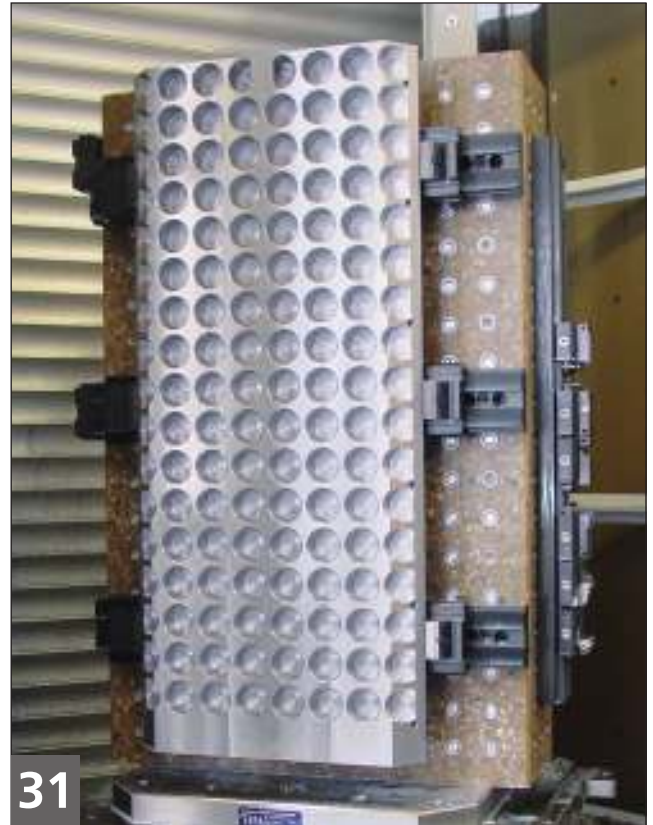
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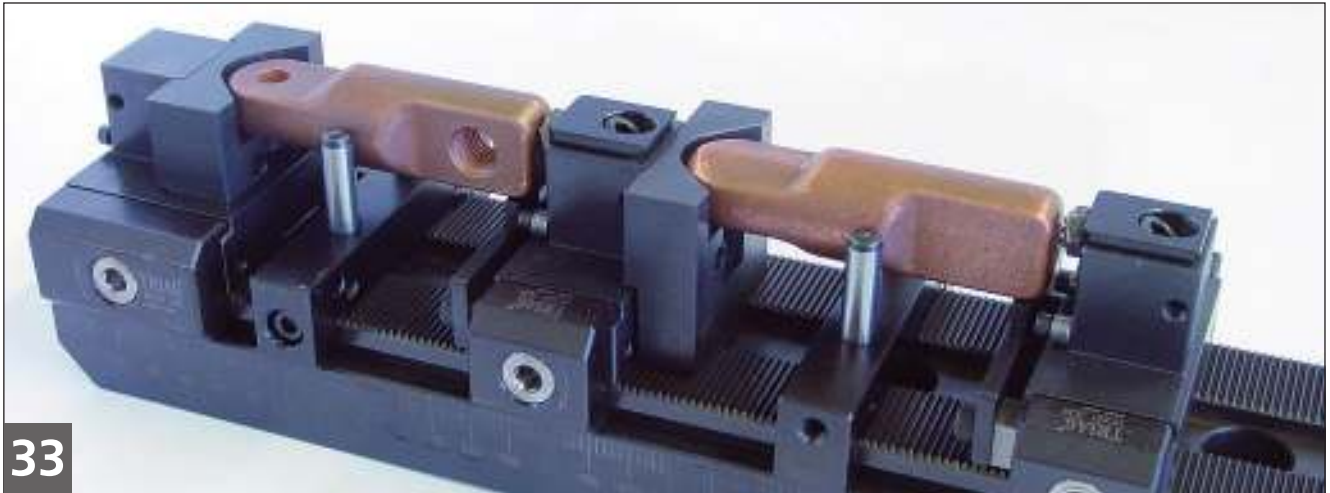


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29





33



Säule
200 x 400 x 1330 mm

34

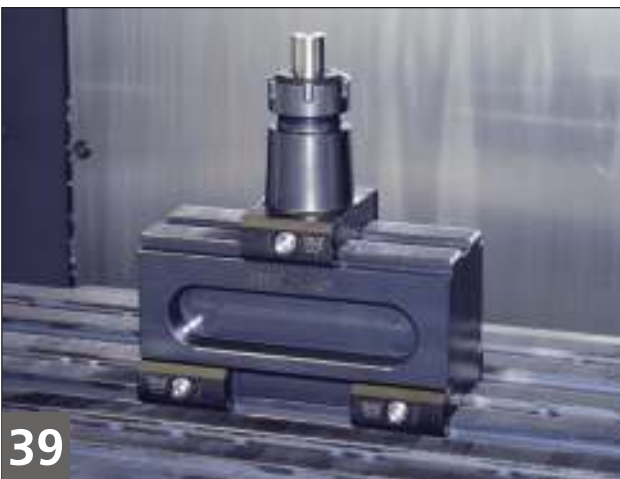
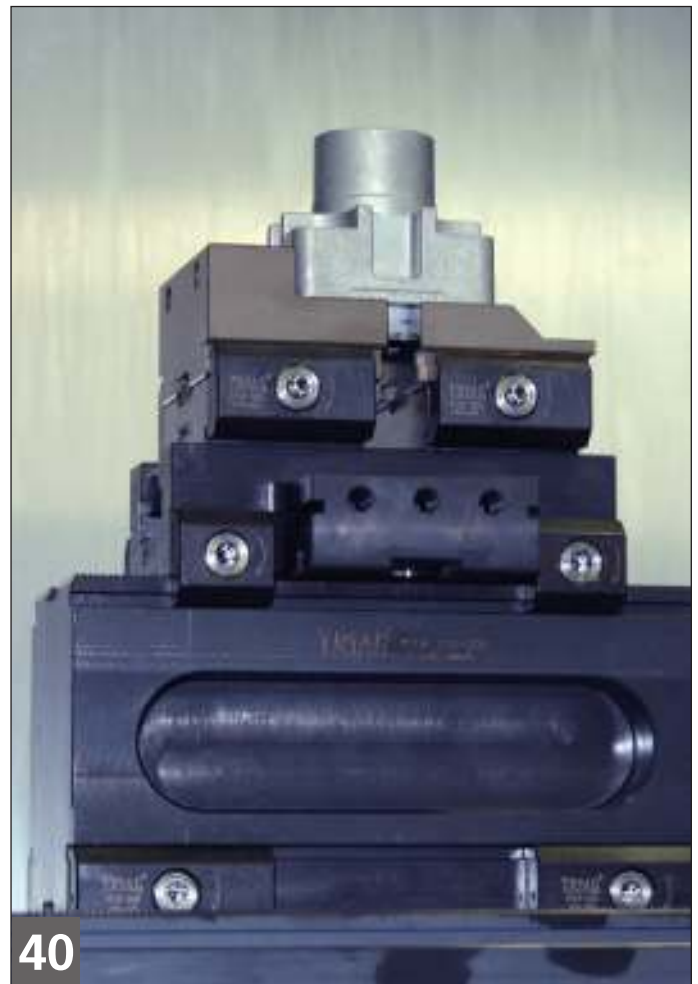
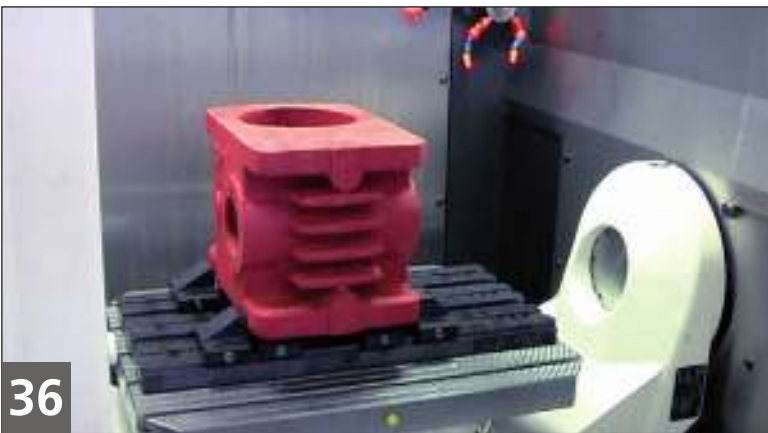
Stahlmineralguss-Säulen mit Power Clamp, Fertigung von Flügelteilen
Steel coated epoxy cube with Power Clamp for the production of aeroplanes wings parts
Colonne fonte minérale avec manteau acier et Power Clamp, pour la fabrication de parties d'ailes d'avion



Anwendungsbeispiele
Examples of application
Exemples d'applications



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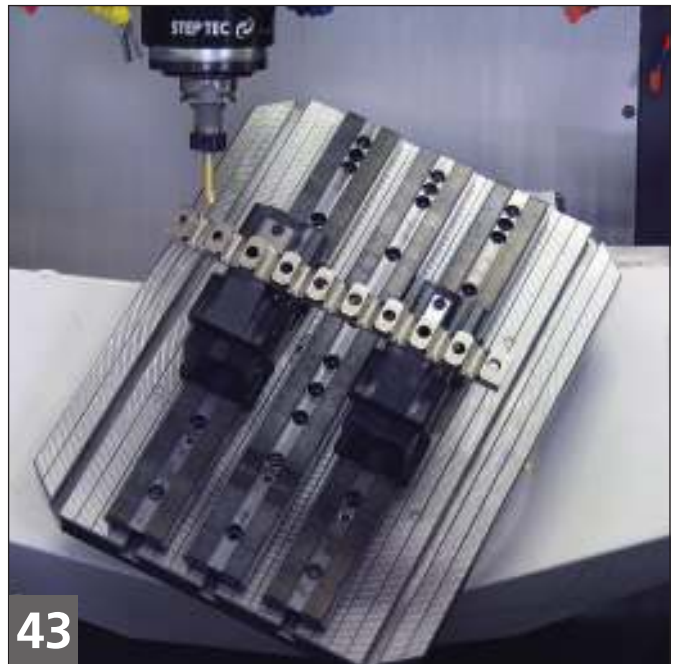




41



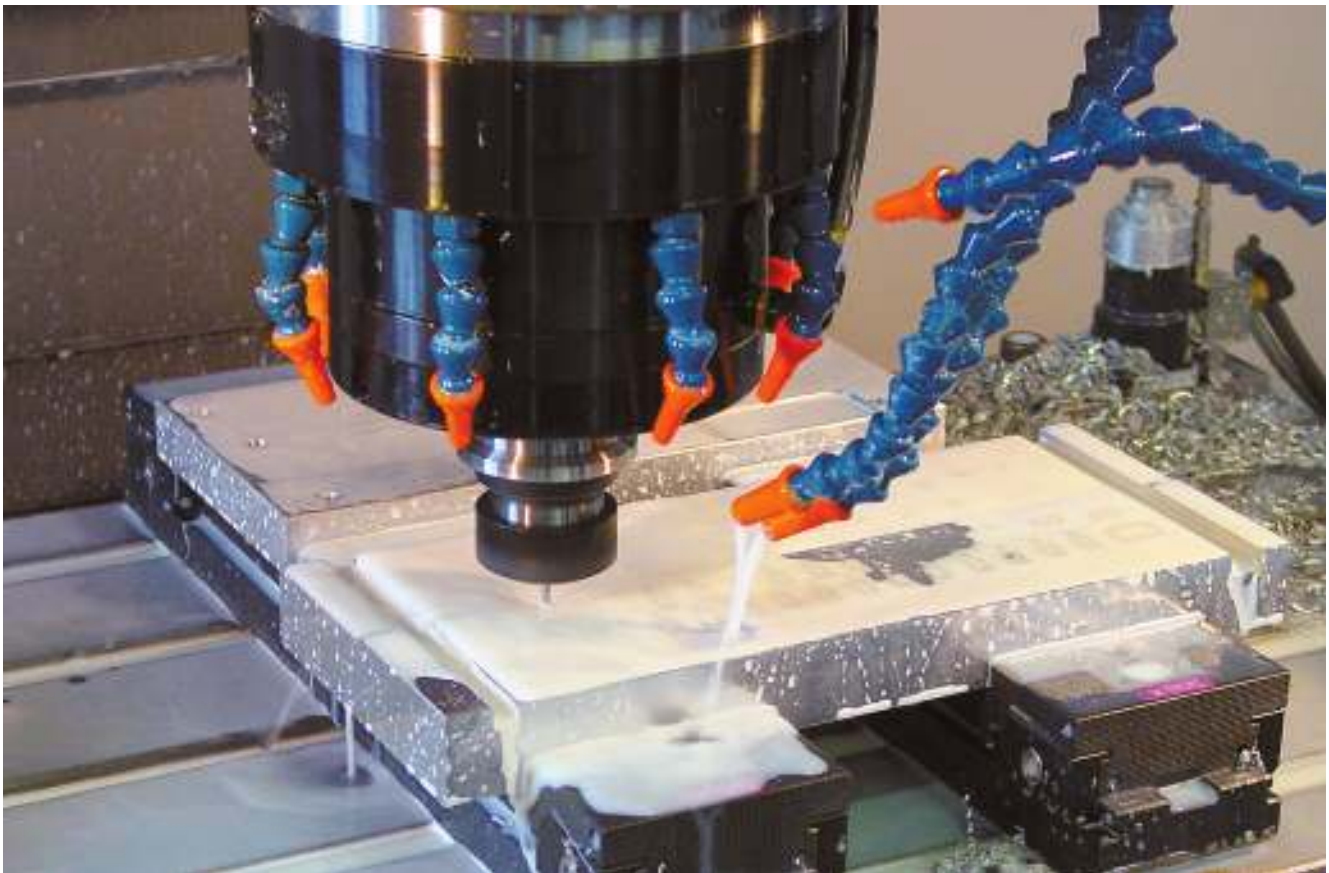
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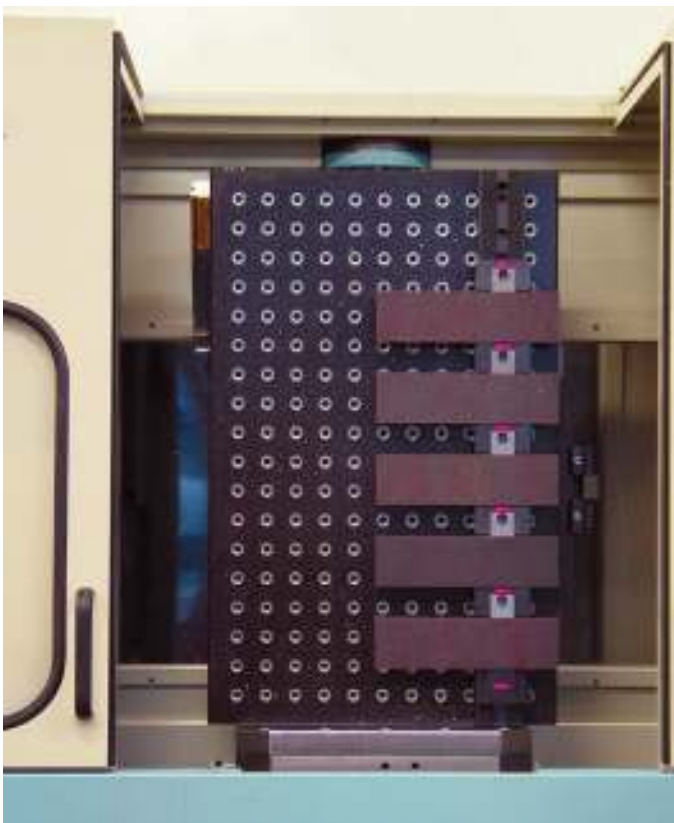
43



44



Einzelspannung von Platten; Schraubstockähnliche Spannung (Bearbeitung einseitig)
 Single clamping of plates; similar to vice machining (single side machining)
 Serrage individuel de plaques; fixation semblable à un étau



Aufspannung mit Power Clamp auf einem Mineralgussturm
 Set up with Power Clamp on a tombstone made of composite concrete
 Serrage avec Power Clamp sur tourelle en fonte minérale



Dreiseitenbearbeitung ab 19 mm
 Three-sided machining beginning at 19 mm
 Usinage à trois côtés dès 19 mm



oppSystem in Anwendung mit Werkstückwechsler
 oppSystem in application with workpiece changer
 oppSystem en application avec le changeur de pièces



5axes powerCLAMP

Modulares Mehrfachspannen auf 5-Achsenmaschinen

Immer öfter werden die 5-Achsenmaschinen in den Produktionsabläufen eingesetzt um den Ansprüchen der heutigen effizienten Herstellung gerecht zu werden und weltweit wettbewerbsfähig zu bleiben. Die Werkstückspannung ist sehr anspruchsvoll und fordert die technischen Mitarbeiter ausserordentlich, wie auf den nachfolgenden Bildern dargestellt.

Vorteile der Triag 5-Achsen Spannungssysteme:

- Die unteren Basisschienen dienen sowohl als mechanisches Nullpunktspannsystem, aber auch als Spannstock.
- Die Spannkraft wirkt direkt beim Werkstück, trotzdem ist das Werkstück ob klein, lang oder gross mit kurzen Werkzeugen sehr gut zugänglich. Die Einschränkung ist der Maschinentisch!
- Bei Dreiseitenbearbeitung ist auch Mehrfachspannung möglich.
- Es können über 50 verschiedene Spannmodule, sowie Rohmodule, Zentrischspanner, Dreibackenfutter, Spannzangenfutter, Vakuumspannmodule usw. aufgesetzt werden. Die Schnittstelle ist immer dieselbe.
- Sehr schnelles Umrüsten!
- Wenig Reinigungsaufwand, da keine T-Nuten vorhanden sind.
- Nicht nur speziell gut für 5-Achsenmaschinen geeignet, alle Teile können auf Horizontal und Vertikalmaschinen genauso gut und universell eingesetzt werden.

Modular workholding system for 5-axis machines

Increasingly, the 5-axis machines are used in the production processes to be in accordance with the demands of today's efficient manufacturing and remain globally competitive. The workpiece clamping is very demanding and calls for extremely technical staff, as shown on the following pictures.

Benefits of Triag 5-axis workholding systems:

- The lower base rails serve both as a mechanical zero-point clamping system, but also as a vice.
- The tension acts directly at the workpiece, the workpiece is still, whether small, long or large, very accessible with short tools. The constraint is the machine table!
- 3-side machining is possible as well.
- There may be placed over 50 different clamping modules, as well as raw modules, self-centering modules, three jaw chuck, collet chuck, vacuum clamping modules and so on. The interface is always the same.
- Very fast setup!
- Reduced cleaning required, since no T-slots available.
- Are not only suitable for 5-axis machines, all parts can be used on horizontal and vertical machines as well and being used universally.

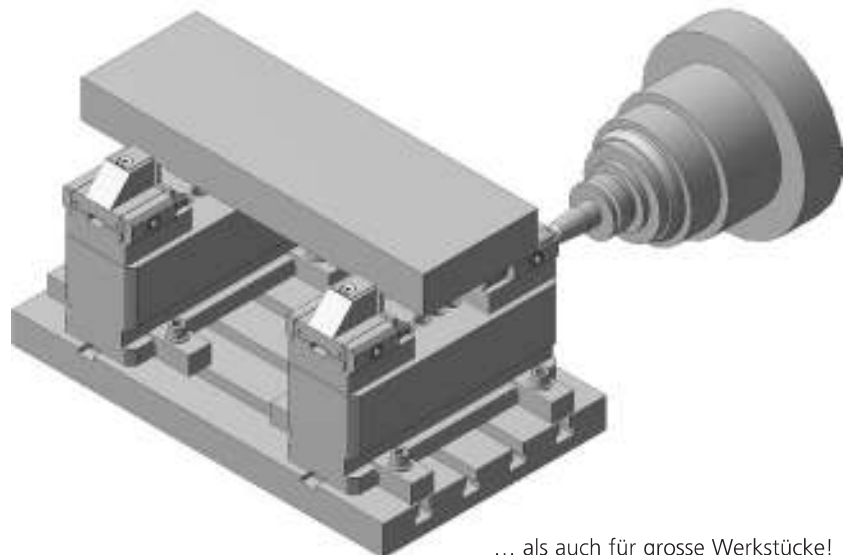
Serrage modulaire modular sur machines à 5 axes

Les machines à 5 axes seront toujours plus souvent introduites dans le marché de la production avec les exigences efficaces d'aujourd'hui dans la fabrication et seront à la hauteur pour rester compétitives mondialement. Le serrage des pièces à usiner est très exigeant et demande des collaborateurs techniques expérimentés, comme représenté sur les images suivantes.

Avantages du système de serrage 5 axes de Triag:

- Le rail de base du dessous sert aussi bien comme point 0 mécanique du système de serrage, que comme étau.
- La force de serrage agit directement vers la pièce, que la pièce soit petite, longue ou grosse, avec des outils courts et un accès facile, la limite est la table de la machine.
- Avec l'usinage sur trois côtés le serrage modulaire est aussi possible.
- Plus de 50 divers modules de serrage, modules d'ébauche, modules centreur, mandrins à trois mors, mandrins pince de serrage, modules de serrage vacuum ect. viendrons s'incruster. L'interface est toujours la même.
- Réajustage et réglage très rapide!
- Peu de temps pour le nettoyage, pas de rainures T sont ici présentes.
- Non seulement recommandé pour les machines à 5 axes, toutes les pièces peuvent être usinées sur machine horizontales et verticales de la même manière. Toujours avec la même interface.

Geeignet sowohl für kleine...
especially suited for small...
recommandé pour des petites pièces...



... als auch für grosse Werkstücke!
... as well as large workpieces!
... et de grandes pièces!

Die Idee des Mehrfachspannens

The idea of multiple workholding

L'idée des serrages multiples



powerCLAMP

Der Spannstock und die Idee des Mehrfachspannens

Für viele Arbeiten ist auch heute noch der „Schraubstock“ das Spannmittel der Wahl. Bei einer einfachen Konfiguration können die Triag Modularspannsysteme auch als Spannstock eingesetzt werden (Bild). Ein solcher Spannstock kann später zu einem Mehrfachspannsystem erweitert werden. Alle Teile der Grundkonfiguration können weiterverwendet werden. Allfällige defekte Teile können problemlos ersetzt werden.

The machine vise and the idea of multiple workholding

For many machining tasks the conventional vise is still the favorite choice. If the batch has only a few parts the TRIAG multiple workholding systems can also be used as a simple machine vise (note picture). Should the need for a multiple workholding device arise at a later time, as a larger batch has to be machined for example, it is a matter of adding a few extra vise modules to do the job. All the components of the starter set may be used for the multiple layout. Consequently for future vise acquisitions only TRIAG multiple starter sets should be considered.

L'étau et l'idée des serrages multiples

Pour beaucoup de travaux l'étau est encore aujourd'hui le choix pour la fixation. Pour une configuration simple le système de serrage multiple de Triag peut aussi être utilisé comme étau (voir photo de droite) Un étau de ce genre peut être rapidement agrandi en système de serrage multiple. Toutes les pièces de la configuration peuvent être utilisées par la suite. Les pièces usées peuvent être remplacées facilement.



Power Clamp

Beim Power Clamp ermöglicht eine Verzahnung mit 2 mm-Teilung auf der Basisschiene ein schnelles und genaues Positionieren der Spann- und Anschlagmodule. Im Gegensatz zum Compact Clamp und vielen anderen Spannsystemen auf dem Markt, werden nicht vier Befestigungsschrauben pro Modul verwendet, sondern eine quer eingebaute Spindel. Diese, mit einem Rechts- und einem Linksgewinde versehen, zieht zwei mit schiefen Ebenen versehene Platten zusammen. Mit dem Anziehen und Lösen dieser Spindel kann das Modul schnell umplatziert werden. Da die Spindel von beiden Seiten her zugänglich ist, können die Spannsysteme dicht beieinander platziert werden. Die Module werden von beiden Seiten her mit einer Kraft von 150'000 N auf die Basisschiene hinuntergezogen.

On the Power Clamp, teeth serrations (2 mm spacing) on the base rail allow exact positioning of the vise and end modules. In contrast to the Compact Clamp and many other clamping systems on the market, in which four hold down screws are necessary for each module, one transverse spindle is used. This central spindle, which has a right-handed and a left-handed thread, pulls two plates with angled faces together. These plates then lock the vise modules onto the base rail with a force of 150 kN on either side creating a solid bond between the two components. This feature allows very fast repositioning of the vise modules. Therefore setting up Power Clamp is accomplished within seconds particularly if the magnetic scale is being used. The spindle is accessible from both sides, so that the modules can easily be repositioned, even though adjacent clamping systems are very close.

Avec le Power Clamp vous avez à disposition une denture sur le rail de base avec un pas de positionnement de 2 mm qui vous permet rapidement et avec précision de positionner le module de serrage et d'appui sur le rail de base. Au contraire du Compact Clamp ou d'autres systèmes de serrage sur le marché ou vous avez quatre vis à serrer par module, le système Power Clamp est muni d'une seule vis transversale avec un filetage gauche et droite et deux pièces d'ancrage qui fixe le module sur le rail de base. En serrant ou desserrant cette vis vous avez rapidement déplacé votre module. Etant donné que vous pouvez atteindre cette vis des deux côtés vous pouvez placer vos deux étaux tout près l'un de l'autre et de ce fait vous économisez beaucoup de place. Les deux modules sont tirés vers le bas des deux côtés avec une force de 150'000 N sur le rail de base.



1.

eine Schraube lösen
unscrew
déserrer une vis



2.

abheben und neu plazieren
lift and change position
enlever et repositionner le module



3.

eine Schraube anziehen
fasten one screw
serrer une vis



ACHTUNG / CAUTION / ATTENTION

WICHTIG: Die angegebenen Drehmomente sind die absoluten Maximalwerte. Über die Spannkraften 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.

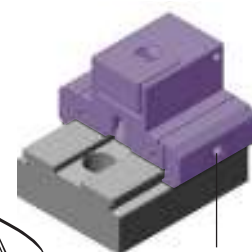
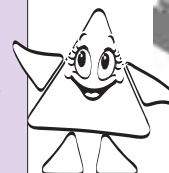
IMPORTANT: Les valeurs des couples de torsion mentionnés sont les valeurs maximales absolues. Pour les forces de serrage vous pouvez vous référer à la table ci-dessous.

Schraube Screw Vis	Drehmoment Torque Couple de torsion		Spannkraft Workholding force Force de serrage			
	Nm	(lb-ft)	daN	(lb)	t	
M5 + M6	4	3	500	1100	0,50	
	5	3,7	580	1300	0,58	
	6	4,4	690	1500	0,69	
	7	5,2	780	1700	0,78	
	8	5,9	880	1930	0,88	
	9	6,6	980	2150	0,98	
M6	10	7,4	1020	2240	1,02	
	12	8,9	1220	2680	1,22	
	14	10,4	1450	3200	1,45	
M8	15	11	1520	3340	1,52	
	4	3	410	900	0,41	
	5	3,7	490	1080	0,49	
M8	6	4,4	560	1200	0,56	
	7	5,2	660	1450	0,66	
	8	5,9	730	1600	0,73	
	9	6,6	810	1790	0,81	
	10	7,4	900	1980	0,90	
	15	11	1520	3340	1,52	
	20	14,8	1810	4000	1,81	
	25	18,4	2100	4600	2,10	
	M10	10	7,4	400	890	0,40
		20	14,8	1400	3080	1,40
30		22,1	2000	4400	2,00	
40		29,5	2800	6150	2,80	

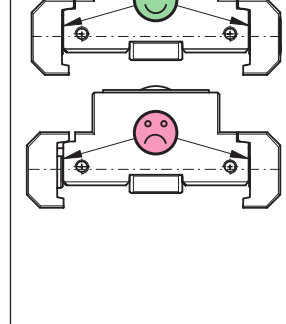
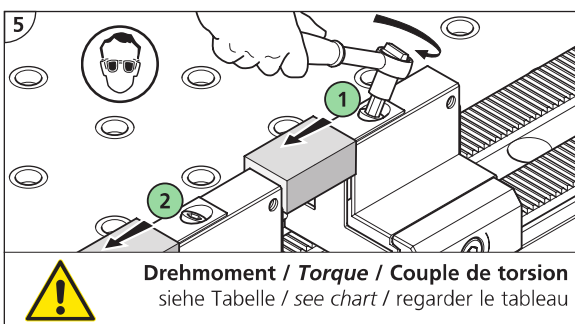
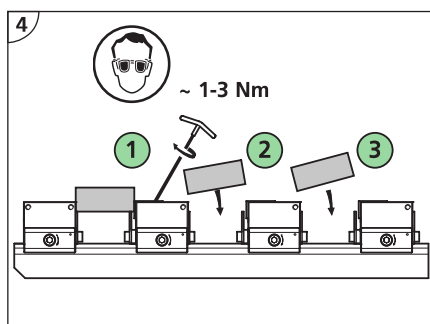
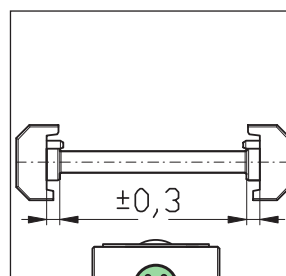
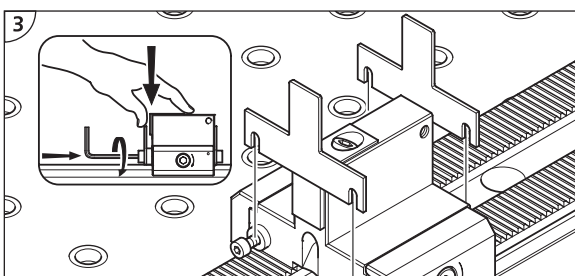
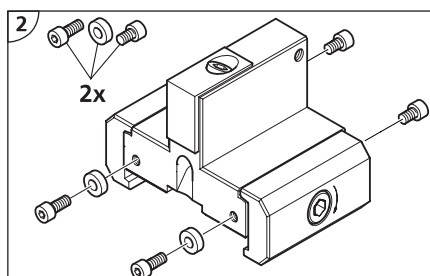
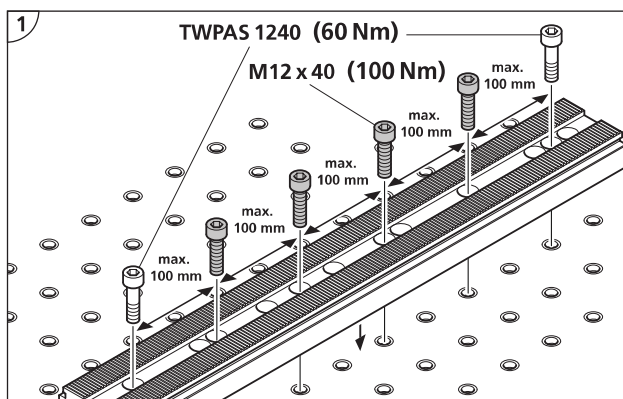
Spannbacken und Schrauben regelmässig fetten!

Lubricate clamping jaw and screw regularly with grease!

lubrifiez le mors et les vis régulièrement!



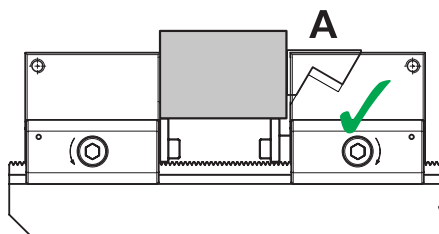
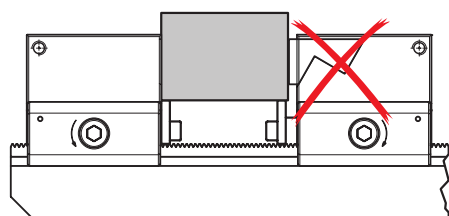
25 Nm

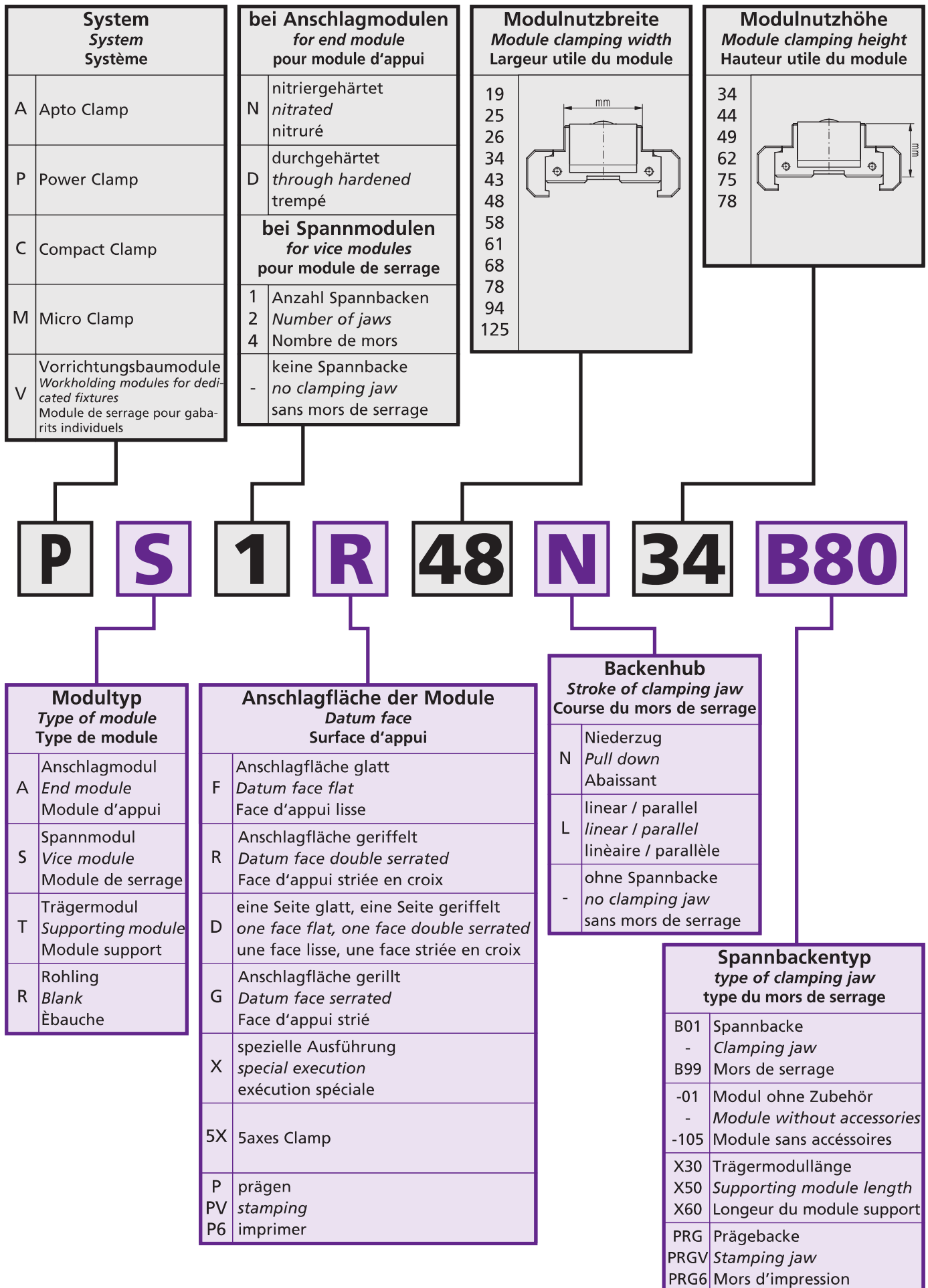


WICHTIG: Vor dem Positionieren der Spannmodule für ein neues Werkstück, ist die Spannbacke ganz zurück zu stellen, dies gewährleistet eine sichere Spannung (siehe Bild A)!

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)!







Die Basisschiene ist die Grundlage des Power Clamp Spannsystems

Der Einsatz der Basisschiene als Modularspannstock ist jedem Mechaniker ein Begriff. Die Vorteile ihres Einsatzes als mechanisches Nullpunktsystem sind in der Zwischenzeit ebenfalls ins Planungsdenken der mechanischen Fertigung eingeflossen.

Die Power Clamp-Schiene dient als Basis für über 60 verschiedene Spannmodule, Zentrischspanner, Rohlingsmodule und Vakuumplatten.

Die Basisschienen sind auch in Zoll erhältlich. www.triag.ch/inch

The serrated base rail is the basic structure of the Power Clamp workholding system

Using the base rail as a modular workholding vise is standard practice to any mechanic. The advantages of using it as a zero point system have also widely influenced the planning stages of mechanical production.

The Power Clamp base rail serves as a supporting plate for more than 60 different clamping modules, self centering vises, blank modules and vacuum clamping plates.

The base rails are also available in inches version. www.triag.ch/inch

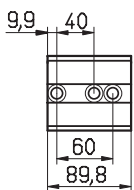
Le rail de base est le fondement du système de serrage Power Clamp

L'utilisation du rail de base comme étau modulaire est pour chaque mécanicien un concept. Les avantages des utilisations comme système point zéro mécanique.

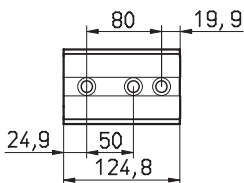
Comme base le rail Power Clamp s'utilise pour plus de 60 modules de serrage différents; serrage centreur, modules ébauches et table vacuum.

Les rails de base sont également disponibles en pouces. www.triag.ch/inch

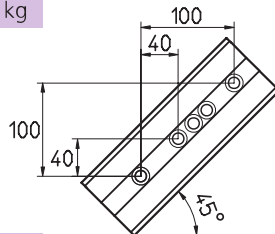
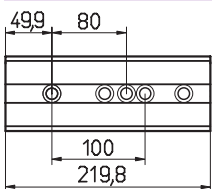
PCB 60-90 1,8 kg



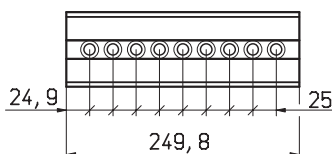
PCB 40-50-125 2,3 kg



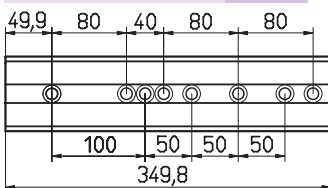
PCB 40-50-220-W2 4,3 kg



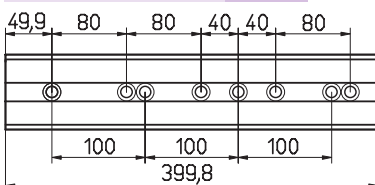
PCB 25-50-250 4,8 kg



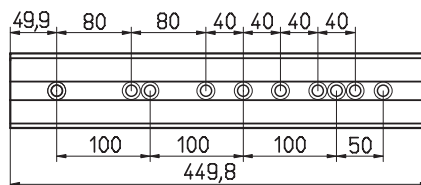
PCB 40-50-350 6,9 kg



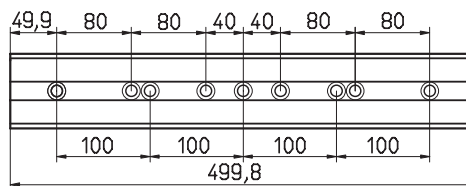
PCB 40-50-400 7,9 kg



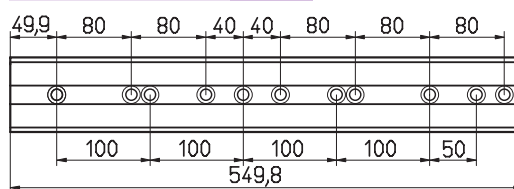
PCB 40-50-450 8,9 kg



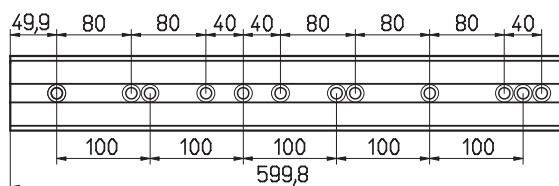
PCB 40-50-500 9,9 kg



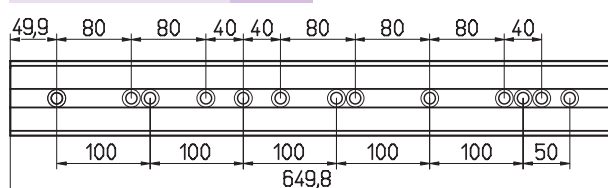
PCB 40-50-550 10,8 kg



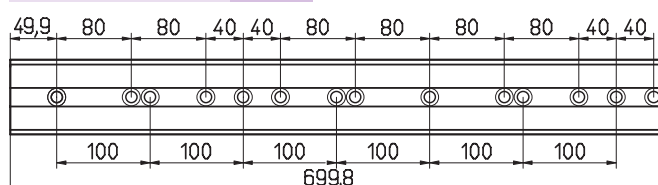
PCB 40-50-600 11,8 kg



PCB 40-50-650 12,8 kg

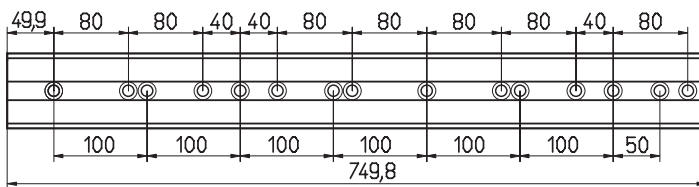


PCB 40-50-700 13,8 kg

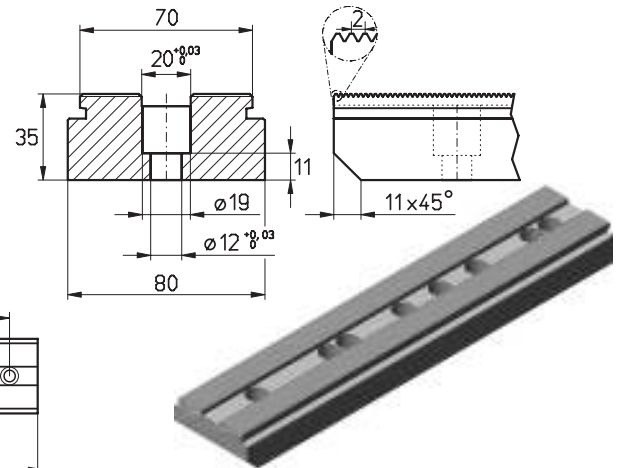
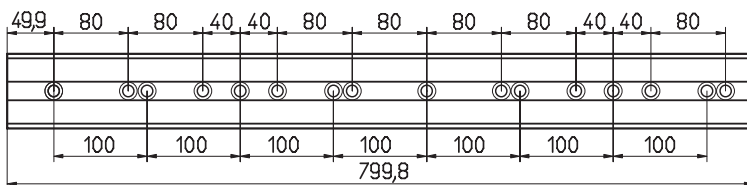




PCB 40-50-750 14,8 kg



PCB 40-50-800 15,3 kg



Kupplungsstücke für PCB Basisschiene *Coupling element for PCB base rails*

Mit diesen Kupplungsstücken ist es möglich, die PCB Basisschienen zu verlängern. Aufgrund des durchgängigen Kraftschlusses wird eine übermäßige Belastung des Mineralgussturmes vermieden. Erforderlich ist eine Modifikation der Enden der Basisschienen gemäss der untenstehenden Zeichnung durch den Anwender. Selbstverständlich können neue Schienen bereits mit dieser Modifikation ausgeliefert werden.

So können die zwei Kupplungsstücke montiert werden, die nach dem Platzieren der Schienen eingesetzt und festgezogen werden. Eine zusätzliche Schraube (B) mit Federring nimmt allfällige, senkrecht zur Befestigungsfläche auftretende Kräfte auf.

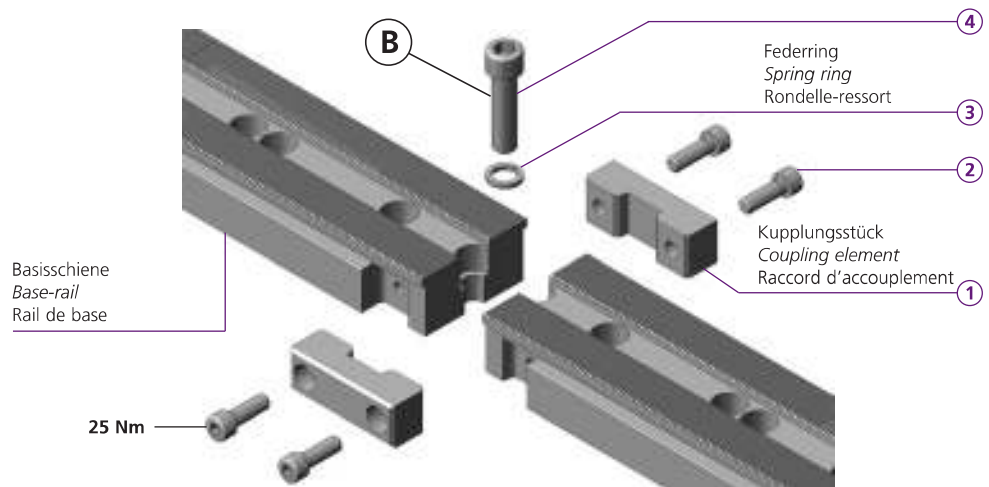
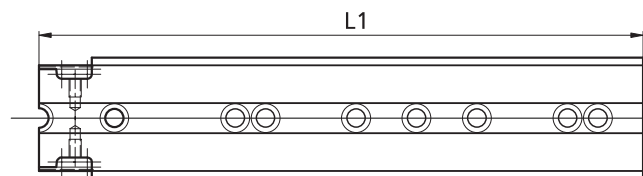
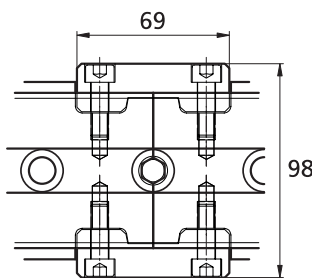
With this coupling element, it is possible to extend the PCB base rail by a second rail. Due to the frictional connection, the behaviour of the associated items is approximate to the behaviour of a continuous rail. A modification according to the drawing below (made by the customer) is required at the end of the base rails.

New base rails can be supplied with this modification. So the two coupling elements can be placed between the base rails. An additional screw (B) with a spring ring is taken the force flatwise to the seating.

Raccord d'accouplement pour rail de base PCB

Avec ce raccord d'accouplement il est possible de rallonger le rail de base PCB avec un deuxième rail. A cause de l'adhérence on a la garantie que les pièces assemblées se comportent comme un rail continu. On a besoin d'une modification au bout des rails de base (fait par l'utilisateur). Des nouveaux rails de base peuvent être livré avec cette modification.

Ainsi les modules peuvent être placé entre les deux rails de bases. Une vis (B) additionnelle avec une rondelle-ressort absorbent la force perpendiculairement par la surface.



PCBP 69 SET

- ① 2x PCBP 69
- ② 4x M8x25 ISO 4762
- ③ 1x M12 BN772
- ④ 1x M12x45 ISO 4762
- kg 0,4

PCB 4050400KP

- L1 400
- kg 7,9

PCB 4050450KP

- L1 450
- kg 8,9

PCB 4050500KP

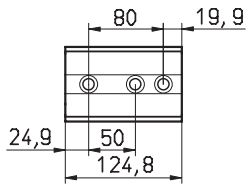
- L1 500
- kg 9,9

PCB 4050650KP

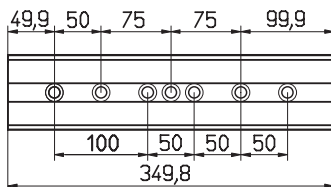
- L1 650
- kg 12,8



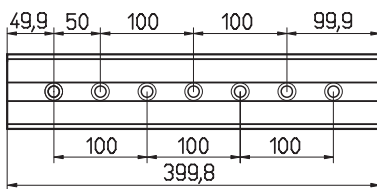
PCB 40-50-125 H80 7,5 kg



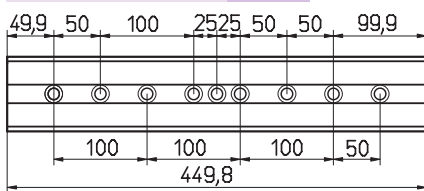
PCB 50-350 H80 15,8 kg



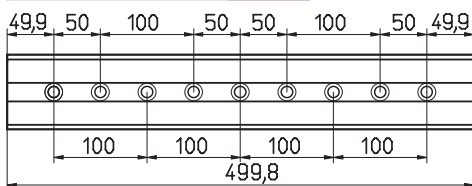
PCB 50-400 H80 18,2 kg



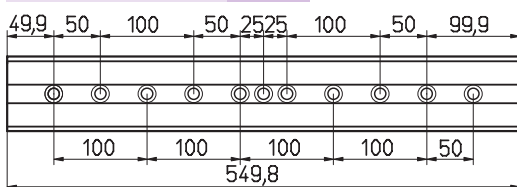
PCB 50-450 H80 20,3 kg



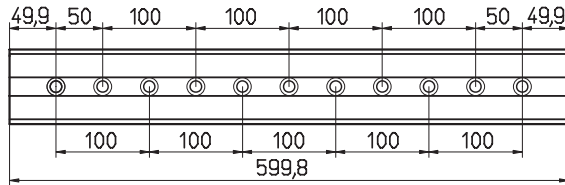
PCB 50-500 H80 22,8 kg



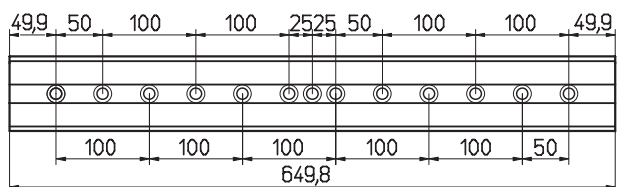
PCB 50-550 H80 24,8 kg



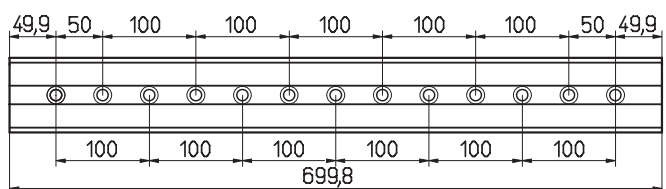
PCB 50-600 H80 27,3 kg



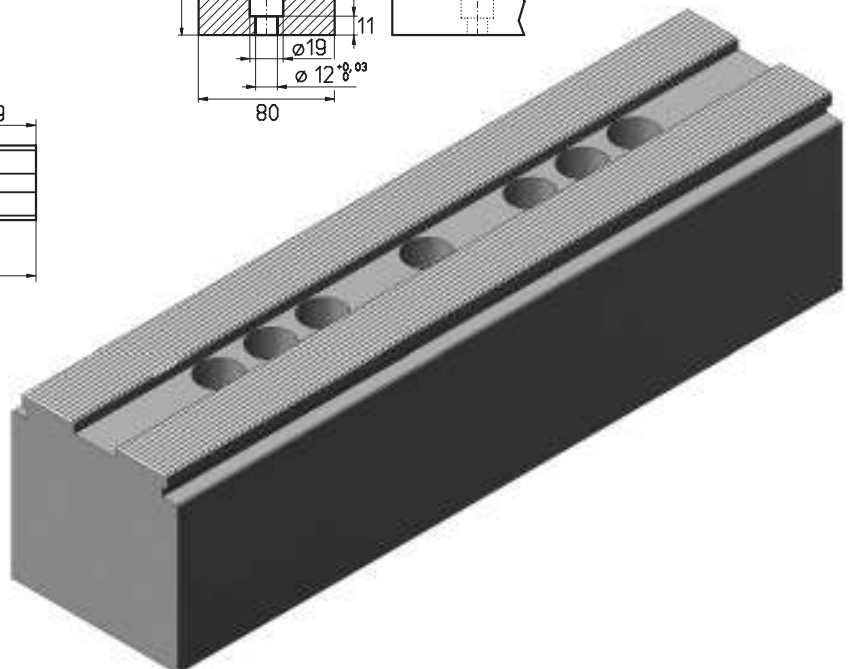
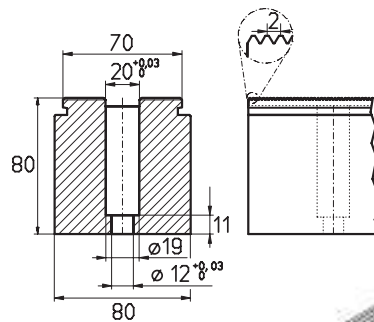
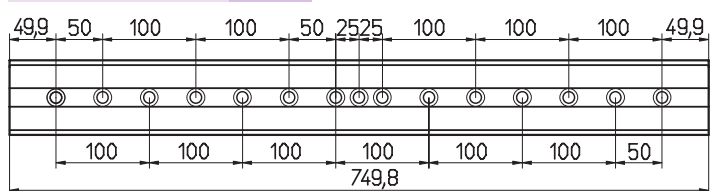
PCB 50-650 H80 29,4 kg



PCB 50-700 H80 31,8 kg

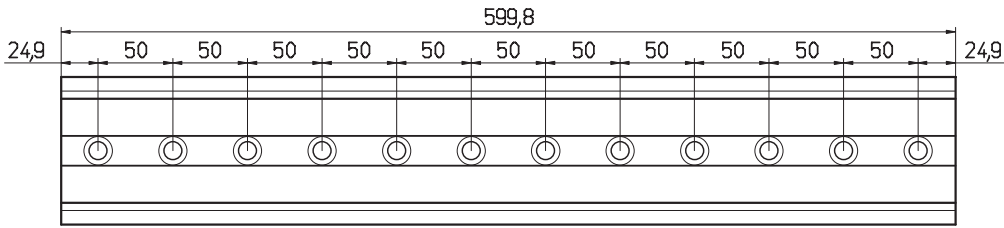


PCB 50-750 H80 33,9 kg

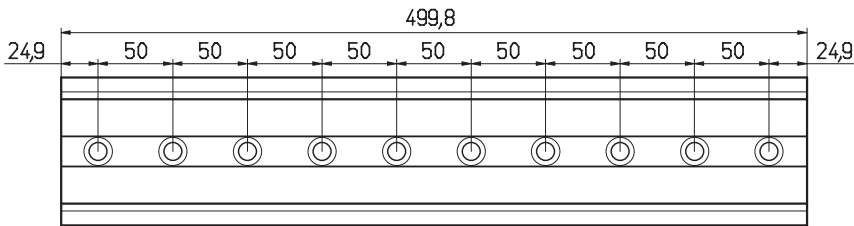


Basisschiene Stahl-Mineralguss
Base-rail steel-epoxy mineral tombstones
Rail de base tourelles acier-fonte minérale coulée

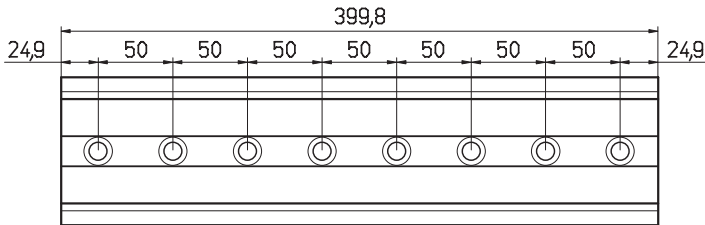
PCMB 50-600 H175 39 kg



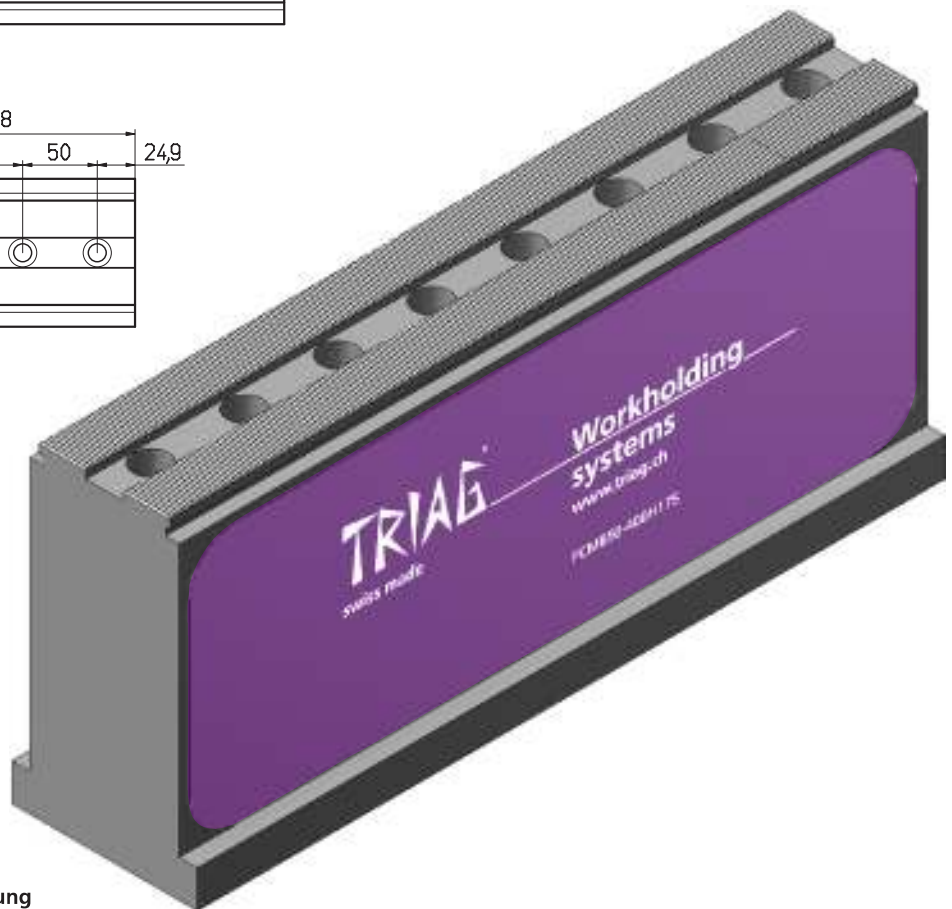
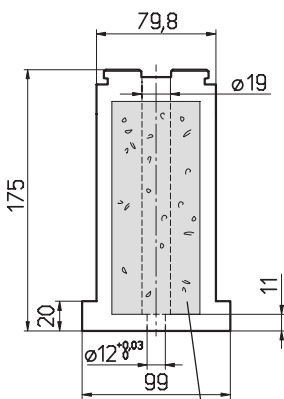
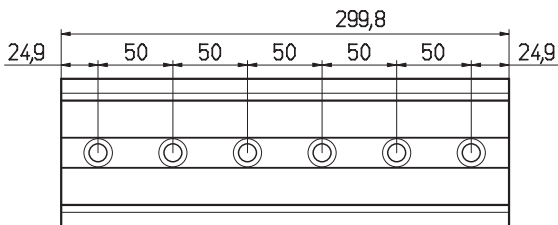
PCMB 50-500 H175 34 kg



PCMB 50-400 H175 27 kg



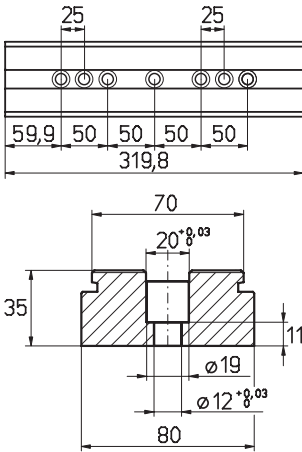
PCMB 50-300 H175 22 kg



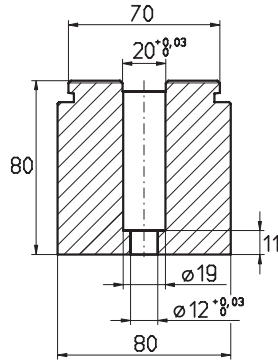
Epoxy Mineral
 für gute Vibrationsdämpfung
 for brilliant dampening effect
 pour athé mutation des vibrations excellente



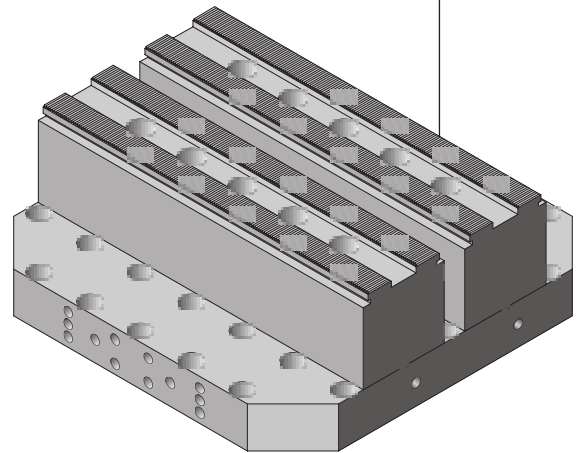
PCB 50-320 6,0 kg



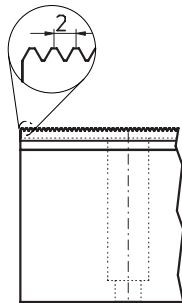
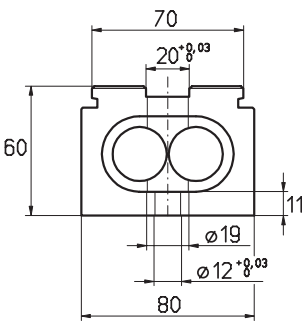
PCB 50-320 H80 14,4 kg



EROWA UPC R 50
ER 018570 / ER 016003



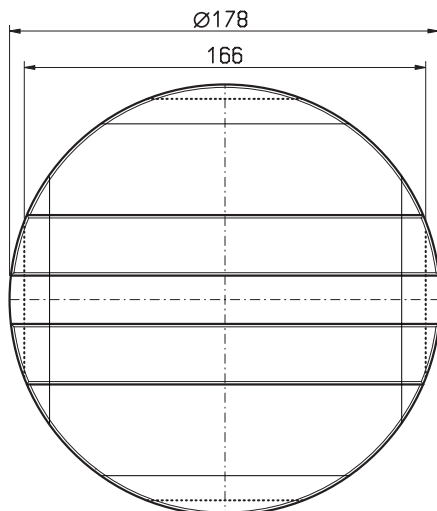
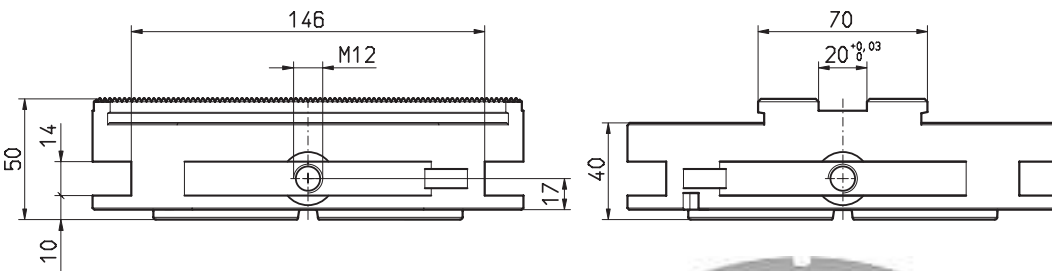
PCB 50-320 H60 6,9 kg



Bestellbeispiel / ordering example / exemple de commande: PCB 50-320 H80

Basis mit integrierter 0-Punkt Index Aufnahme oppSystem
Base rail with integrated oppSystem index
Base avec point 0 intégré et réception oppSysteme indexé

OPA 11D PCB D 178 ~ 7 kg



TRIAG oppSystem
PAROTEC
PARTOOL



Bestellbeispiel / ordering example / exemple de commande: OPA 11D PCB 178

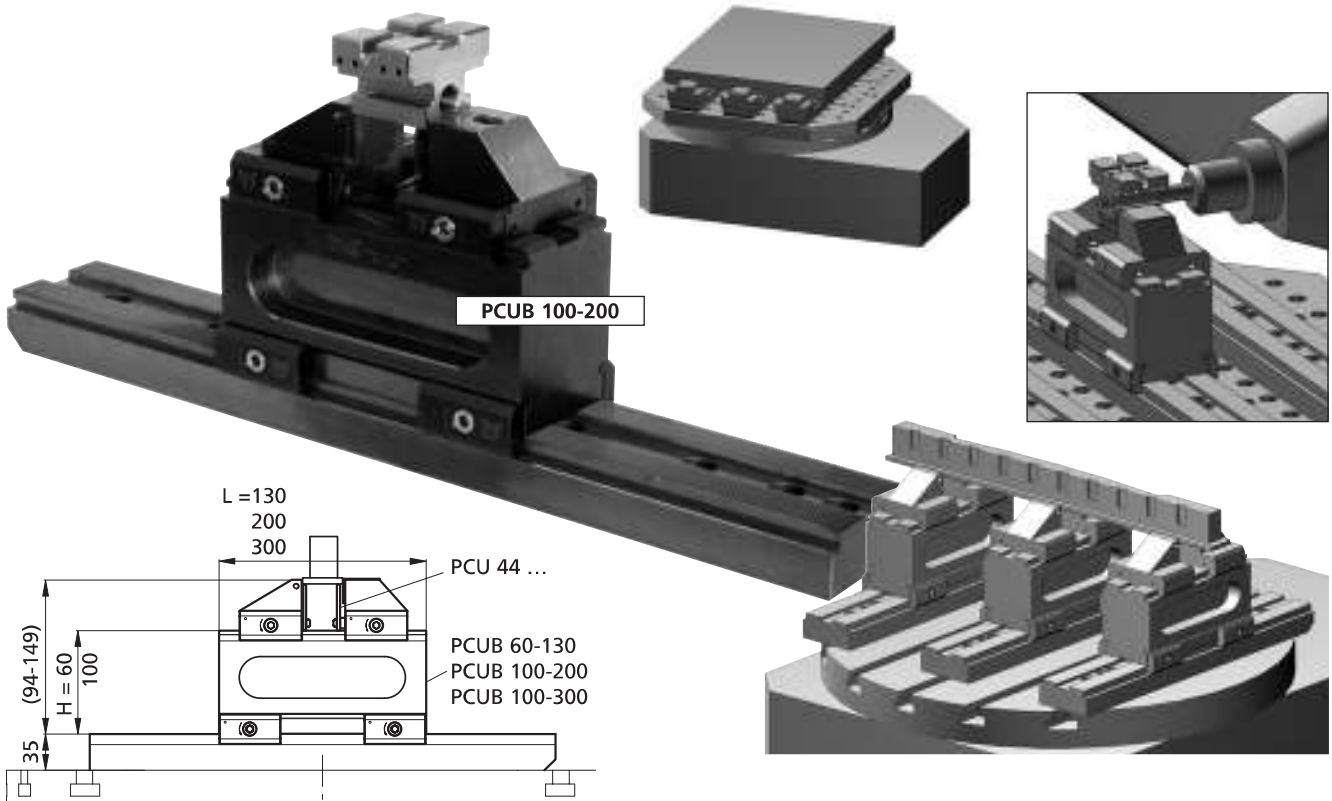
5-Achsenmaschinen Erhöhung

5-axes machines riser

Rehaussement pour machine 5 axes



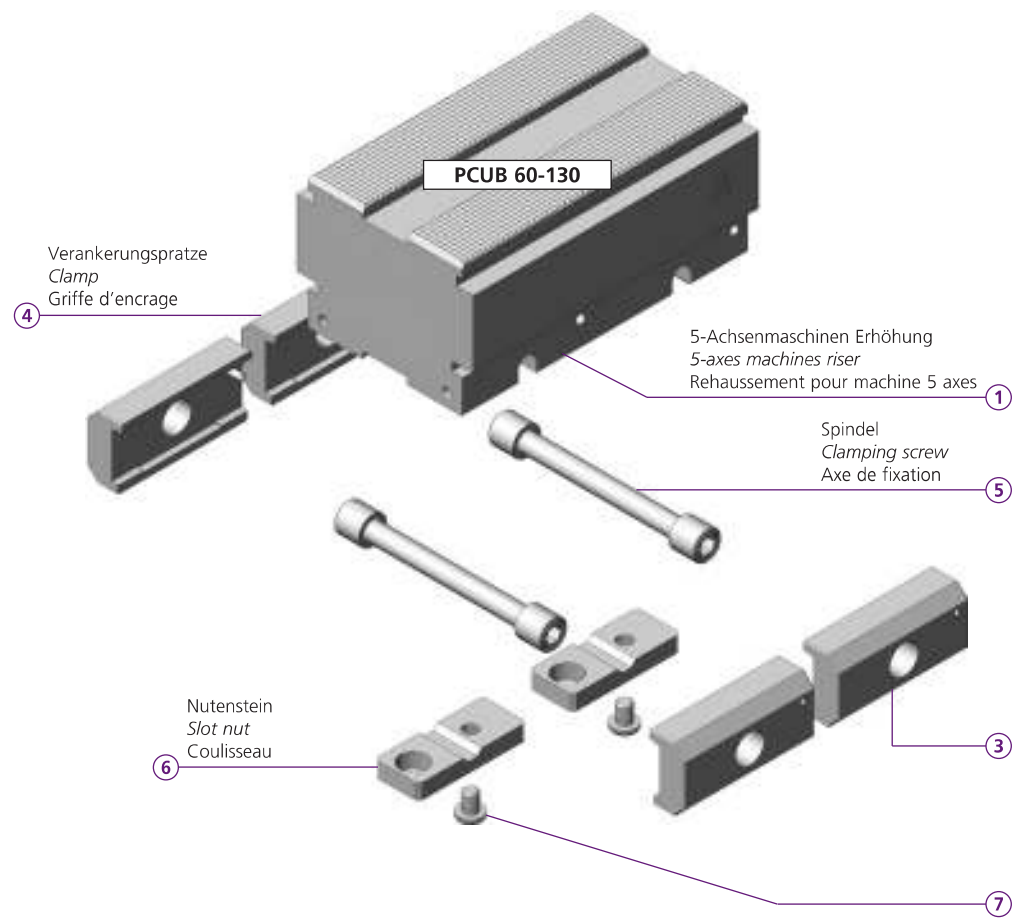
powerCLAMP



- PCUB 60-130**
- ① 1x PCUB 60-130
 - ③ 2x PCSP 60R
 - ④ 2x PCSP 60L
 - ⑤ 2x PCS 14
 - ⑥ 2x PCGU 20 49
 - ⑦ 2x M6x8 ISO 7380
 - L = 130
 - H = 60
 - kg 5,8

- PCUB 100-200**
- ① 1x PCUB 100-200
 - ③ 2x PCSP 60R
 - ④ 2x PCSP 60L
 - ⑤ 2x PCS 14
 - ⑥ 2x PCGU 20 49
 - ⑦ 2x M6x8 ISO 7380
 - L = 200
 - H = 100
 - kg 10,5

- PCUB 100-300**
- ① 1x PCUB 100-300
 - ③ 3x PCSP 60R
 - ④ 3x PCSP 60L
 - ⑤ 3x PCS 14
 - ⑥ 3x PCGU 20 49
 - ⑦ 3x M6x8 ISO 7380
 - L = 300
 - H = 100
 - kg 16



Bestellbeispiel / ordering example / exemple de commande: PCUB 100-200

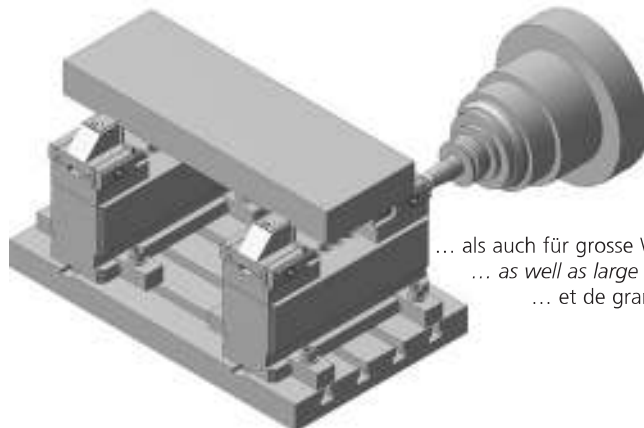
5AX 28-115AL - R20 SET

5AX 28-115ST - R20 SET

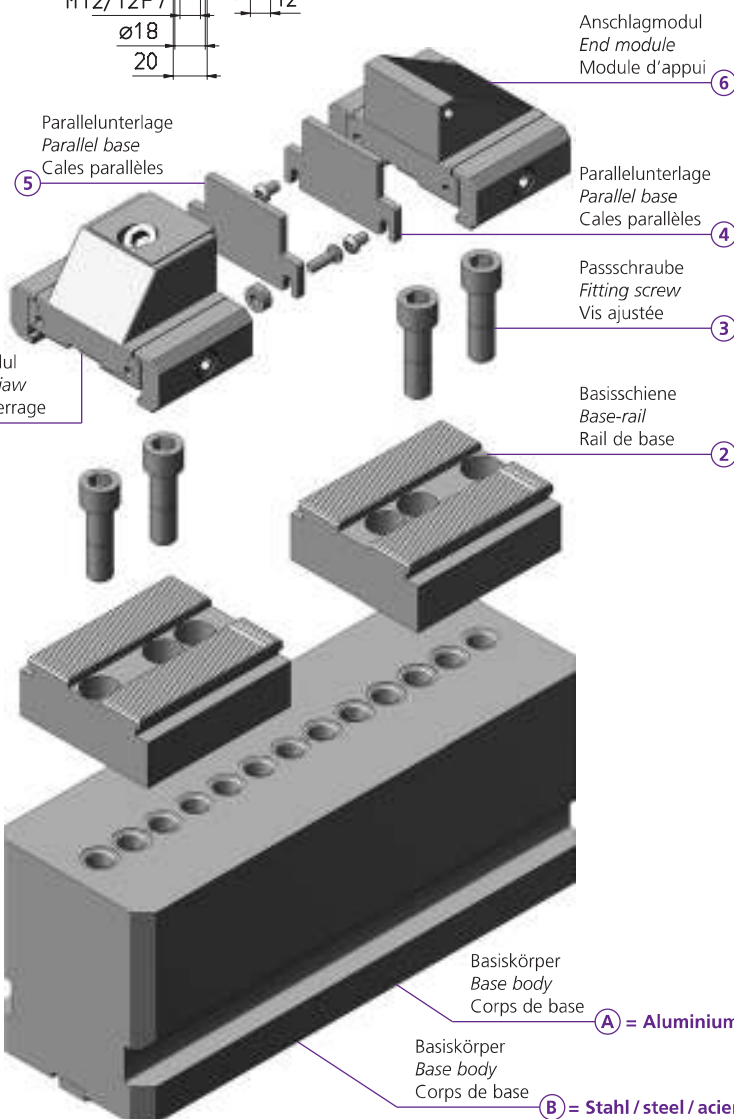
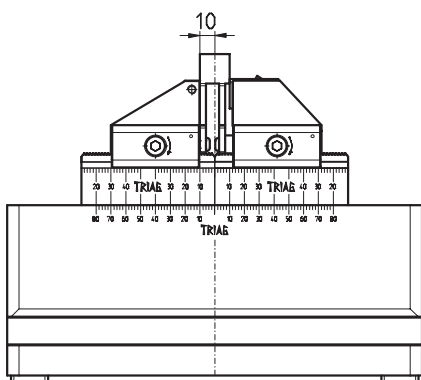
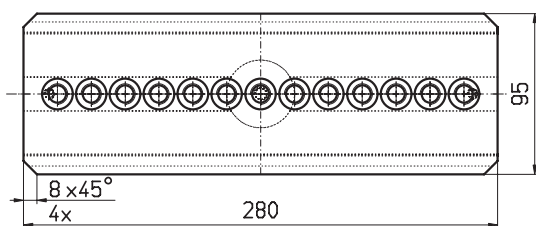
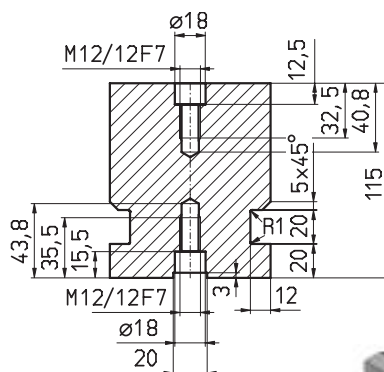
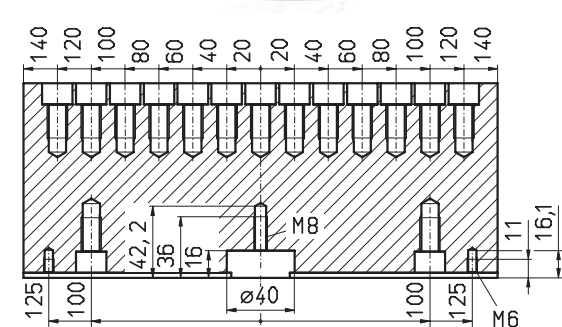


powerCLAMP

Geeignet sowohl für kleine...
especially suited for small...
 recommandé pour des petites pièces...



... als auch für grosse Werkstücke!
... as well as large workpieces!
 ... et de grandes pièces!



Anschlagmodul
 End module
 Module d'appui ⑥

Parallellunterlage
 Parallel base
 Cales parallèles ⑤

Parallellunterlage
 Parallel base
 Cales parallèles ④

Passschraube
 Fitting screw
 Vis ajustée ③

Spannmodul
 Clamping jaw
 Mors de serrage ⑦

Basisschiene
 Base-rail
 Rail de base ②

Basiskörper
 Base body
 Corps de base ① = Aluminium

Basiskörper
 Base body
 Corps de base ② = Stahl / steel / acier

5AX 28-115AL - R20 SET	
①	1x 5AX 28-115AL R20
②	2x PCB 6090
③	4x TWPAS 1240
④	2x PCU 39047
	2x PCU 44047
⑥	1x PA5X 48-49R
⑦	1x PS5X 48N49 B81
kg	14

5AX 28-115ST - R20 SET	
①	1x 5AX 28-115ST R20
②	2x PCB 6090
③	4x TWPAS 1240
④	2x PCU 39047
	2x PCU 44047
⑥	1x PA5X 48-49R
⑦	1x PS5X 48N49 B81
kg	28,3

Bestellbeispiel
 ordering example
 exemple de commande: **5AX 28-115AL-R20 SET**

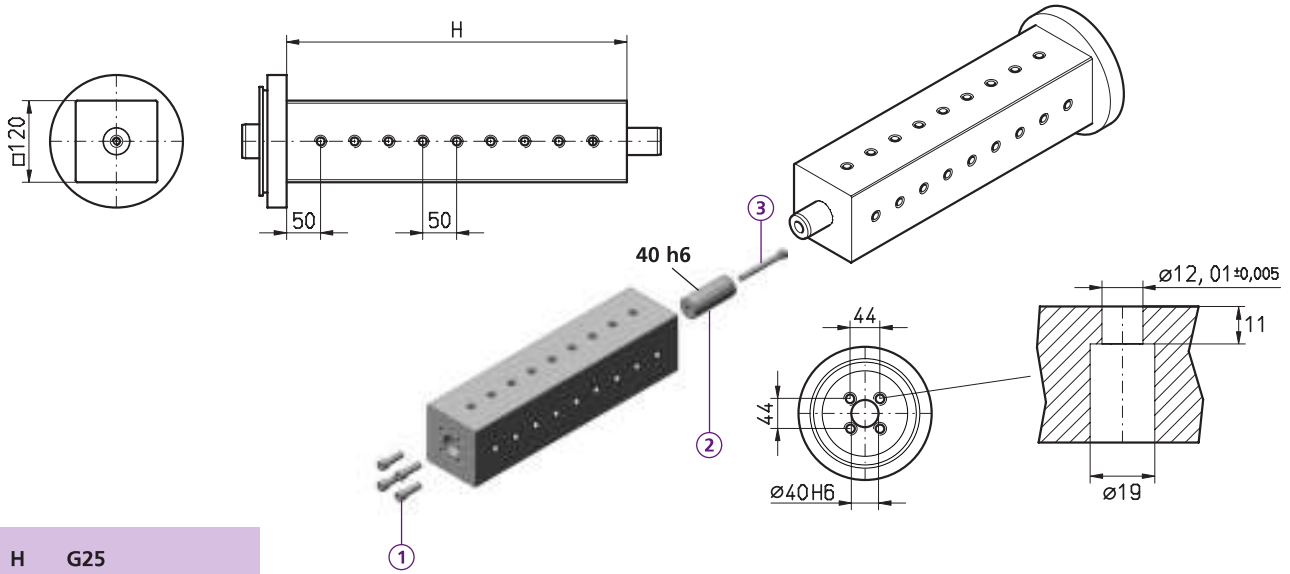
Balken zu Teilapparat

Trunion for indexer

Poutre pour diviseur



powerCLAMP



H	G25
350	PCRT 120-350-G25
400	PCRT 120-400-G25
450	PCRT 120-450-G25
500	PCRT 120-500-G25
550	PCRT 120-550-G25
600	PCRT 120-600-G25
650	PCRT 120-650-G25

- ① 2x TWPAS 1240 + 2x M12x40
- ② 1x PCTBO 40100
- ③ 1x M10x100 ISO 4762

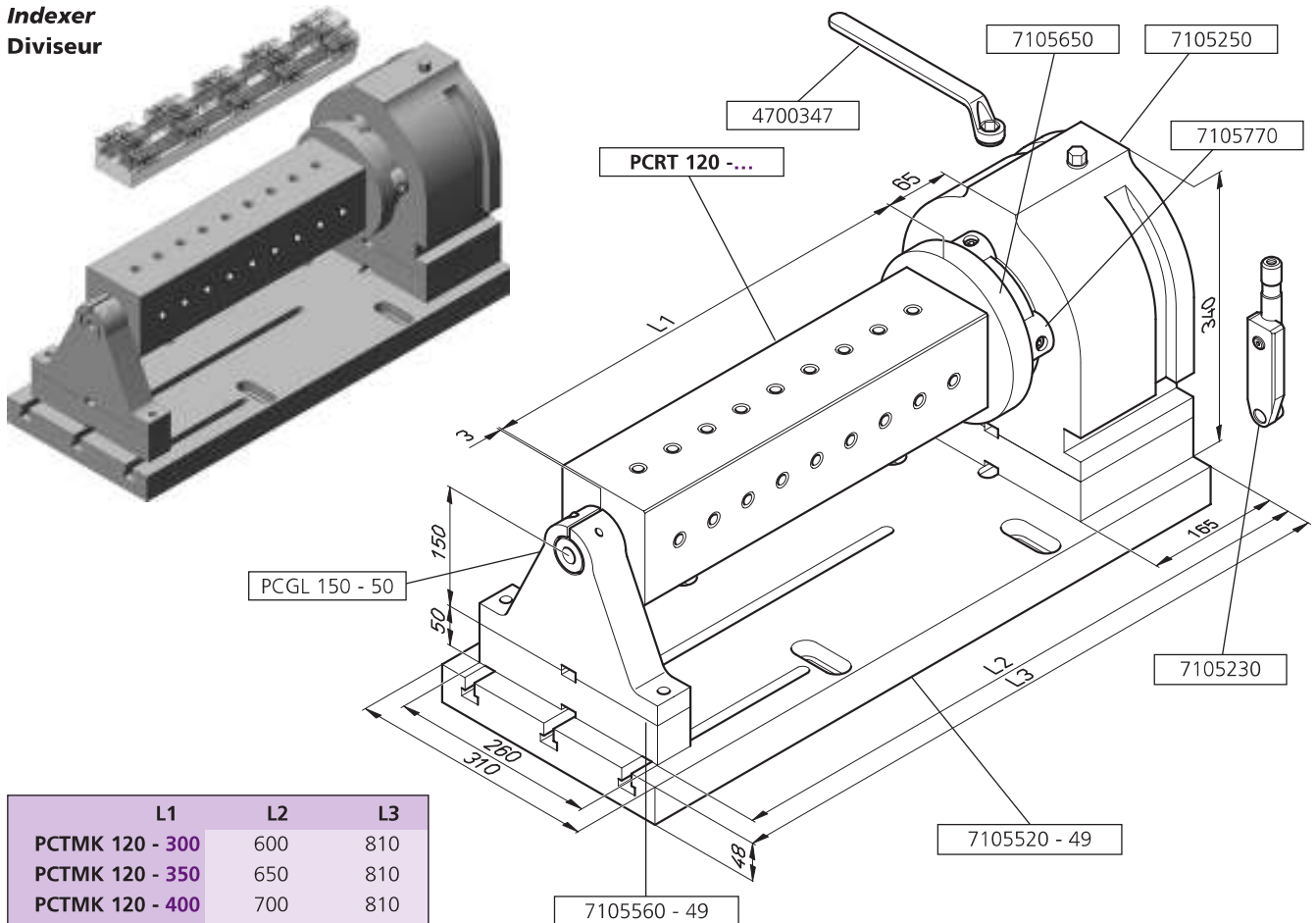
H	
350	PCRT 120-350-ALU
400	PCRT 120-400-ALU
450	PCRT 120-450-ALU
500	PCRT 120-500-ALU

Bestellbeispiel / ordering example / exemple de commande: PCRT 120-350-G25

Teilapparat

Indexer

Diviseur



	L1	L2	L3
PCTMK 120 - 300	600	810	
PCTMK 120 - 350	650	810	
PCTMK 120 - 400	700	810	
PCTMK 120 - 450	750	810	
PCTMK 120 - 500	800	810	
*PCTMK 120 - 550	850	960	
*PCTMK 120 - 600	900	960	
*PCTMK 120 - 650	950	960	

Bestellbeispiel / ordering example / exemple de commande: PCTMK 120-300

* entspricht nicht der Abbildung / does not correspond to the illustration / ne correspond pas à l'illustration



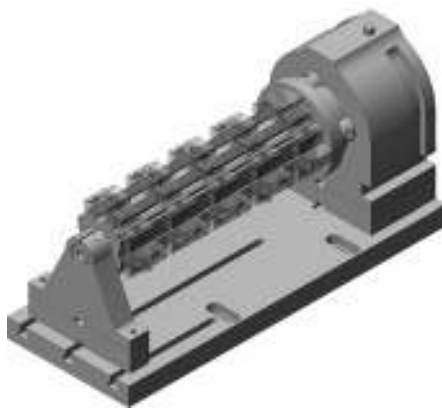
PS1R		ØD	PCT		L	kg
PS1R 26N49	B26	224	PCT 110-300	~27		
PS1R 34N49	B45	224	PCT 110-350	~32		
PS1R 43N49	B60	224	PCT 110-400	~37		
PS1R 48N34	B80	195	PCT 110-450	~41		
PS1R 94N34	B80	211	PCT 110-500	~45		
PS1R 94N34	B90	214	PCT 110-550	~50		
PS1R 94N49	B60	238	PCT 110-600	~55		
PS1R 94N49	B90	241	PCT 110-650	~59		
PS1R 125N49	B95	255				
PS2R 61N34	B45	199				

Monobloc Power Clamp 110 x 110 x ...

- 2x TWPAS 1240
- 2x M12x40
- 1x PCTBO 40100
- 1x M10x100 ISO 4762

Bestellbeispiel / ordering example / exemple de commande: PCT 110-500

Teilapparat / PC Monobloc
Indexing device / PC Monobloc
Diviseur / PC Monobloc



TK 150 FL 160
 7105250
 4700347
 53
 PCT 110 - ...
 L1
 7105770
 340
 155
 7105230
 7105520 - 49
 7105560 - 49
 150
 50
 260
 310
 48
 L2
 L3

	L1	L2	L3
TKPC 110 - 300	582	810	
TKPC 110 - 350	632	810	
TKPC 110 - 400	682	810	
TKPC 110 - 450	732	810	
TKPC 110 - 500	782	810	
*TKPC 110 - 550	832	960	
*TKPC 110 - 600	882	960	
*TKPC 110 - 650	932	960	

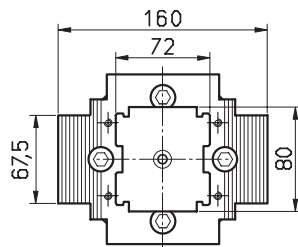
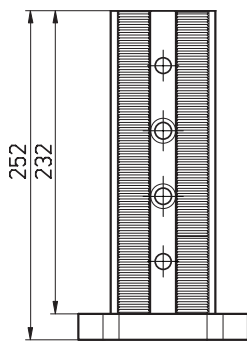
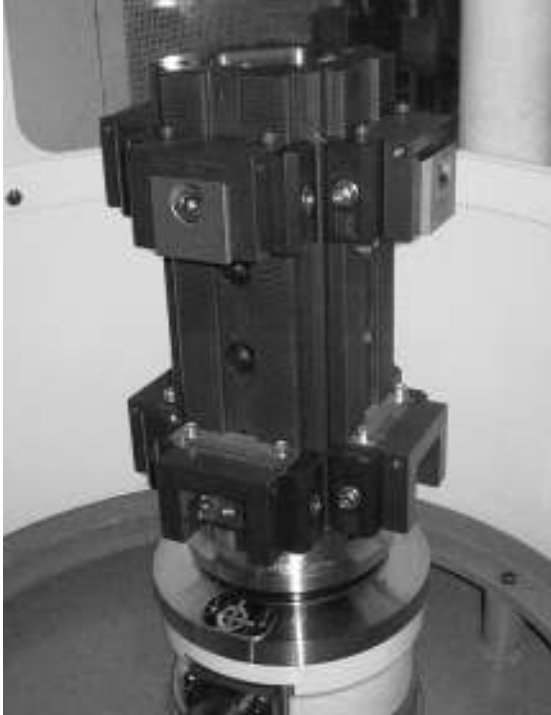
Bestellbeispiel / ordering example / exemple de commande: TKPC 110-500

* entspricht nicht der Abbildung / does not correspond to the illustration / ne correspond pas à l'illustration

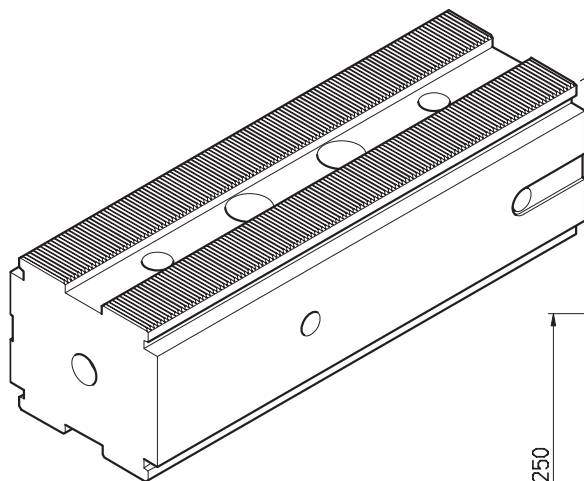
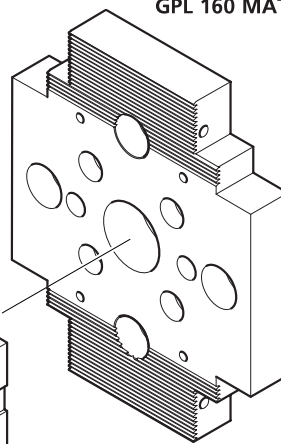
Spannturm zu Matsuura
Tombestone for Matsuura
Tourelle de serrage pour Matsuura



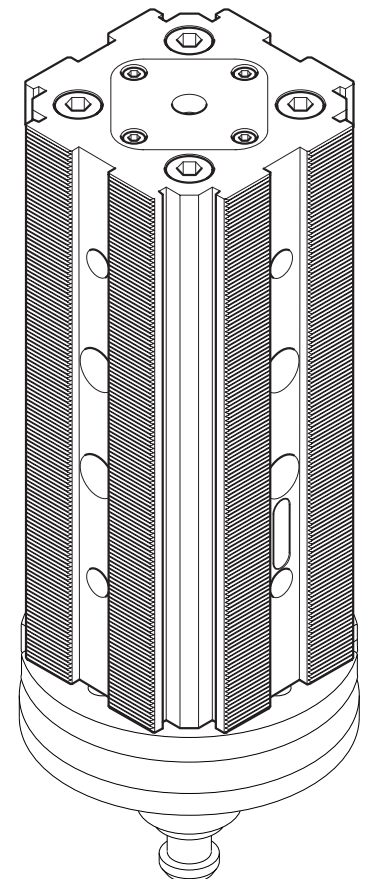
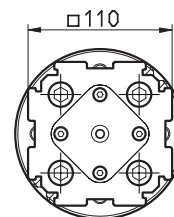
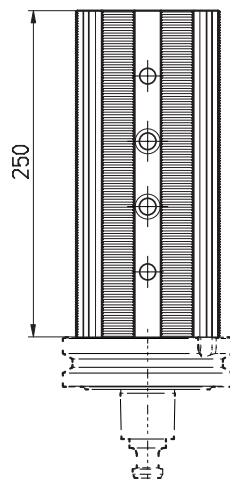
powerCLAMP



GPL 160 MATS



PCT 72-80-232 MATS



PCT 110-250 MATS

		H
PCT 72-80-232 MATS	kg ~ 11	232
PCT 110-250 MATS	kg ~ 20	250
GPL 160 MATS	Kg ~ 2,2	20

Bestellbeispiel / ordering example / exemple de commande: PCT 72-80-232 MATS

Starter-Sets

Starter sets

De sets d'introduction



powerCLAMP



Länge der Basisschiene
Length of base rail
Longueur du rail de base

Anzahl Spannstellen
Number of clamping stations
Quantité de stations de serrage

Basisschiene base rail rail de base	Spannmodul vice module module de serrage	Anschlagbacke end jaw plaque d'appui	Parallelunterlagen parallel base cales parallèles	Unterlagenhalter base holder support pour cales parallèles	Magnetfränschlag magnet milling buffer buttée de fraisage avec aimant
PCB4050...	PS1R 48N34 B80	PC 9434	PCU 20047	PCUH 2594	FAUM 2070
	Anschlagmodul end module module d'appui PAND 48-34	Fränschlag milling buffer buttée de fraisage FA 1260	Hartmetalldruckstück hardmetal thrust piece pièce de pression CCHMR	Parallelunterlagen parallel base cales parallèles PCU 29047	Messingbürste brass brush brosse en laiton PCMB 4

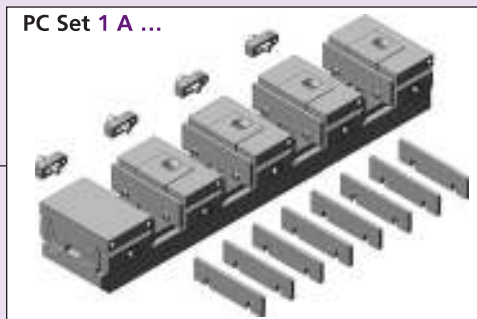
	L	N	1	2	3	4	5	6	7	8	9	10	11
400 PC-SET 48 AJ-1	400mm	1	1x	1x	1x	1x	1x	2x	2x	2x	2x	1x	1x
400 PC-SET 48 AJ-2	400mm	2	1x	1x	2x	2x	2x	4x	4x	4x	4x	1x	1x
400 PC-SET 48 AJ-3	400mm	3	1x	1x	3x	3x	3x	6x	6x	6x	6x	1x	1x
450 PC-SET 48 AJ-1	450mm	1	1x	1x	1x	1x	1x	2x	2x	2x	2x	1x	1x
450 PC-SET 48 AJ-2	450mm	2	1x	1x	2x	2x	2x	4x	4x	4x	4x	1x	1x
450 PC-SET 48 AJ-3	450mm	3	1x	1x	3x	3x	3x	6x	6x	6x	6x	1x	1x
500 PC-SET 48 AJ-1	500mm	1	1x	1x	1x	1x	1x	2x	2x	2x	2x	1x	1x
500 PC-SET 48 AJ-2	500mm	2	1x	1x	2x	2x	2x	4x	4x	4x	4x	1x	1x
500 PC-SET 48 AJ-3	500mm	3	1x	1x	3x	3x	3x	6x	6x	6x	6x	1x	1x
550 PC-SET 48 AJ-1	550mm	1	1x	1x	1x	1x	1x	2x	2x	2x	2x	1x	1x
550 PC-SET 48 AJ-2	550mm	2	1x	1x	2x	2x	2x	4x	4x	4x	4x	1x	1x
550 PC-SET 48 AJ-3	550mm	3	1x	1x	3x	3x	3x	6x	6x	6x	6x	1x	1x
600 PC-SET 48 AJ-1	600mm	1	1x	1x	1x	1x	1x	2x	2x	2x	2x	1x	1x
600 PC-SET 48 AJ-2	600mm	2	1x	1x	2x	2x	2x	4x	4x	4x	4x	1x	1x
600 PC-SET 48 AJ-3	600mm	3	1x	1x	3x	3x	3x	6x	6x	6x	6x	1x	1x
650 PC-SET 48 AJ-1	650mm	1	1x	1x	1x	1x	1x	2x	2x	2x	2x	1x	1x
650 PC-SET 48 AJ-2	650mm	2	1x	1x	2x	2x	2x	4x	4x	4x	4x	1x	1x
650 PC-SET 48 AJ-3	650mm	3	1x	1x	3x	3x	3x	6x	6x	6x	6x	1x	1x

Bestellbeispiel / ordering example / exemple de commande: 400 PC-SET 48 AJ-2



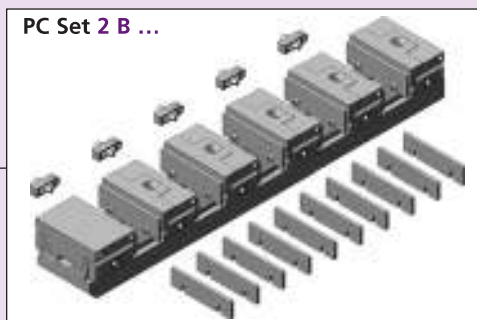
PC Set 1/2/3 A ...

A.	PC SET 1A 450 1 x PCB 40-50-450 4 x PS1 R94 N34B80 1 x PAND 94 - 34 8 x PCU 20093 8 x PCU 29093 4 x FA 1240	A.	PC SET 2A 550 1 x PCB 40-50-550 5 x PS1 R94 N34B80 1 x PAND 94 - 34 10 x PCU 20093 10 x PCU 29093 5 x FA 1240	A.	PC SET 3A 650 1 x PCB 40-50-650 6 x PS1 R94 N34B80 1 x PAND 94 - 34 12 x PCU 20093 12 x PCU 29093 6 x FA 1240
A.	PC SET 1A 500 1 x PCB 40-50-500 4 x PS1 R94 N34B80 1 x PAND 94 - 34 8 x PCU 20093 8 x PCU 29093 4 x FA 1240	A.	PC SET 2A 600 1 x PCB 40-50-600 5 x PS1 R94 N34B80 1 x PAND 94 - 34 10 x PCU 20093 10 x PCU 29093 5 x FA 1240		



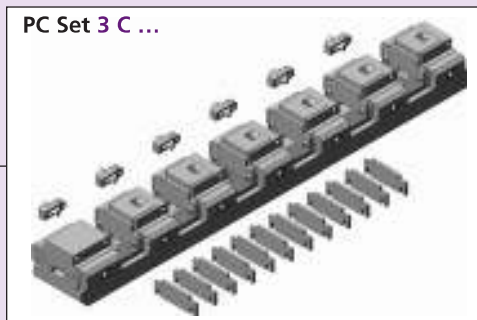
PC Set 1/2/3 B ...

B.	PC SET 1B 450 1 x PCB 40-50-450 4 x PS1 R94 N34B90 1 x PAND 94 - 34 8 x PCU 20093 8 x PCU 29093 4 x FA 1240	B.	PC SET 2B 550 1 x PCB 40-50-550 5 x PS1 R94 N34B90 1 x PAND 94 - 34 10 x PCU 20093 10 x PCU 29093 5 x FA 1240	B.	PC SET 3B 650 1 x PCB 40-50-650 6 x PS1 R94 N34B90 1 x PAND 94 - 34 12 x PCU 20093 12 x PCU 29093 6 x FA 1240
B.	PC SET 1B 500 1 x PCB 40-50-500 4 x PS1 R94 N34B90 1 x PAND 94 - 34 8 x PCU 20093 8 x PCU 29093 4 x FA 1240	B.	PC SET 2B 600 1 x PCB 40-50-600 5 x PS1 R94 N34B90 1 x PAND 94 - 34 10 x PCU 20093 10 x PCU 29093 5 x FA 1240		



PC Set 1/2/3 C ...

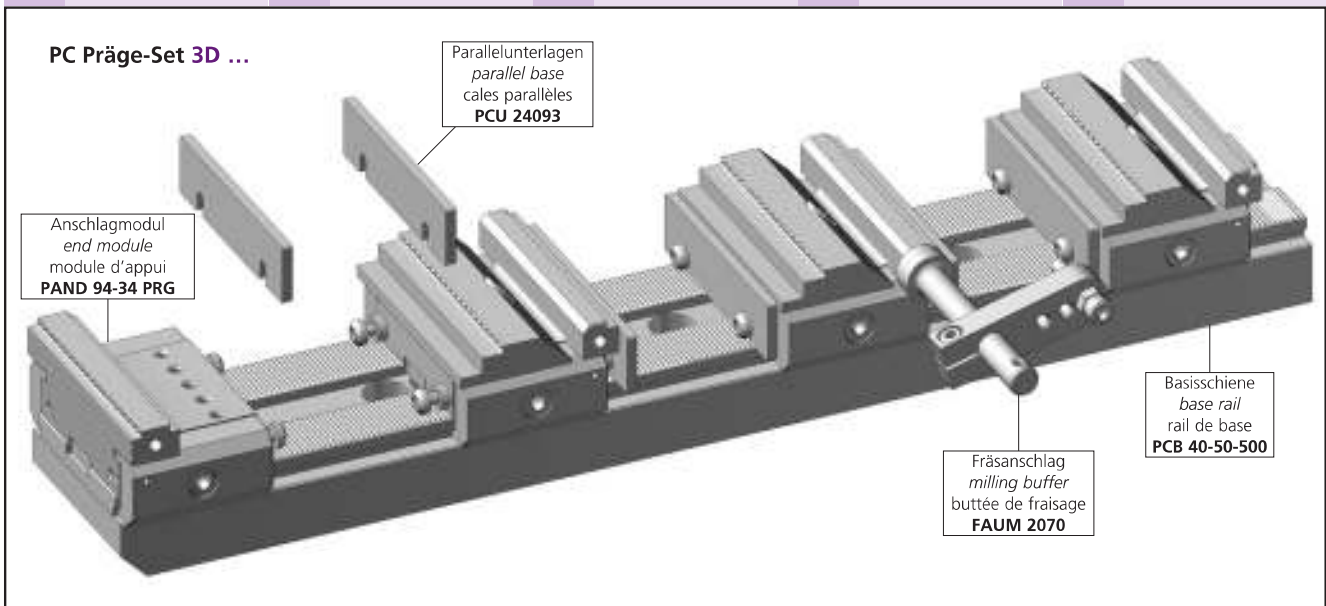
C.	PC SET 1C 450 1 x PCB 40-50-450 4 x PS1 R48 N34B80 1 x PAND 48 - 34 8 x PCU 20047 8 x PCU 29047 4 x FA 1240	C.	PC SET 2C 550 1 x PCB 40-50-550 5 x PS1 R48 N34B80 1 x PAND 48 - 34 10 x PCU 20047 10 x PCU 29047 5 x FA 1240	C.	PC SET 3C 650 1 x PCB 40-50-650 6 x PS1 R48 N34B80 1 x PAND 48 - 34 12 x PCU 20047 12 x PCU 29047 6 x FA 1240
C.	PC SET 1C 500 1 x PCB 40-50-500 4 x PS1 R48 N34B80 1 x PAND 48 - 34 8 x PCU 20047 8 x PCU 29047 4 x FA 1240	C.	PC SET 2C 600 1 x PCB 40-50-600 5 x PS1 R48 N34B80 1 x PAND 48 - 34 10 x PCU 20047 10 x PCU 29047 5 x FA 1240		





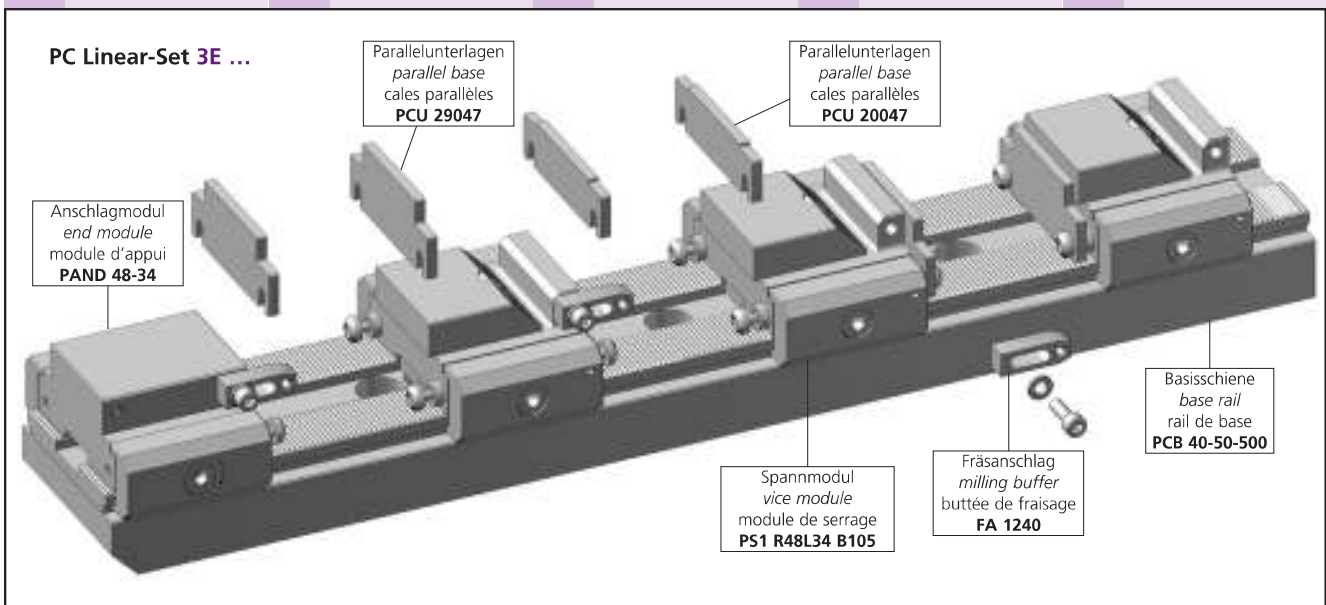
PC Präge-Set 3/4/5 D ...

D	PC SET 3D 450	D	PC SET 3D 500	D	PC SET 4D 550	D	PC SET 4D 600	D	PC SET 5D 650
1 x	PCB 40-50-450	1 x	PCB 40-50-500	1 x	PCB 40-50-550	1 x	PCB 40-50-600	1 x	PCB 40-50-650
3 x	PS1 P94L34 B120P	3 x	PS1 P94L34B120P	4 x	PS1 P94L34 B120P	4 x	PS1 P94L34 B120P	5 x	PS1 P94L34 B120P
1 x	PAND 94-34 PRG	1 x	PAND 94-34 PRG	1 x	PAND 94-34 PRG	1 x	PAND 94-34 PRG	1 x	PAND 94-34 PRG
6 x	PCU 24093	6 x	PCU 24093	8 x	PCU 24093	8 x	PCU 24093	10 x	PCU 24093
1 x	FAUM 2070	1 x	FAUM 2070	1 x	FAUM 2070	1 x	FAUM 2070	1 x	FAUM 2070



PC Linear-Set 3/4/5 E ...

E	PC SET 3E 450	E	PC SET 3E 500	E	PC SET 4E 550	E	PC SET 4E 600	E	PC SET 5E 650
1 x	PCB 40-50-450	1 x	PCB 40-50-500	1 x	PCB 40-50-550	1 x	PCB 40-50-600	1 x	PCB 40-50-650
3 x	PS1 R48L34 B105	3 x	PS1 R48L34 B105	4 x	PS1 R48L34 B105	4 x	PS1 R48L34 B105	5 x	PS1 R48L34 B105
1 x	PAND 48-34	1 x	PAND 48-34	1 x	PAND 48-34	1 x	PAND 48-34	1 x	PAND 48-34
6 x	PCU 20047	6 x	PCU 20047	8 x	PCU 20047	8 x	PCU 20047	10 x	PCU 20047
6 x	PCU 29047	6 x	PCU 29047	8 x	PCU 29047	8 x	PCU 29047	10 x	PCU 29047
3 x	FA 1240	3 x	FA 1240	4 x	FA 1240	4 x	FA 1240	5 x	FA 1240



Hurco Starter-Sets

Hurco starter sets

De sets d'introduction Hurco

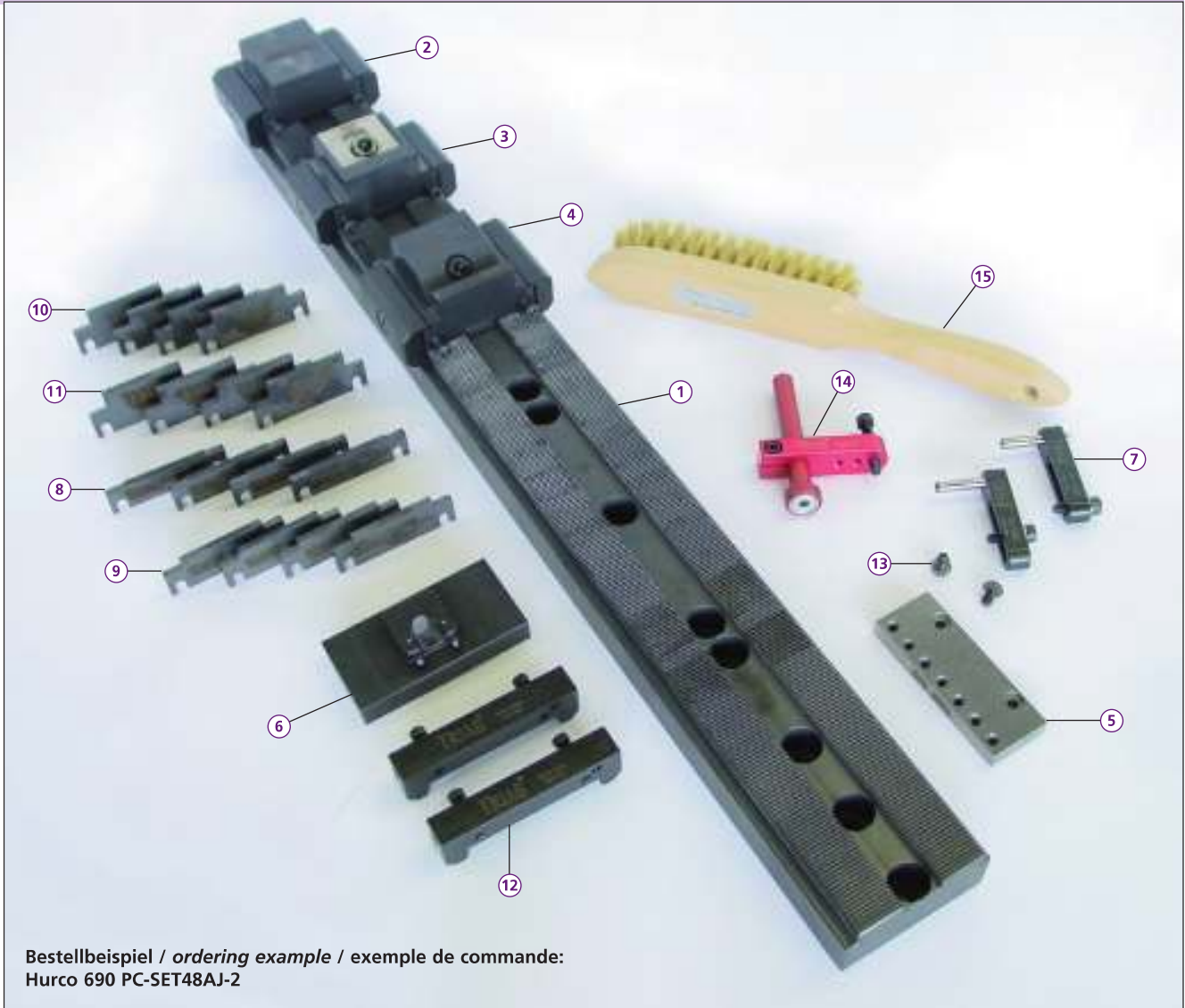


powerCLAMP

Anzahl Spannstellen
Number of clamping stations
Quantité de stations de serrage

Länge der Basisschiene
Length of base rail
Longueur du rail de base

	L	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			Basisschiene / base rail / rail de base PCB100 690 H60	Anschlagmodul / end module / module d'appui PAND 48-34	Spannmodul / vice module / module de serrage PS1R 48N34 B80 (Niederzug / pull down / descendant)	Spannmodul / vice module / module de serrage PS1R48L34B105 (Linear / linear / linéaire)	Anschlagbacke / end jaw / plaque d'appui PC 9434 (Universal / universal / universel)	Spannbacke / clamping jaw / mors du serrage B 110 (Linear / linear / linéaire)	Fräsanschlag / milling buffer / Butée de fraisage FA 1260	Parallelunterlagen / parallel base / cales parallèles PCU 20047	Parallelunterlagen / parallel base / cales parallèles PCU 31047	Parallelunterlagen / parallel base / cales parallèles PCU 24047	Parallelunterlagen / parallel base / cales parallèles PCU 29047	Unterlagenhalter / base holder PCUH 2594 support pour cales parallèles	Hartmetalldruckstück / magnet milling buffer CCHMR butée de fraisage avec aimant	Magnetfräsansschlag / magnet milling buffer FAUM 2070 butée de fraisage avec aimant	Messingbürste / brass brush / brosse en laiton PCMB 4
Hurco 690PC-SET48AJ-2	690mm	2x	1x	1x	1x	1x	1x	1x	2x	4x	4x	4x	4x	2x	2x	1x	1x
Hurco 690PC-SET48AJ-4	690mm	4x	2x	2x	2x	2x	2x	2x	4x	8x	8x	8x	8x	4x	4x	1x	1x



Bestellbeispiel / ordering example / exemple de commande:
Hurco 690 PC-SET48AJ-2

Ihr Vorteil mit dem Hurco-Starterset:

Mit dem Hurco-Starterset haben Sie mit Ihren Werkzeugen in der Z-Achse immer Zugang zu Ihren Werkstücken. Die Basisschiene PCB100690H60 wurde für die Hurco speziell in der Höhe 60 mm angefertigt um den eher grossen Abstand von der Spindelnase zum Tisch auf der untersten Position der Z-Achse zu überbrücken bzw. auszugleichen.

The advantage of the Hurco starter-set:

Always reach your work-piece in z-axis with your tools. The base rail PCB100690H60 of the Hurco starter-set is specially developed in the height of 60 mm to bridge the gap between the spindle-nose and your machine table if the spindle is positioned at lowest z-axis position.

Votre avantage avec le set d'introduction Hurco:

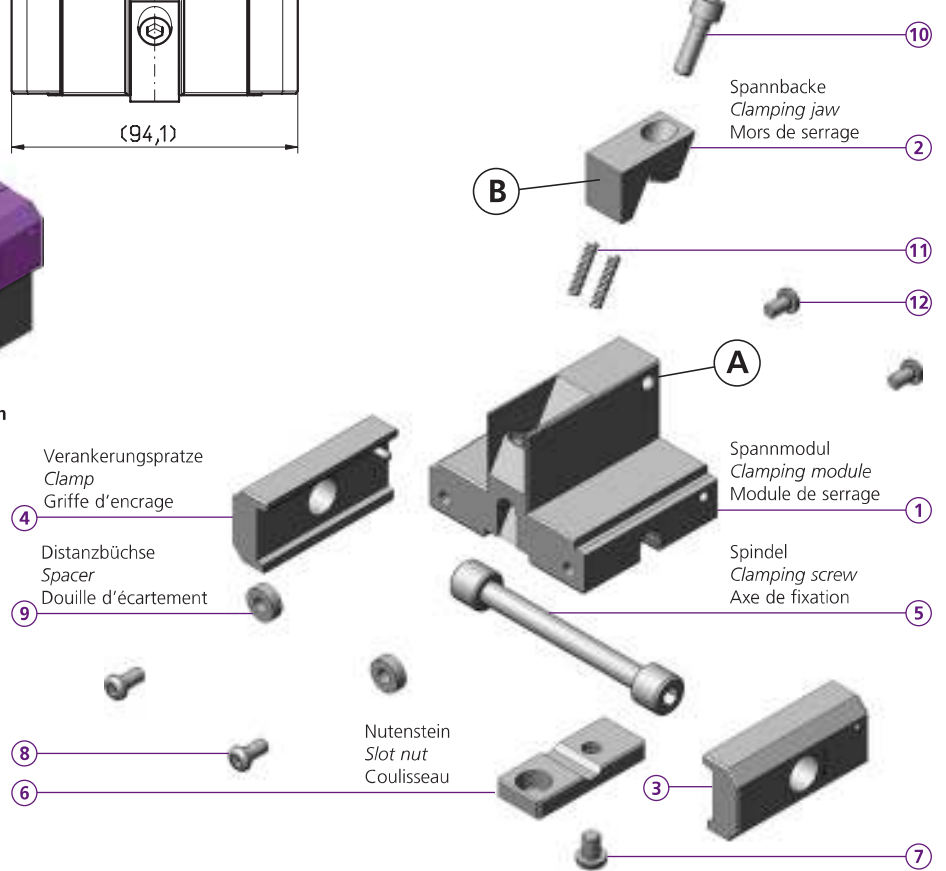
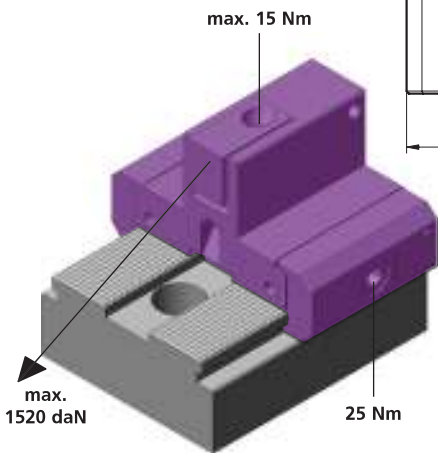
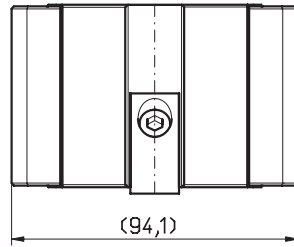
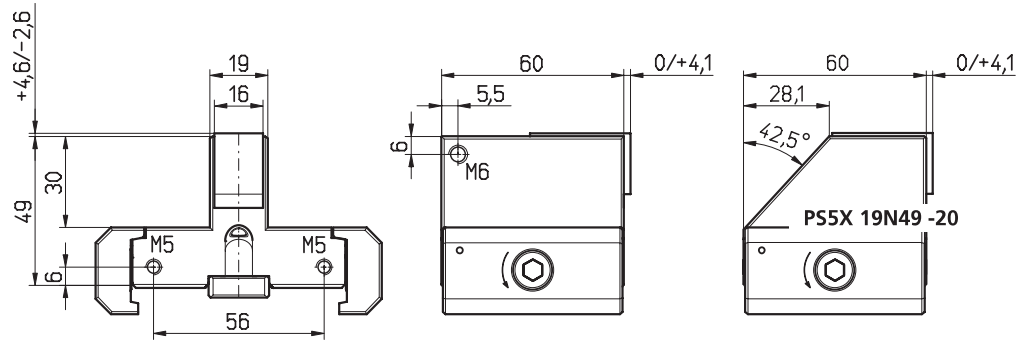
Avec le Set d'introduction Hurco, dans l'axe Z vous avez toujours accès à vos pièces, avec vos outils. Le rail de base PCB 100 690 H60 Hurco a été spécialement développé avec une hauteur de 60 mm. Pour compenser la distance assez grande du nez de la broche à la table à la position la plus basse de l'axe Z.

Spannmodule
Clamping module
Module de serrage

PS1R 19N49 -20
PS5X 19N49 -20



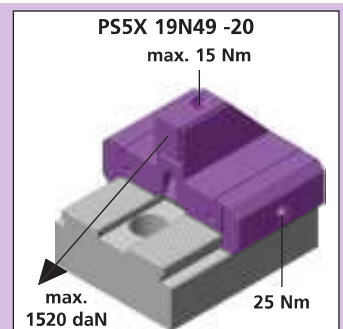
powerCLAMP



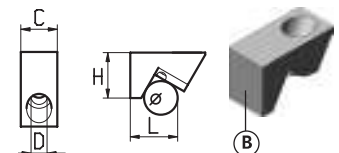
Bestellbeispiel / ordering example / exemple de commande: **PS1R 19N49 B21**

	PS5X 19N49 -20	PS1R 19N49 -20
①	1x PS1R 19N49 -20	
②	1x	
③	1x PCSP 60R	
④	1x PCSP 60L	
⑤	1x PCS 14	
⑥	1x PCGU 20 49	
⑦	1x M6x8 ISO 7380	
⑧	2x M5x14 ISO 4762	
⑨	2x PCD 005	
⑩	1x M6x20 ISO 4762	
⑪	2x FED 0418	
⑫	4x M5x10 ISO 4762	
kg	1,2	

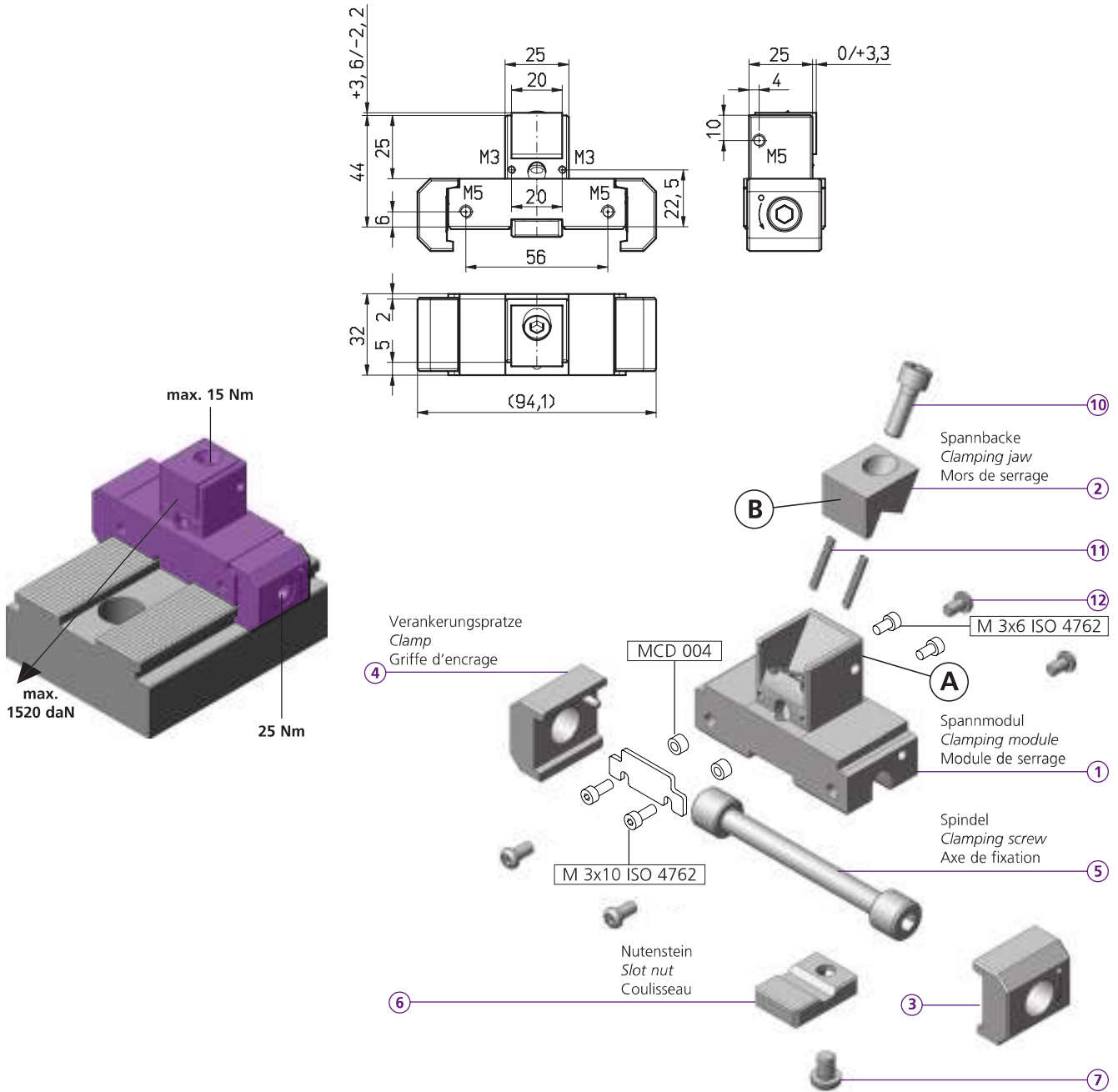
	B20	B21	B22
③	16	16	16
④	20	20	20
⑤	19	19	19
⑥	6,5	6,5	6,5
⑦	12	12	12
⑧	HV700	HV700	*
	x0,2mm x0,2mm		



B20, B21, B22



* = weich / soft / doux

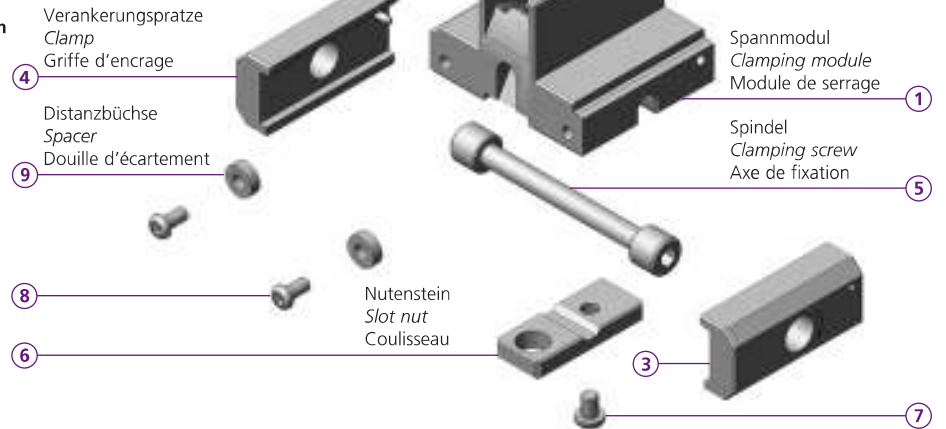
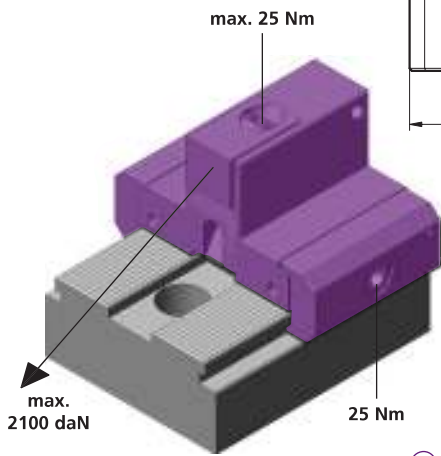
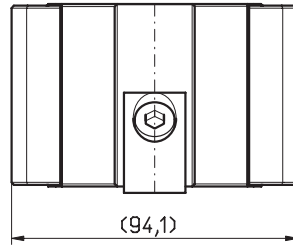
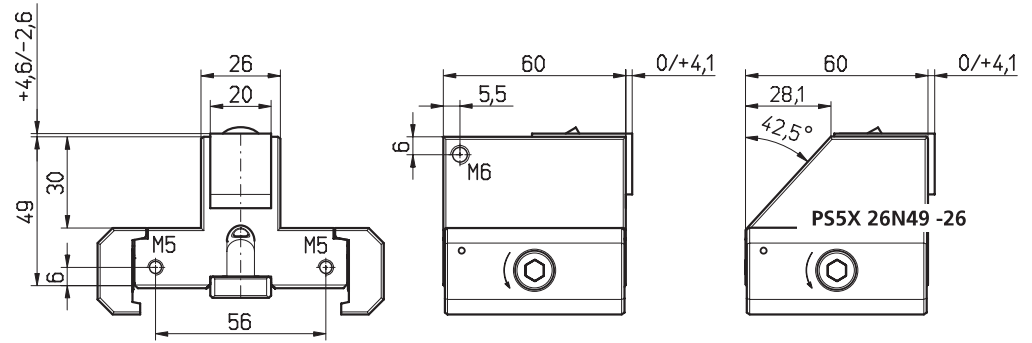


Bestellbeispiel / ordering example / exemple de commande: PS1R 25N44 B13

PS1R 25N44 -13		Bestellbeispiel / ordering example / exemple de commande: PS1R 25N44 B13				
①	1x PS1R 25N44 -13	ⓐ	B13	B14	B15	B16
②	1x	ⓑ	20	20	20	20
③	1x PCSP 30R	ⓒ	20	20	20	20
④	1x PCSP 30L	ⓓ	16	16	16	16
⑤	1x PCS 14	ⓔ	13,8	13,8	13,8	19
⑥	1x PCGU 20 30	ⓕ	6,5	6,5	6,5	6,5
⑦	1x M6x8 ISO 7380	ⓖ	10	10	10	10
⑧	2x M5x14 ISO 4762	ⓓ	HV700	HV700	*	*
			x0,2mm x0,2mm			
⑩	1x M6x16 ISO 4762					
⑪	2x FED 03018					
⑫	4x M5x10 ISO 4762					
kg	0,65					

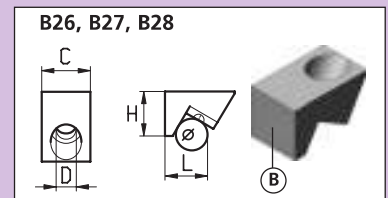
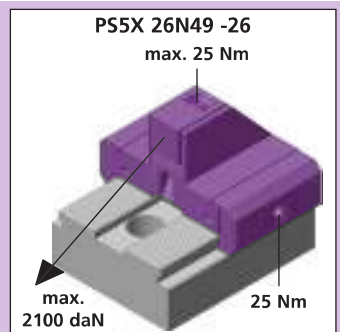
		H	B	N
MCU	11037	11	23	2
	15037	15	23	2
	18037	18	23	2
	20037	20	23	2
	22537	22,5	23	2
2x	M3x10 ISO 4262			
2x	M3x6 ISO 4262			
2x	MCD 004			

MCU				
3,5	B	H	N	
20	34	Ø		

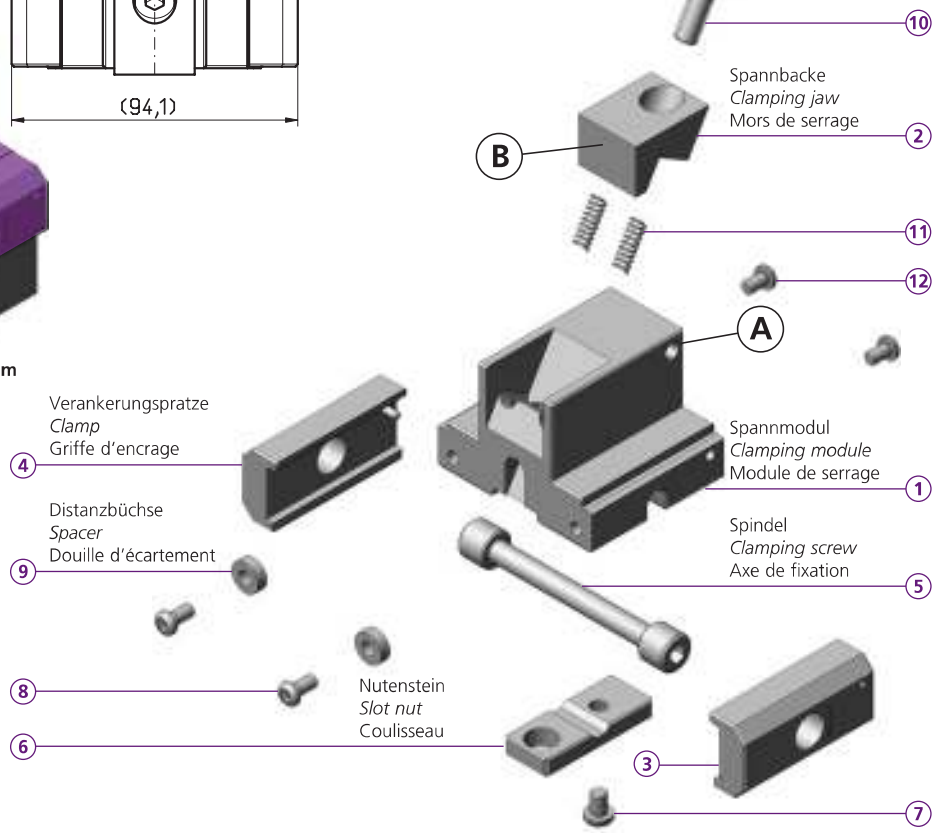
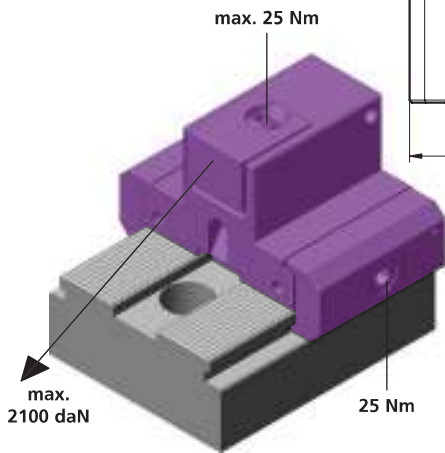
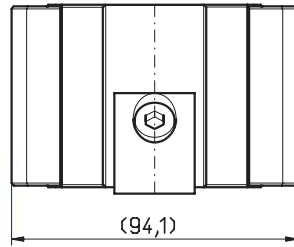
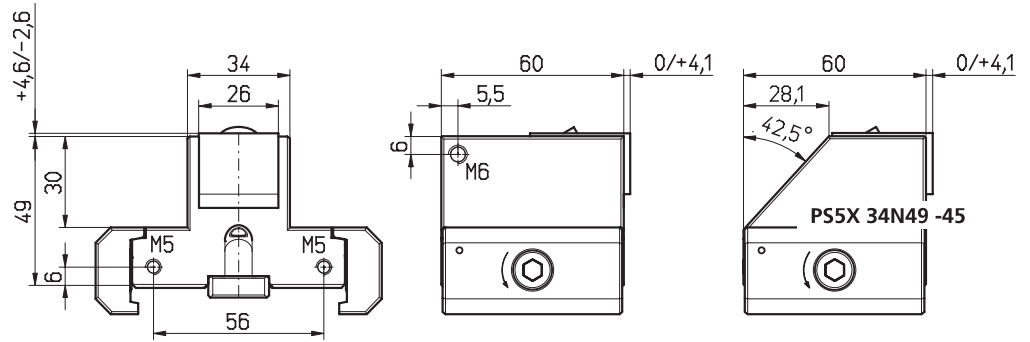


Bestellbeispiel / ordering example / exemple de commande: PS1R 26N49 B26

	A	B	B26	B27	B28
M5	PS5X 26N49 -26				
	PS1F 26N49 -26				
	PS1R 26N49 -26				
1	1x PS1R/F 26N49 -26				
2	1x				
3	1x PCSP 60R				
4	1x PCSP 60L				
5	1x PCS 14				
6	1x PCGU 20 49				
7	1x M6x8 ISO 7380				
8	2x M5x14 ISO 4762				
9	2x PCD 005				
10	1x M8x20 ISO 4762				
11	4x FED 0418				
12	2x M5x10 ISO 4762				
kg	1,2				

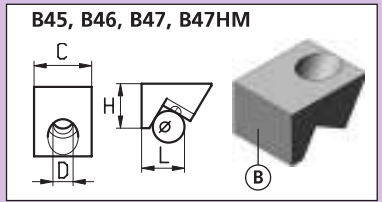
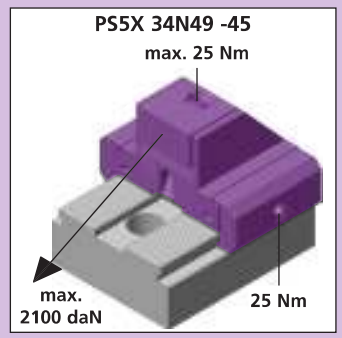


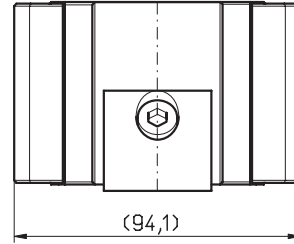
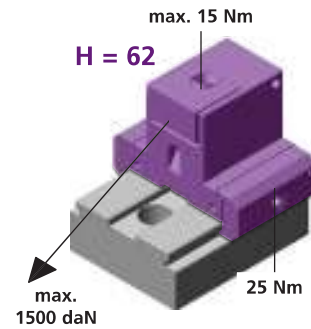
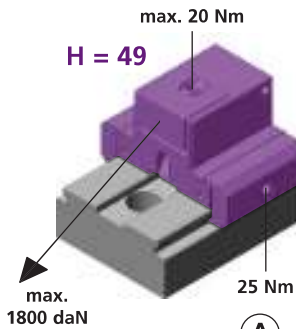
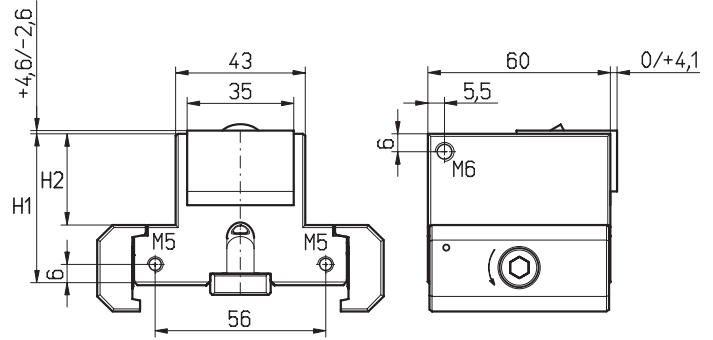
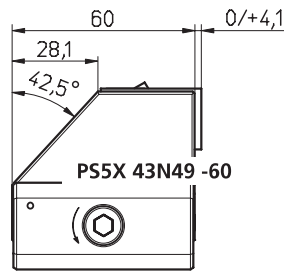
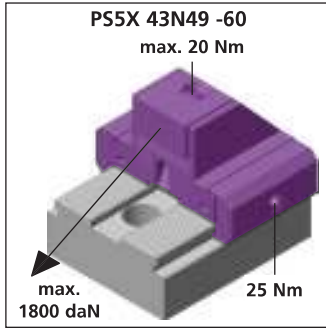
* = weich / soft / doux



Bestellbeispiel / ordering example / exemple de commande: PS1R 34N49 B46

PS5X 34N49 -45		PS1R 34N49 -45			
		B45	B46	B47	B47HM
1	1x PS1R 34N49 -45				
2	1x ———				
3	1x PCSP 60R				
4	1x PCSP 60L				
5	1x PCS 14				
6	1x PCGU 20 49				
7	1x M6x8 ISO 7380				
8	2x M5x14 ISO 4762				
9	2x PCD 005				
10	1x M8x20 ISO 4762				
11	2x FED 0618				
12	2x M5x10 ISO 4762				
kg	1,4				





PS5X 43N49 -60

PS1F 43N49 -60

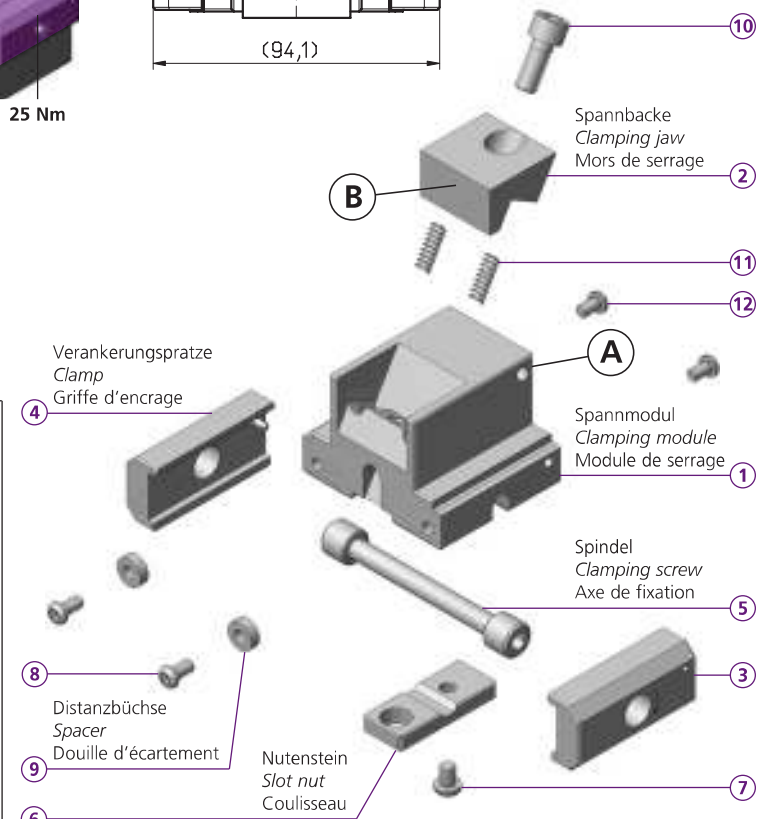
PS1R 43N49 -60

1	1x	PS1R/F 43N49 -60
2	1x	_____
3	1x	PCSP 60R
4	1x	PCSP 60L
5	1x	PCS 14
6	1x	PCGU 20 49
7	1x	M6x8 ISO 7380
8	2x	M5x14 ISO 4762
9	2x	PCD 005
10	1x	M8x20 ISO 4762
11	2x	FED 0618
12	2x	M5x10 ISO 4762
H1		49
H2		30
kg		1,4

PS1F 43N62 -60

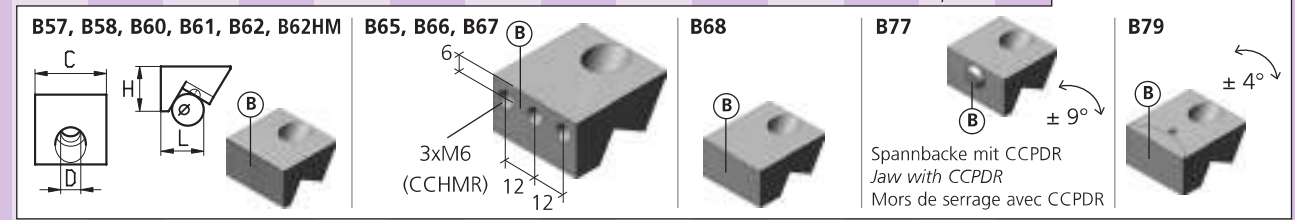
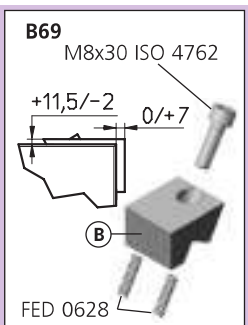
PS1R 43N62 -60

1	1x	PS1R/F 43N62 -60
2	1x	_____
3	1x	PCSP 60R
4	1x	PCSP 60L
5	1x	PCS 14
6	1x	PCGU 20 49
7	1x	M6x8 ISO 7380
8	2x	M5x14 ISO 4762
9	2x	PCD 005
10	1x	M8x20 ISO 4762
11	2x	FED 0618
12	2x	M5x10 ISO 4762
H1		62
H2		43
kg		1,7



Bestellbeispiel / ordering example / exemple de commande: PS1R 43N49 B61

	B57	B58	B60	B61	B62	B62HM	B65	B66	B67	B68	B69	B77	B79
C	35	35	35	35	35	35	35	35	35	35	35	35	35
H	20	20	20	20	20	20	20	20	20	20	25	20	20
L	19	24	19	19	19	19	19	19	24	26	21	22	25
D	9	9	9	9	9	9	9	9	9	9	9	9	9
o	12	12	12	12	12	12	12	12	12	12	12	12	12
i	ALU *	ALU *	56 HRc	56 HRc	*	HM	56 HRc	56 HRc	56 HRc	*	*	56 HRc	HV700 x0,2mm



* = weich / soft / doux

HM = Hartmetallbeschichtet / carbide coated / revêtu avec carbure

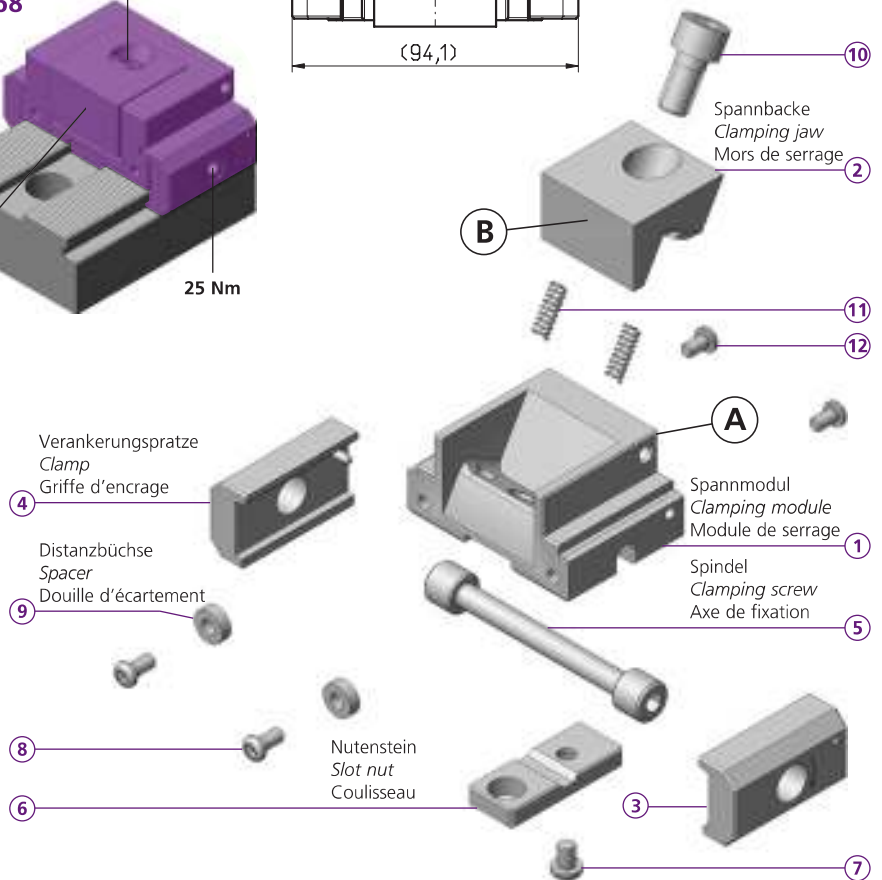
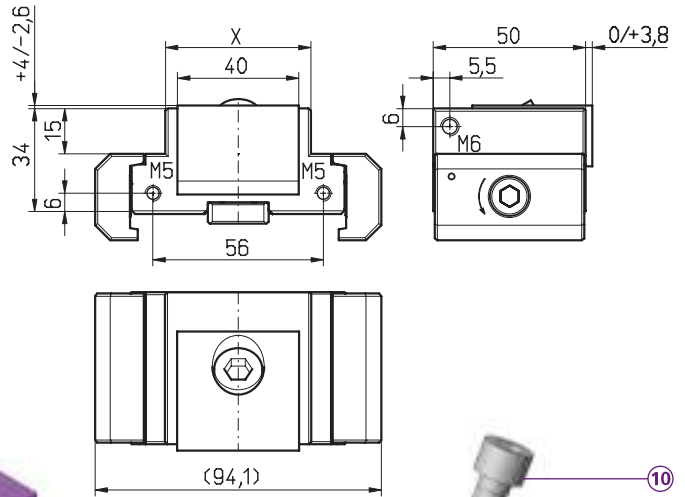
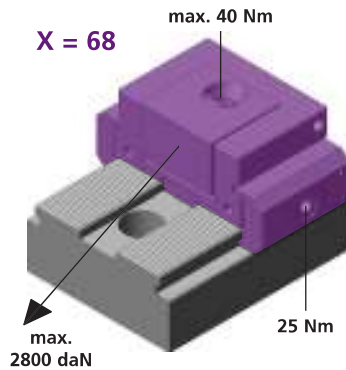
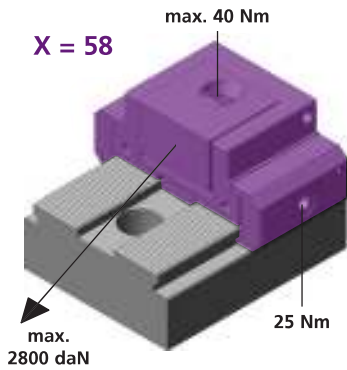
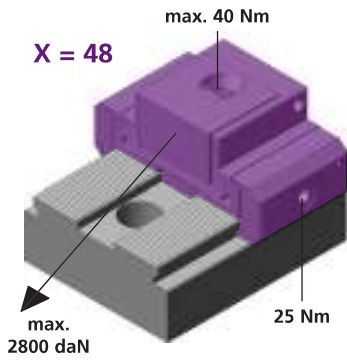
PS1R/F 48N34 -80

PS1R/F 58N34 -80

PS1R/F 68N34 -80



powerCLAMP



PS1F 48N34 -80

PS1R 48N34 -80

1	1x	PS1R/F 48N34 -80
2	1x	
3	1x	PCSP 50R
4	1x	PCSP 50L
5	1x	PCS 14
6	1x	PCGU 20 49
7	1x	M6x8 ISO 7380
8	2x	M5x14 ISO 4762
9	2x	PCD 005
10	1x	M10x25 ISO 4762
11	2x	FED 0618
12	2x	M5x10 ISO 4762
X		48
kg		1,0

Bestellbeispiel / ordering example / exemple de commande: PS1R 48N34 B81

PS1F 58N34 -80

PS1R 58N34 -80

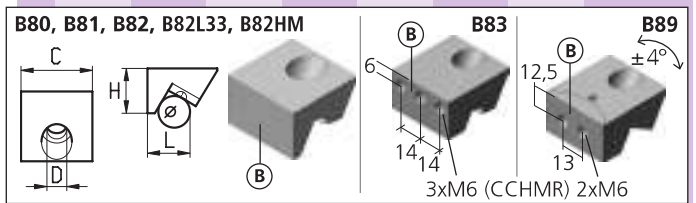
1	1x	PS1R/F 58N34 -80
2	1x	
3	1x	PCSP 50R
4	1x	PCSP 50L
5	1x	PCS 14
6	1x	PCGU 20 49
7	1x	M6x8 ISO 7380
8	2x	M5x14 ISO 4762
9	2x	PCD 005
10	1x	M10x25 ISO 4762
11	2x	FED 0618
12	2x	M5x10 ISO 4762
X		58
kg		1,0

PS1F 68N34 -80

PS1R 68N34 -80

1	1x	PS1R/F 68N34 -80
2	1x	
3	1x	PCSP 50R
4	1x	PCSP 50L
5	1x	PCS 14
6	1x	PCGU 20 49
7	1x	M6x8 ISO 7380
8	2x	M5x14 ISO 4762
9	2x	PCD 005
10	1x	M10x25 ISO 4762
11	2x	FED 0618
12	2x	M5x10 ISO 4762
X		68
kg		1,1

	B80	B81	B82	B82L33	B82HM	B83	B89
C	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25
L	22	22	22,2	33	22,2	22	29
D	11	11	11	11	11	11	11
ø	15	15	15	15	15	15	15
i	56HRc	56HRc	*	*	HM	HV700	HV700
						x0,2mmx0,2mm	



PS1P 48L34 -105

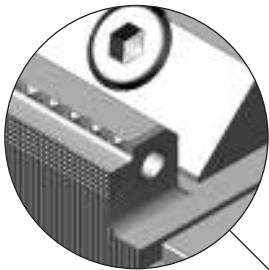
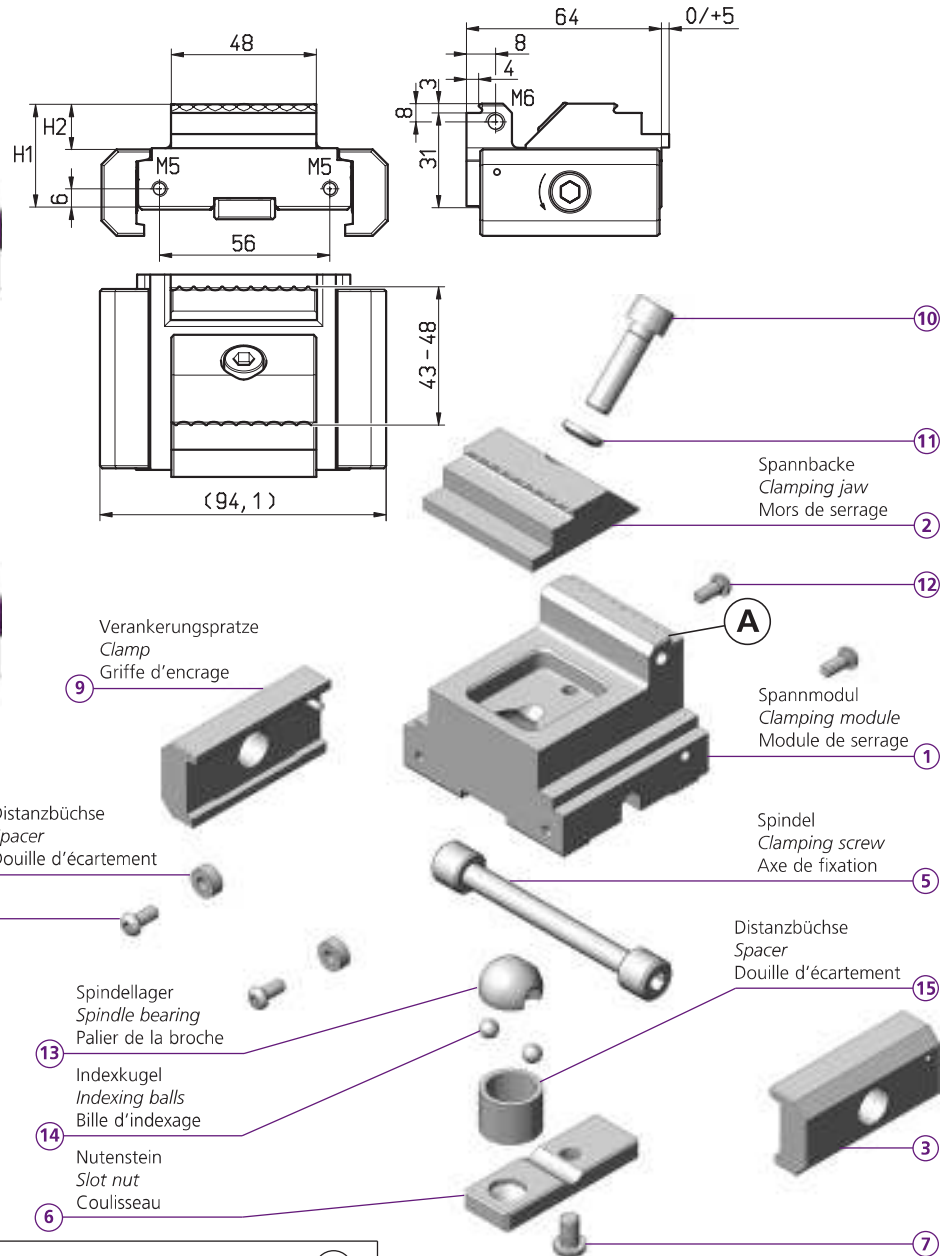
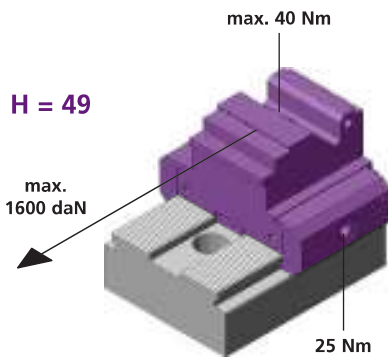
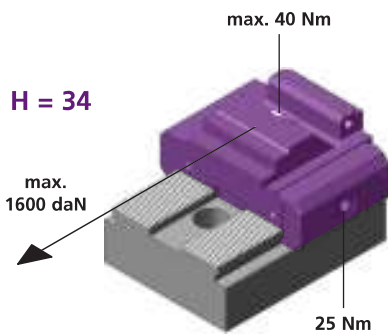
PS1P 48L49 -105

Linear



prägen
stamping
imprimer

powerCLAMP



PS1P 48L34 -105	
1	1x PS1P 48L34 -105
2	1x _____
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 59
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M8x30 ISO 4762
11	1x PCUSR 14
12	2x M5x10 ISO 4762
13	1x PCKMR 45 M8
14	2x BN 869 d=6
H1	34
H2	14,5
kg	1,25

PS1P 48L49 -105	
1	1x PS1P 48L49 -105
2	1x _____
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 59
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M8x30 ISO 4762
11	1x PCUSR 14
12	2x M5x10 ISO 4762
13	1x PCKMR 45 M8
14	2x BN 869 d=6
15	1x PCD 20L15
H1	49
H2	29,5
kg	1,75

p. 90

Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,4 t 400 daN
20 Nm =	0,8 t 800 daN
30 Nm =	1,2 t 1200 daN
40 Nm =	1,6 t 1600 daN

Bestellbeispiel
ordering example
exemple de commande: PS1P 48L34 B115

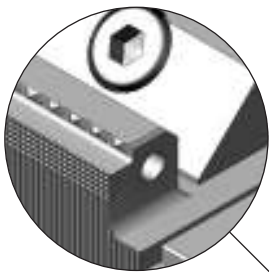
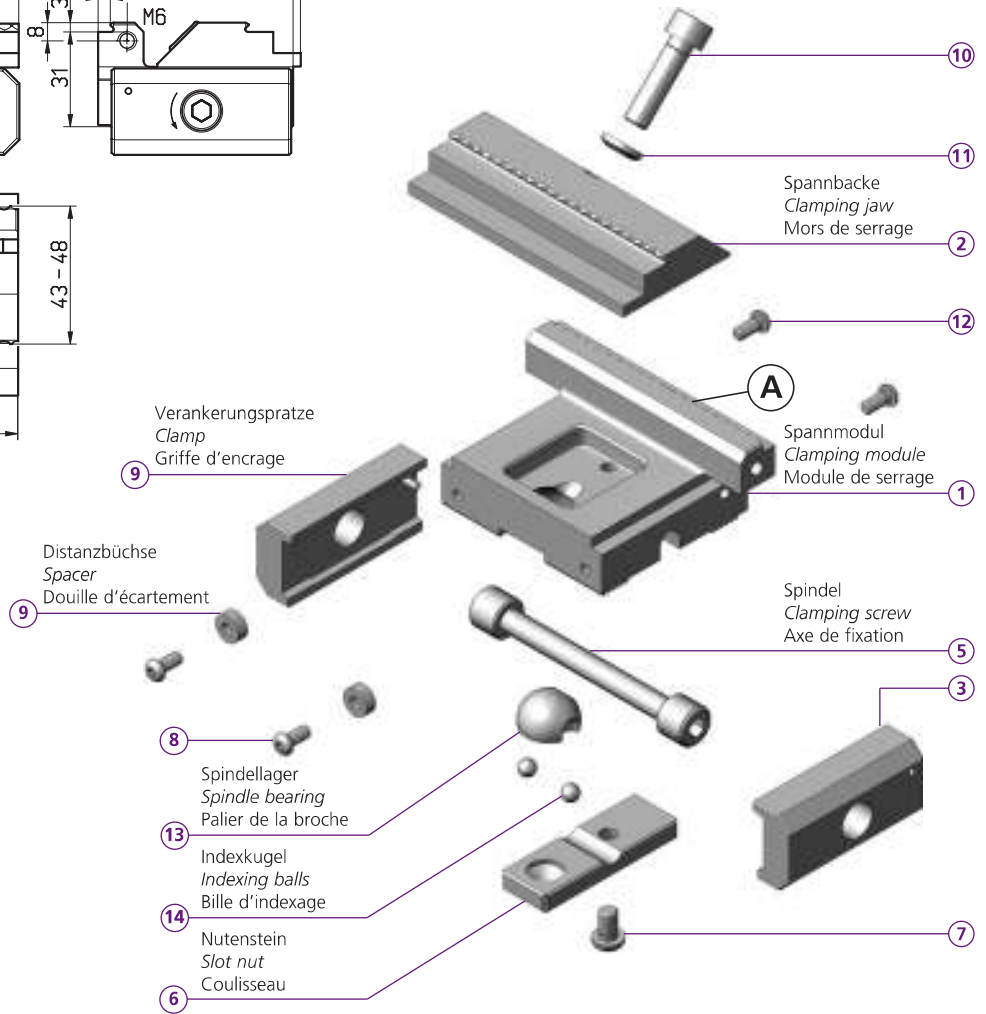
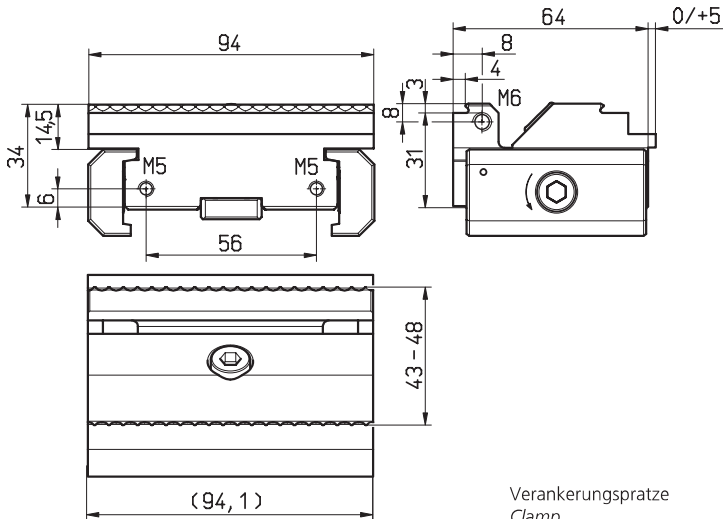
PS1P 94L34 -105
PS1P6 94L34 -105

Linear



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stamping
imprimer

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A

PS1P 94L34 -105

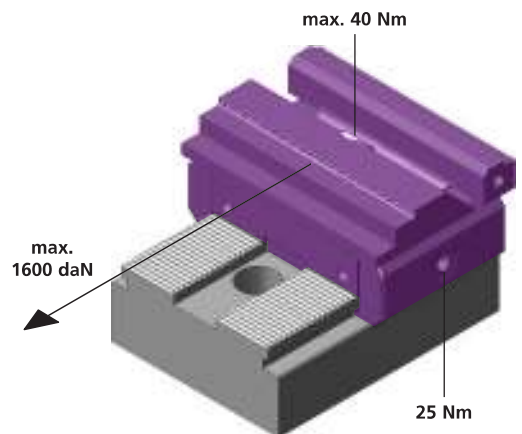
- ① 1x PS1P 94L34 -105
- ② 1x _____
- ③ 1x PCSP 60R
- ④ 1x PCSP 60L
- ⑤ 1x PCS 14
- ⑥ 1x PCGU 20 59
- ⑦ 1x M6x8 ISO 7380
- ⑧ 2x M5x14 ISO 4762
- ⑨ 2x PCD 005
- ⑩ 1x M8x30 ISO 4762
- ⑪ 1x PCUSR 14
- ⑫ 2x M5x10 ISO 4762
- ⑬ 1x PCKMR 45 M8
- ⑭ 2x BN 869 d=6

kg 2,15

p. 90



Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,4 t 400 daN
20 Nm =	0,8 t 800 daN
30 Nm =	1,2 t 1200 daN
40 Nm =	1,6 t 1600 daN



Bestellbeispiel / ordering example / exemple de commande: PS1P 94L34 B115

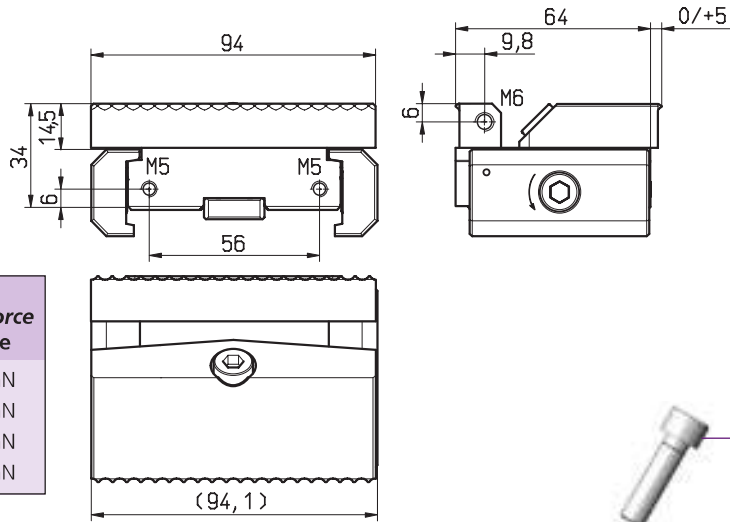


Linear

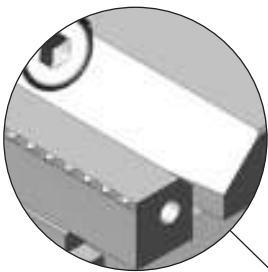
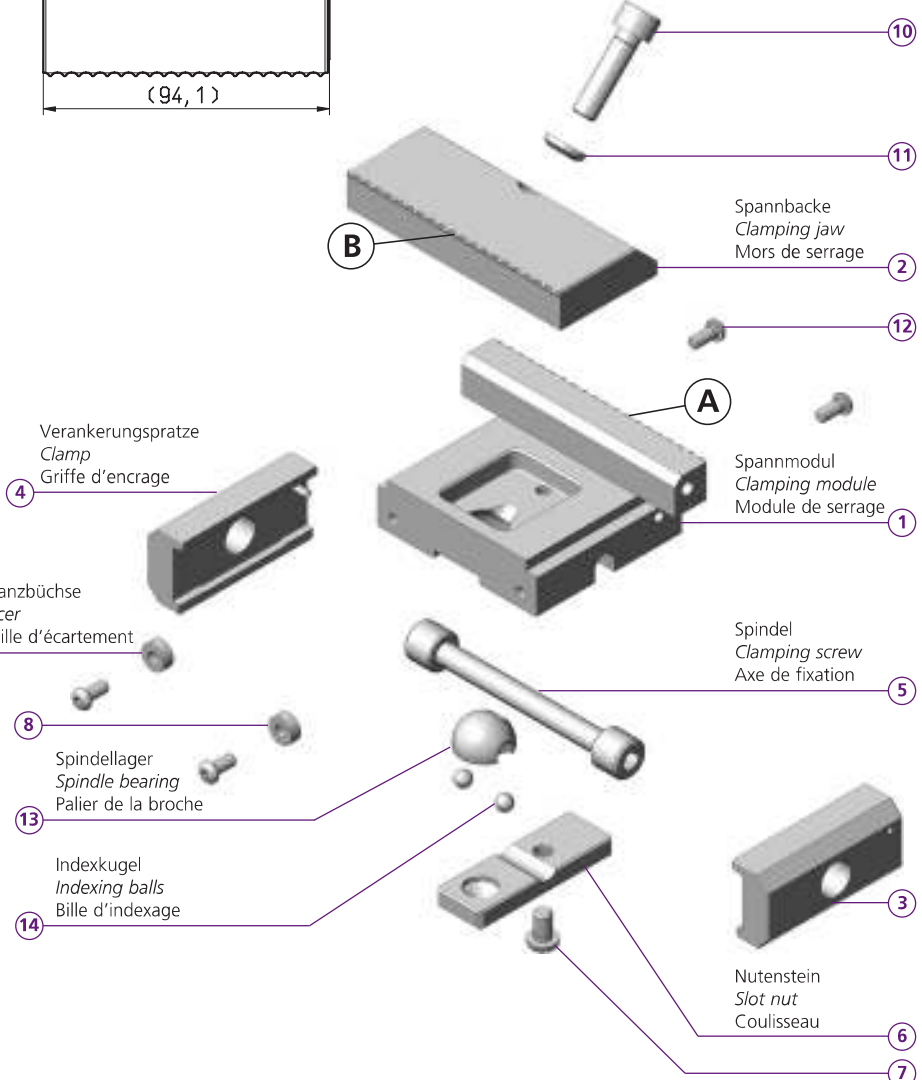
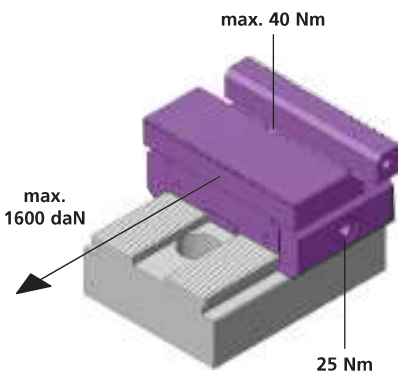


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stamping
imprimer

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Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,4 t 400 daN
20 Nm =	0,8 t 800 daN
30 Nm =	1,2 t 1200 daN
40 Nm =	1,6 t 1600 daN

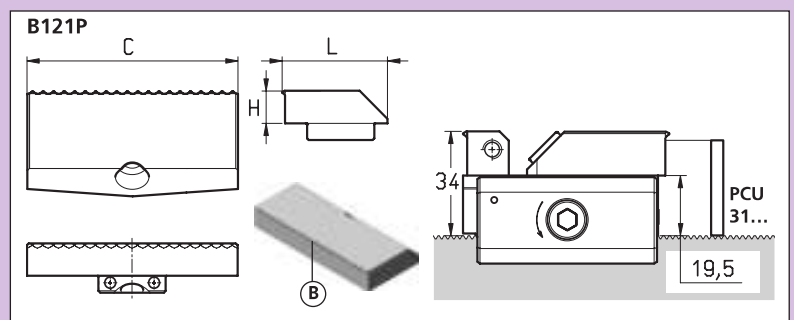


PS1PV 94L34 -105

- ① 1x PS1PV 94L34 -105
 - ② 1x
 - ③ 1x PCSP 60R
 - ④ 1x PCSP 60L
 - ⑤ 1x PCS 14
 - ⑥ 1x PCGU 20 59
 - ⑦ 1x M6x8 ISO 7380
 - ⑧ 2x M5x14 ISO 4762
 - ⑨ 2x PCD 005
 - ⑩ 1x M8x30 ISO 4762
 - ⑪ 1x PCUSR 14
 - ⑫ 2x M5x10 ISO 4762
 - ⑬ 1x PCKMR 45 M8
 - ⑭ 2x BN 869 d=6
- kg 1,05

- ① B121P
- ② 94
- ③ 14,5
- ④ 47
- ⑤ 56HRc

Bestellbeispiel / ordering example / exemple de commande: PS1PV 94L34 B121P





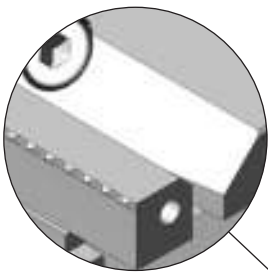
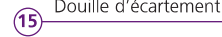
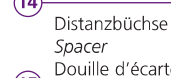
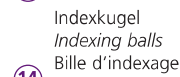
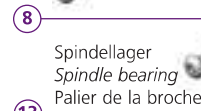
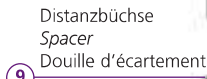
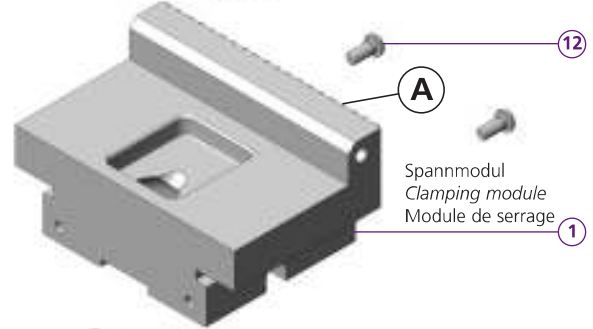
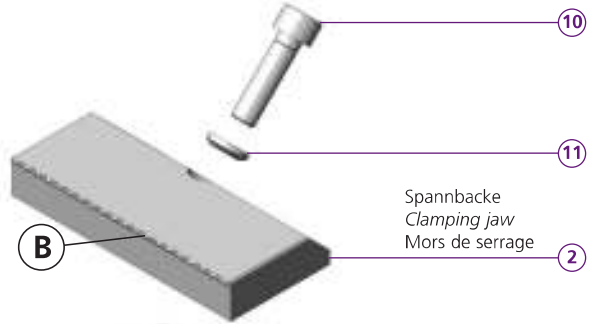
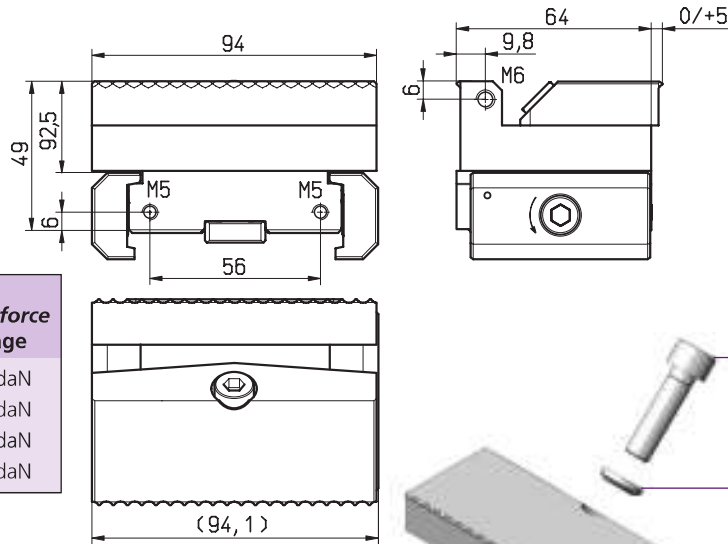
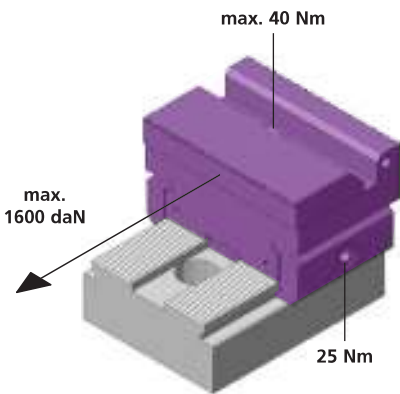
Linear



prägen
stamping
imprimer

powerCLAMP

Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,4 t 400 daN
20 Nm =	0,8 t 800 daN
30 Nm =	1,2 t 1200 daN
40 Nm =	1,6 t 1600 daN



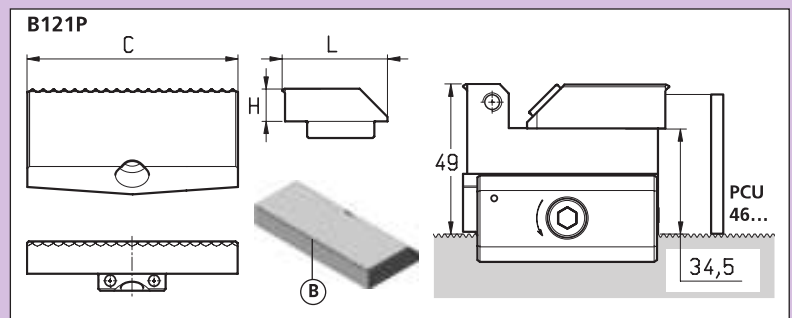
A

PS1PV 94L49 -105

- ① 1x PS1PV 94L49 -105
- ② 1x
- ③ 1x PCSP 60R
- ④ 1x PCSP 60L
- ⑤ 1x PCS 14
- ⑥ 1x PCGU 20 59
- ⑦ 1x M6x8 ISO 7380
- ⑧ 2x M5x14 ISO 4762
- ⑨ 2x PCD 005
- ⑩ 1x M8x30 ISO 4762
- ⑪ 1x PCUSR 14
- ⑫ 2x M5x10 ISO 4762
- ⑬ 1x PCKMR 45 M8
- ⑭ 2x BN 869 d=6
- ⑮ 1x PCB 20L15
- kg 1,72

- B B121P
- C 94
- H 14,5
- L 47
- i 56HRc

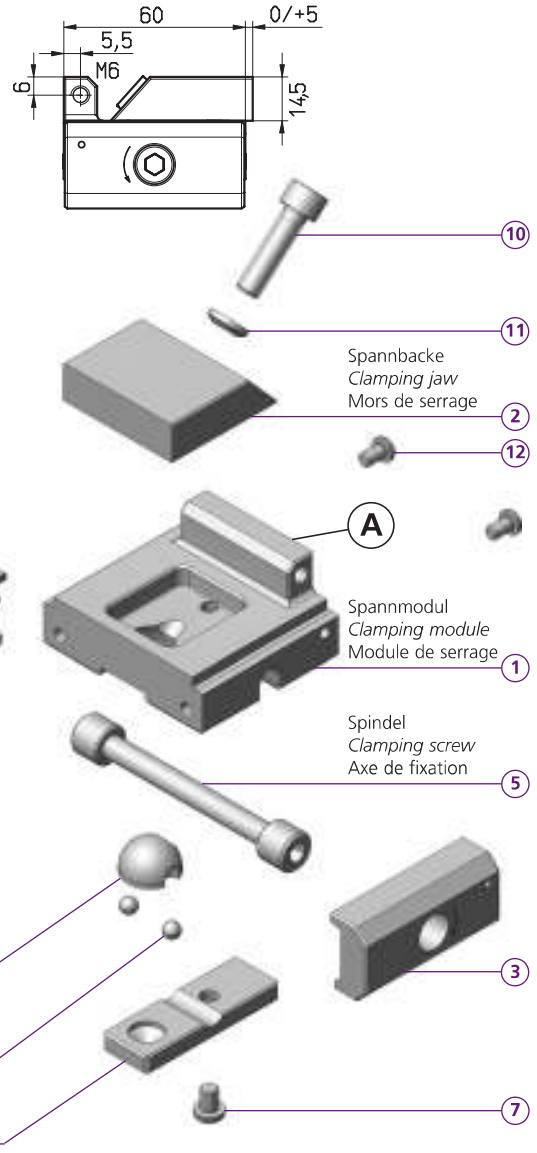
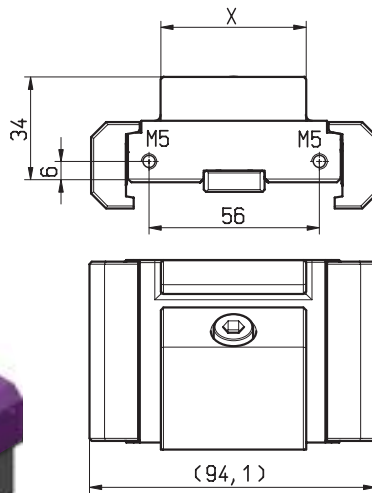
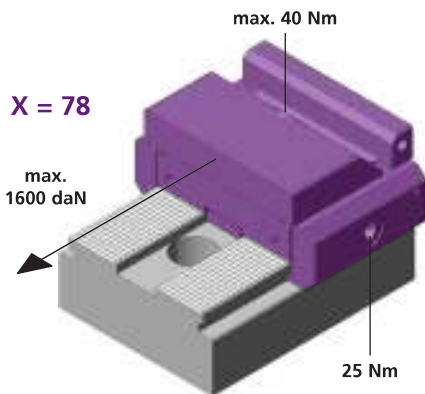
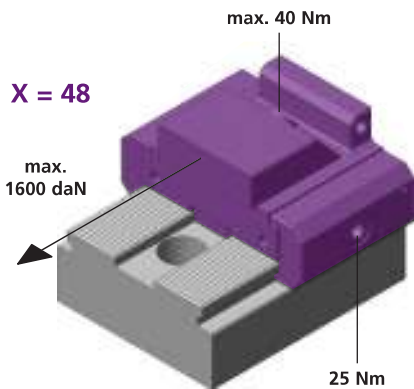
Bestellbeispiel / ordering example / exemple de commande: PS1PV 94L49 B121P





Linear

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Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,4 t 400 daN
20 Nm =	0,8 t 800 daN
30 Nm =	1,2 t 1200 daN
40 Nm =	1,6 t 1600 daN

PS1R 48L34 -105	
PS1F 48L34 -105	
1	1x PS1R/F 48L34 -105
2	1x _____
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 59
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M8x30 ISO 4762
11	1x PCUSR 14
12	2x M5x10 ISO 4762
13	1x PCKMR 45 M8
14	2x BN 869 d=6
X	48
kg	1,2

PS1R 78L34 -105	
PS1F 78L34 -105	
1	1x PS1R/F 78L34 -105
2	1x _____
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 59
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M8x30 ISO 4762
11	1x PCUSR 14
12	2x M5x10 ISO 4762
13	1x PCKMR 45 M8
14	2x BN 869 d=6
X	78
kg	1,2

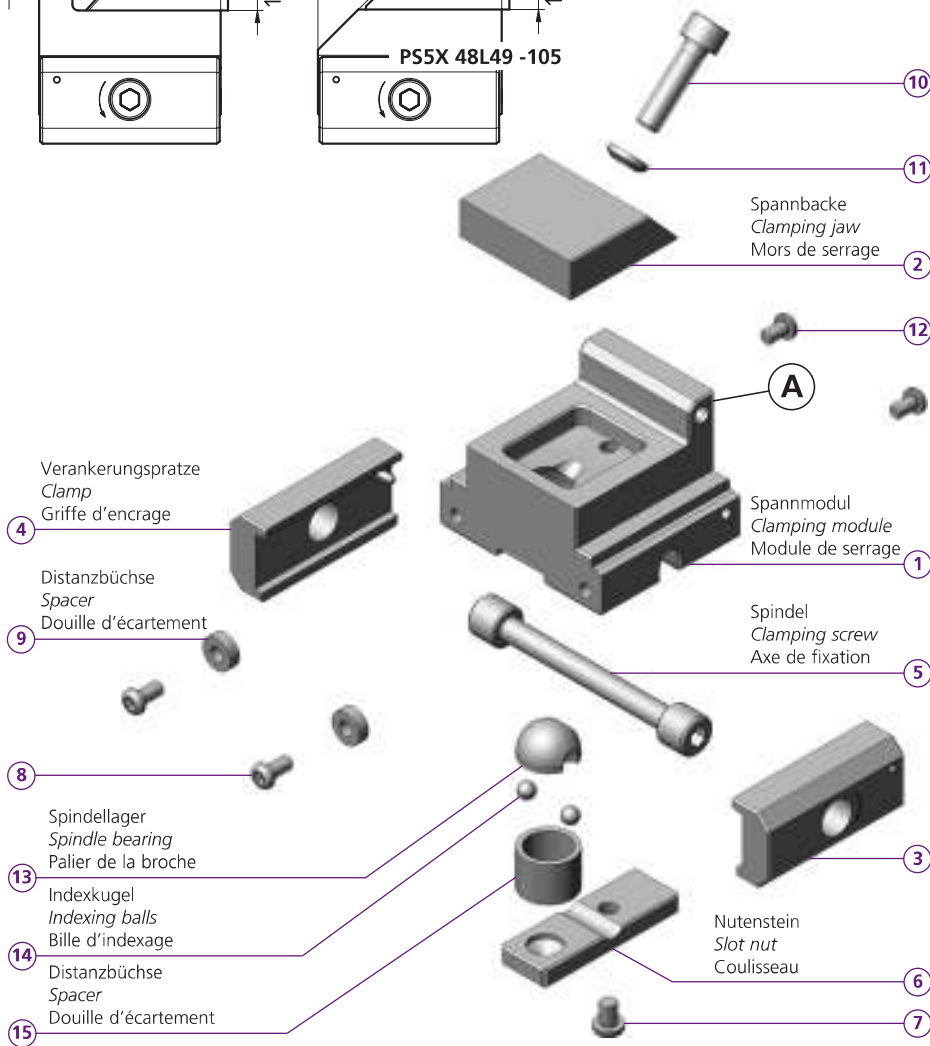
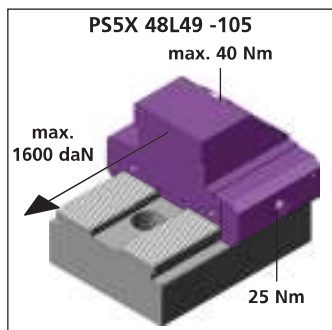
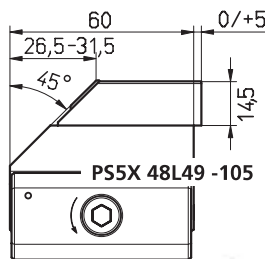
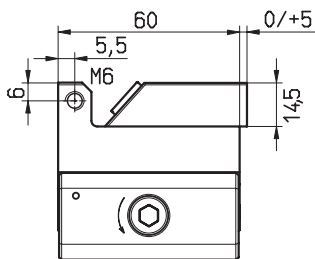
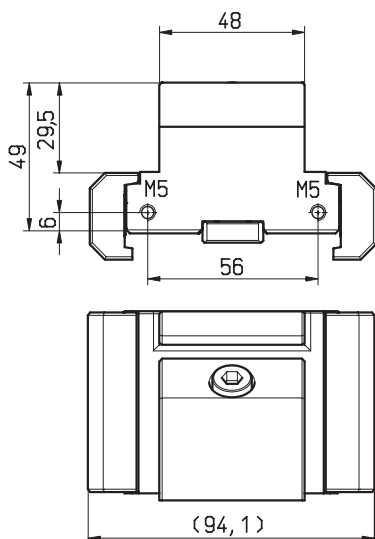
p. 90

Bestellbeispiel
ordering example
exemple de commande: PS1R 48L34 B105



Linear

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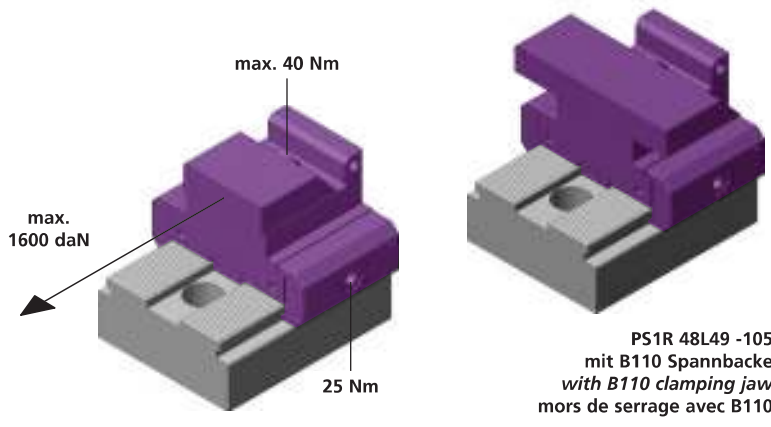


A

- PS5X 48L49 -105
- PS1R 48L49 -105
- PS1F 48L49 -105
- 1 1x PS1R/F 48L49 -105
- 2 1x _____
- 3 1x PCSP 60R
- 4 1x PCSP 60L
- 5 1x PCS 14
- 6 1x PCGU 20 59
- 7 1x M6x8 ISO 7380
- 8 2x M5x14 ISO 4762
- 9 2x PCD 005
- 10 1x M8x30 ISO 4762
- 11 1x PCUSR 14
- 12 2x M5x10 ISO 4762
- 13 1x PCKMR 45 M8
- 14 2x BN 869 d=6
- 15 1x PCD 20L15
- kg 1,5

p. 90

Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,4 t 400 daN
20 Nm =	0,8 t 800 daN
30 Nm =	1,2 t 1200 daN
40 Nm =	1,6 t 1600 daN



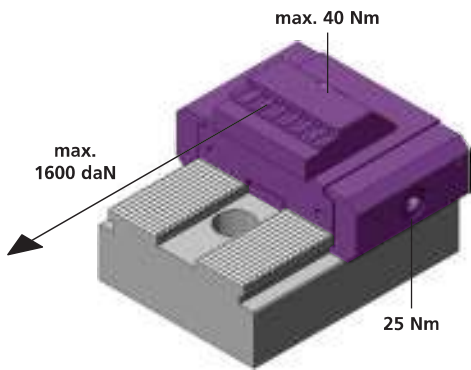
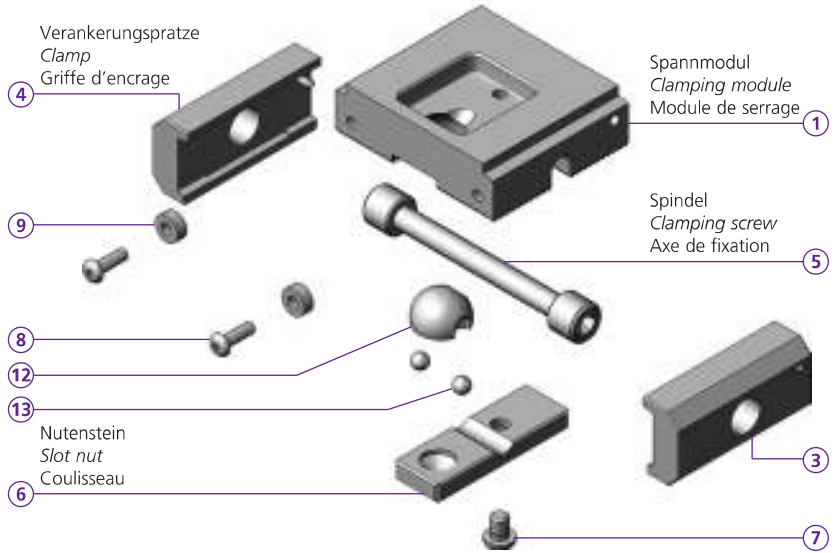
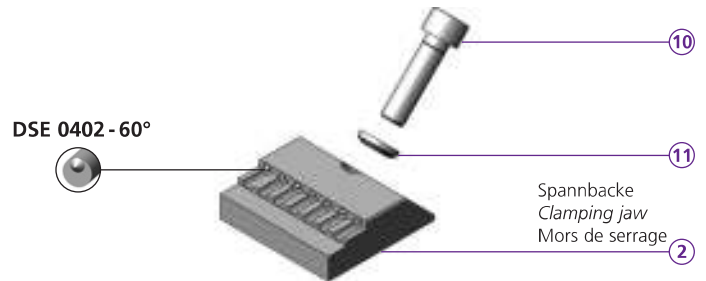
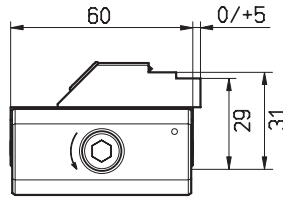
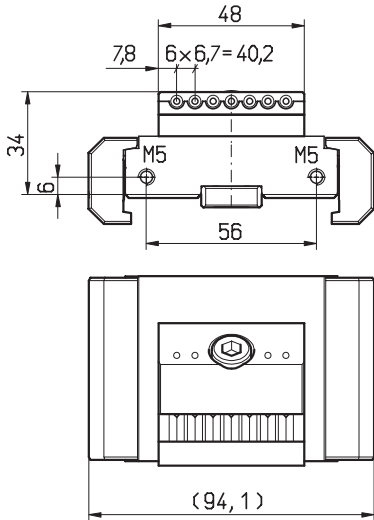
PS1R 48L49 -105 mit B110 Spannbacke with B110 clamping jaw mors de serrage avec B110

Bestellbeispiel / ordering example / exemple de commande: PS1R 48L49 B105



Linear

powerCLAMP



Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,4 t 400 daN
20 Nm =	0,8 t 800 daN
30 Nm =	1,2 t 1200 daN
40 Nm =	1,6 t 1600 daN

PS5X 48L34 -105

- ① 1x PS5X 48L34 -105
- ② 1x ————— p. 90
- ③ 1x PCSP 60R
- ④ 1x PCSP 60L
- ⑤ 1x PCS 14
- ⑥ 1x PCGU 20 59
- ⑦ 1x M6x8 ISO 7380
- ⑧ 2x M5x14 ISO 4762
- ⑨ 2x PCD 005
- ⑩ 1x M8x30 ISO 4762
- ⑪ 1x PCUSR 14
- ⑫ 1x PCKMR 45 M8
- ⑬ 2x BN 869 d=6
- kg 0,48



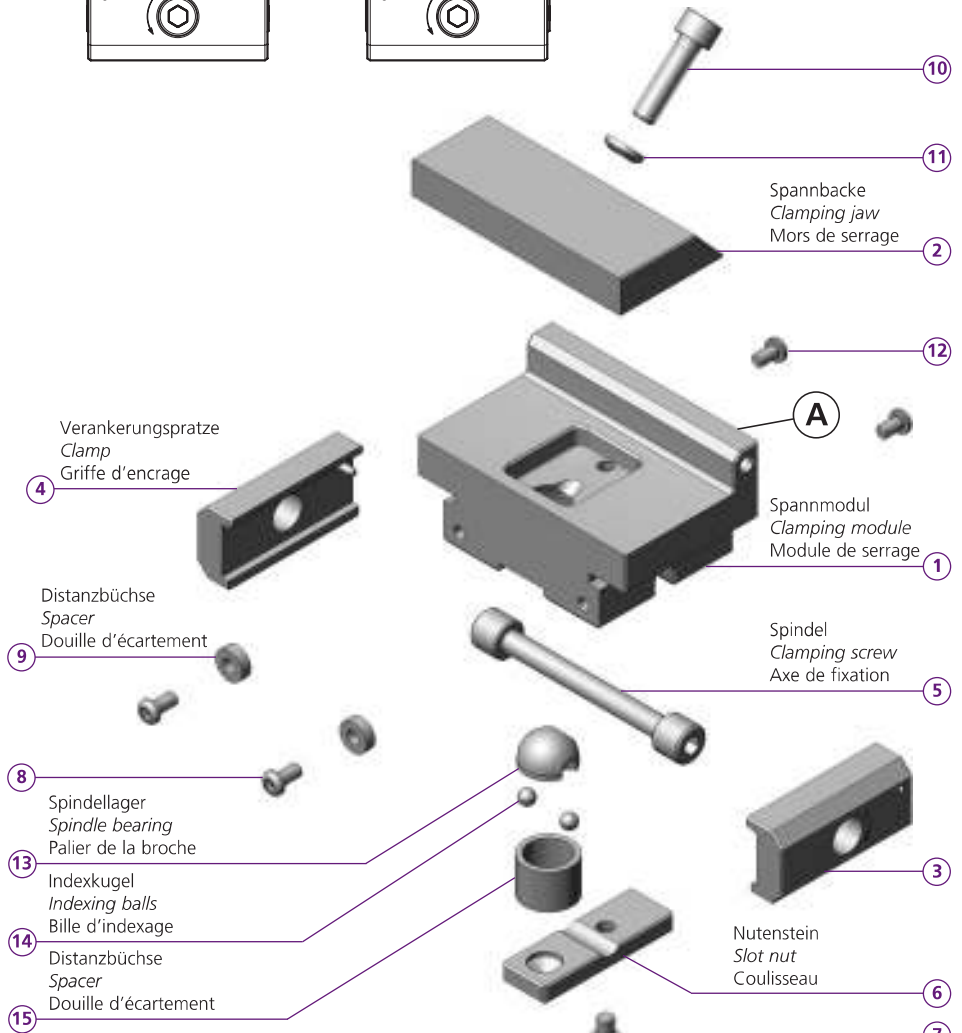
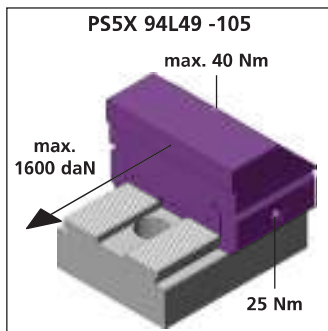
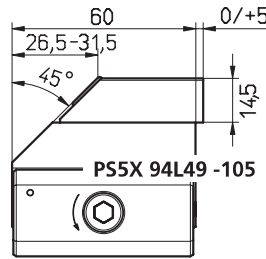
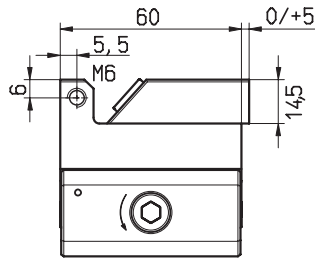
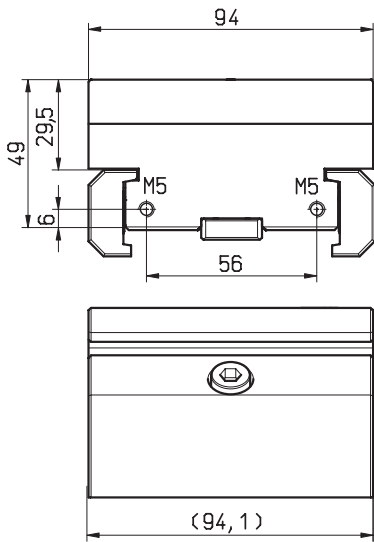
PS5X 48L49 -105
mit B114 Spannbacke
with B114 clamping jaw
mors de serrage avec B114

Bestellbeispiel / ordering example / exemple de commande: PS5X 48L49 B105



Linear

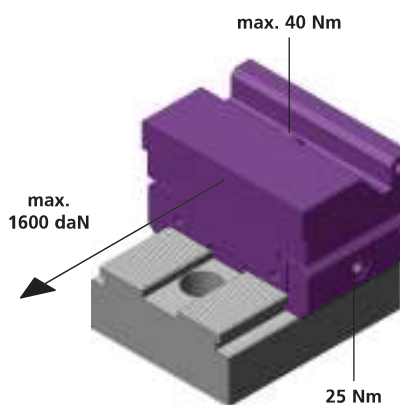
powerCLAMP



Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,4 t 400 daN
20 Nm =	0,8 t 800 daN
30 Nm =	1,2 t 1200 daN
40 Nm =	1,6 t 1600 daN

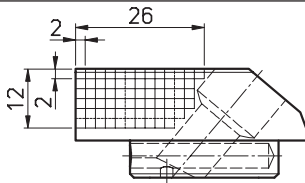
- A**
- PS5X 94L49 -105
 - PS1R 94L49 -105
 - PS1F 94L49 -105
- 1 1x PS1R/F 94L49 -105
 - 2 1x
 - 3 1x PCSP 60R
 - 4 1x PCSP 60L
 - 5 1x PCS 14
 - 6 1x PCGU 20 59
 - 7 1x M6x8 ISO 7380
 - 8 2x M5x14 ISO 4762
 - 9 2x PCD 005
 - 10 1x M8x30 ISO 4762
 - 11 1x PCUSR 14
 - 12 2x M5x10 ISO 4762
 - 13 1x PCKMR 45 M8
 - 14 2x BN 869 d=6
 - 15 1x PCD 20L15
- kg 2,1

p. 90



PS1R 94L49 -105 mit B105 Spannbacke
with B105 clamping jaw
mors de serrage avec B105

Bestellbeispiel / ordering example / exemple de commande: PS1R 48L49 B105



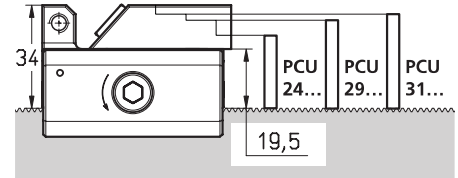
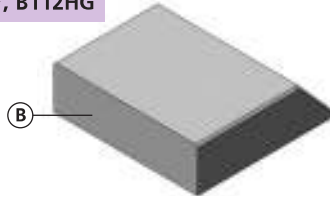
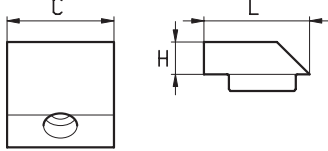
Zum Erstellen Ihrer individuellen Formbacke:
Schnittzeichnung zum Ermitteln der maximalen Bearbeitungsprofiltiefe

If a dedicated jaw is being machined:
This sketch will be of help regarding the workpiece penetration depth

Pour régler votre mors individuel aux étages:
Dessin en coupe pour déterminer la profondeur maximum du profil à usiner

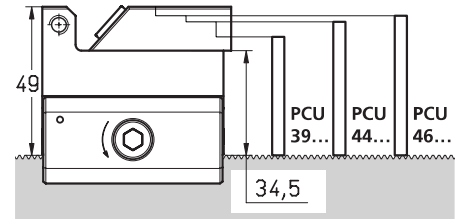
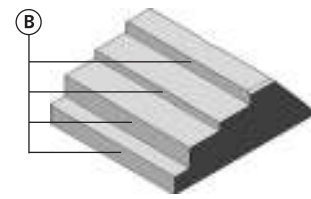
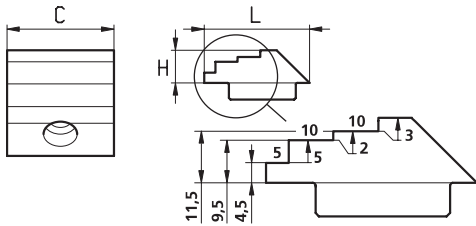
für / for / pour B107, B112, B112E, 112HG

B105, B106, B107*, B140, B141, B110, B111, B112*, B112HG

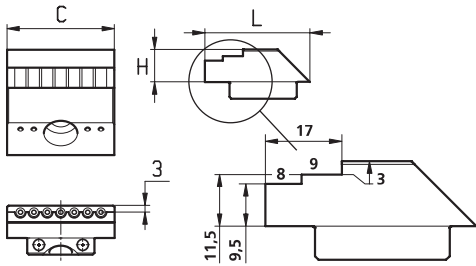


B108, B113

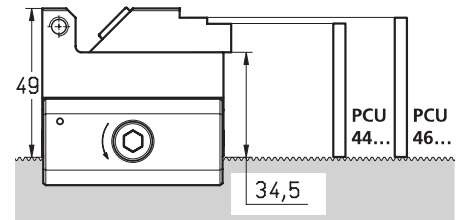
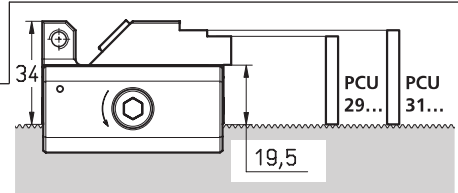
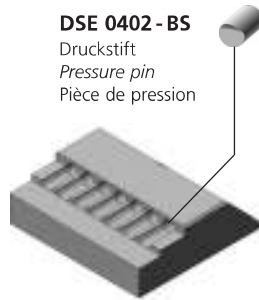
Empfohlen / recommended / recommandé



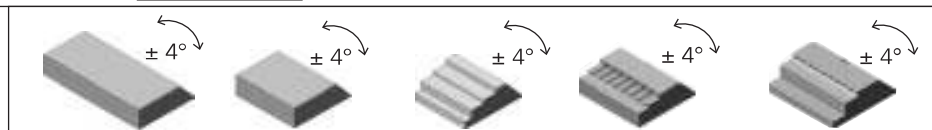
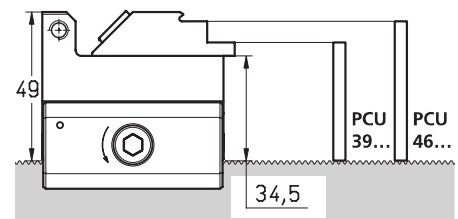
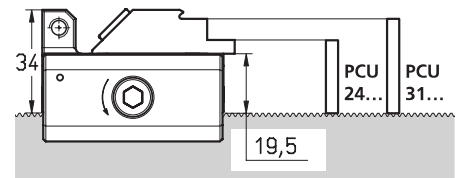
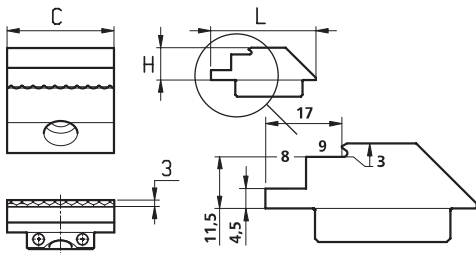
B109, B114



DSE 0402 - BS
Druckstift
Pressure pin
Pièce de pression

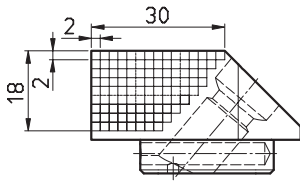


B115 P, B120 P



HG = Hochgenau / high-precision / haute precision

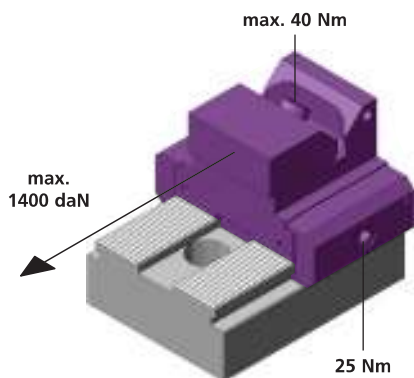
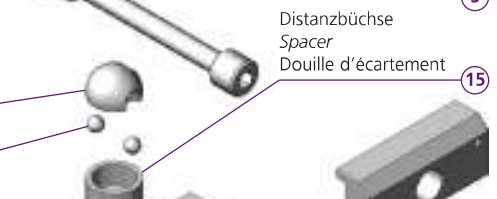
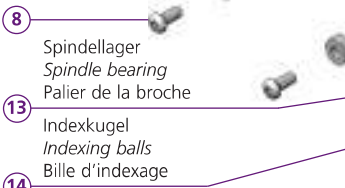
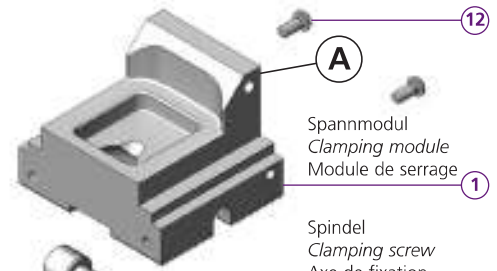
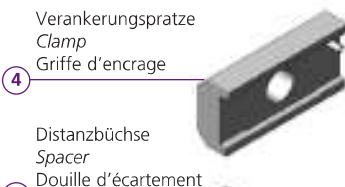
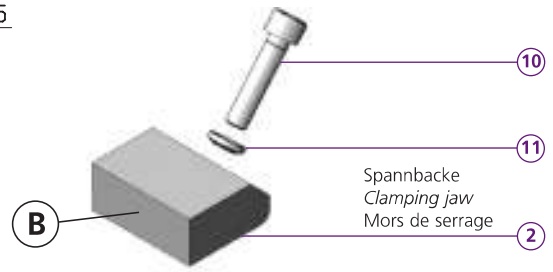
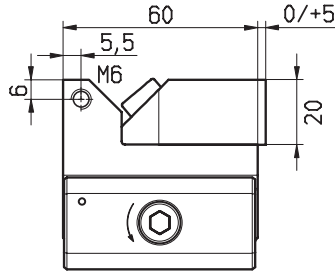
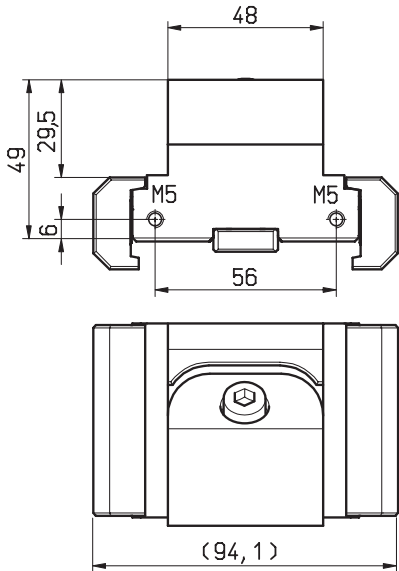
	B105	B106	B107	B108	B109	B140	B141	B110	B111	B112	B112E	B113	B114	B115 P	B120 P	B121 P	P
	B105 P	B106 P	B107 P	B108 P	B109 P	B140 P	B141 P	B110 P	B111 P	B112 P	B112E P	B113 P	B114 P	B115 P	B120 P	B121 P	
C	48	48	48	48	48	78	78	94	94	94	94	94	94	48	94	94	Seite page
H	14,5	14,5	14,5	14,5	14,5	14,5	14,5	14,5	14,5	14,5	14,5	14,5	14,5	14,5	14,5	14,5	84-85
L	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	
i	HV700	HV700	*	HV700	HV700	HV700	HV700	HV700	HV700	HV700	*	**	HV700	HV700	57HRc	57HRc	
	x0,2mm	x0,2mm		x0,2mm	x0,2mm	x0,2mm	x0,2mm	x0,2mm	x0,2mm	x0,2mm			x0,2mm	x0,2mm			



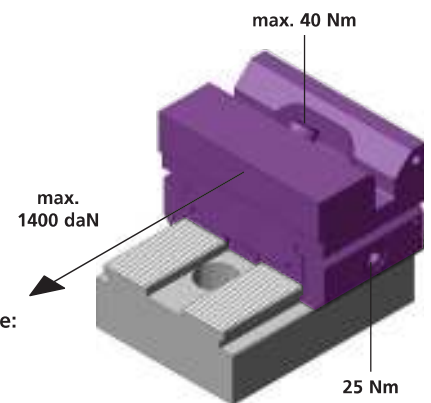
Zum Erstellen Ihrer individuellen Formbacke:
Schnittzeichnung zum Ermitteln der maximalen Bearbeitungsprofiltiefe

If a dedicated jaw is being machined:
This sketch will be of help regarding the workpiece penetration depth

Pour régler votre mors individuel aux étages:
Dessin en coupe pour déterminer la profondeur maximum du profil à usiner



Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,35 t 350 daN
20 Nm =	0,7 t 700 daN
30 Nm =	1,05 t 1050 daN
40 Nm =	1,4 t 1400 daN



PS1R 48L49 -105H20

1	1x PS1R 48L49 -105 H20
2	1x _____
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 59
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M8x35 ISO 4762
11	1x PCUSR 14
12	2x M5x10 ISO 4762
13	1x PCKMR 51 M8
14	2x BN 869 d=6
15	1x PCD 20L 095
kg	1,5

PS1R 94L49 -105H20

1	1x PS1R 94L49 -105 H20
2	1x _____
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 59
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M8x35 ISO 4762
11	1x PCUSR 14
12	2x M5x10 ISO 4762
13	1x PCKMR 51 M8
14	2x BN 869 d=6
15	1x PCD 20L 095
kg	2,1

**Bestellbeispiel
ordering example
exemple de commande:**
PS1R 48L49 B107H20

	B106H20	B107H20	B111H20	B112H20
C	48	48	94	94
H	20	20	20	20
L	47	47	47	47
i	HV700 x0,2mm	*	HV700 x0,2mm	*

B106H20, B107H20, B111H20, B112H20

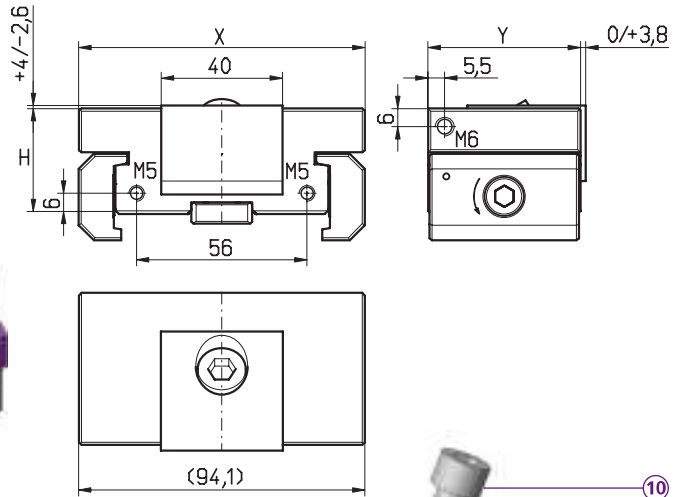
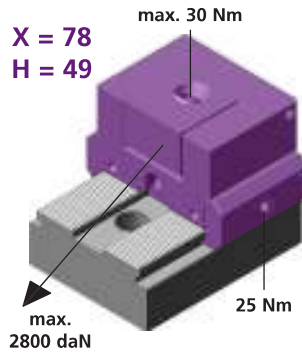
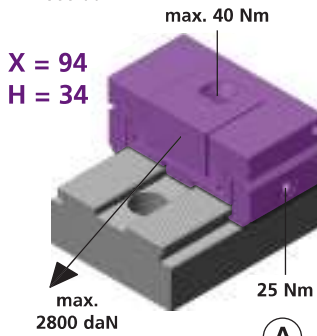
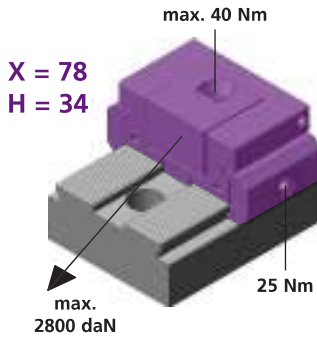
PS1R/F 78N34 -80

PS1R/F 78N49 -80

PS1R/F 94N34 -80



powerCLAMP



PS1F 78N34 -80
PS1R 78N34 -80

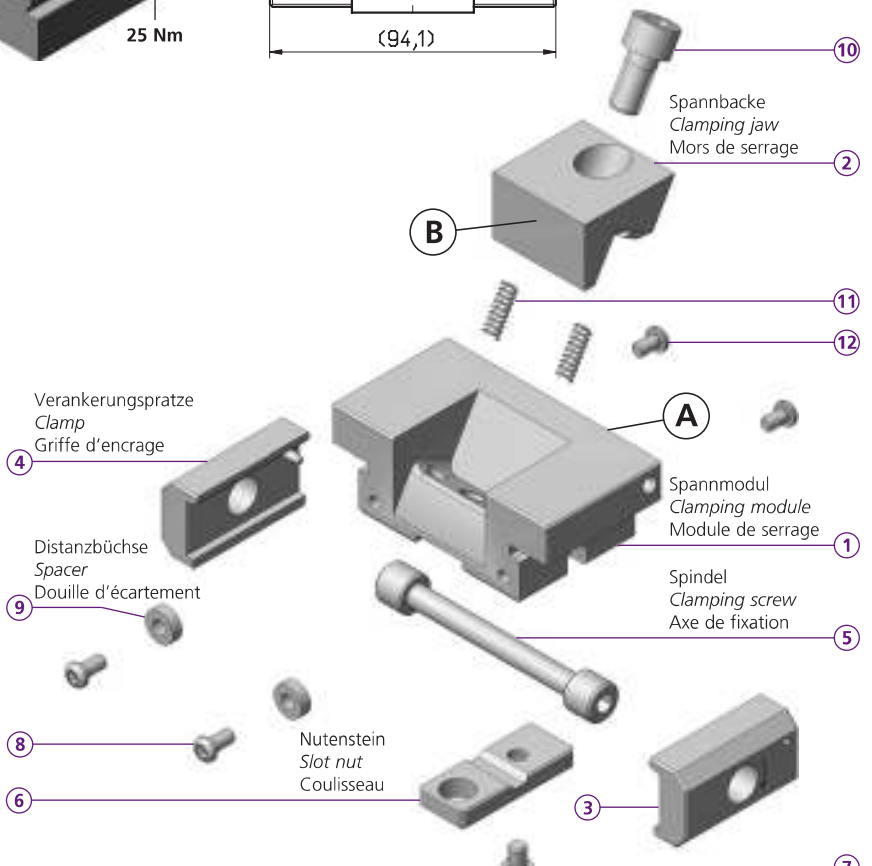
1	1x PS1R/F 78N34 -80
2	1x _____
3	1x PCSP 50R
4	1x PCSP 50L
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M10x25 ISO 4762
11	2x FED 0618
12	2x M5x10 ISO 4762
X	78
H	34
Y	50
kg	1,0

PS1F 78N49 -80
PS1R 78N49 -80

1	1x PS1R/F 78N49 -80
2	1x _____
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M10x25 ISO 4762
11	2x FED 0618
12	2x M5x10 ISO 4762
X	78
H	49
Y	60
kg	1,4

PS1F 94N34 -80
PS1R 94N34 -80

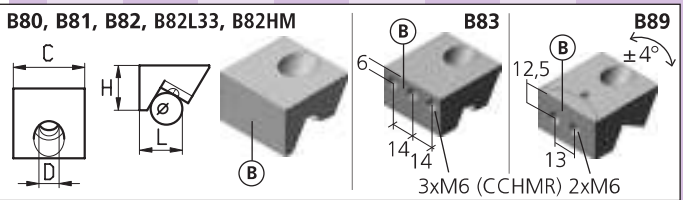
1	1x PS1R/F 94N34 -80
2	1x _____
3	1x PCSP 50R
4	1x PCSP 50L
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M10x25 ISO 4762
11	2x FED 0618
12	2x M5x10 ISO 4762
X	94
H	34
Y	50
kg	1,4



Bestellbeispiel
ordering example
exemple de commande: PS1R 78N34 B81

	B80	B81	B82	B82L33	B82HM	B83	B89
C	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25
L	22	22	22,2	33	22,2	22	29
D	11	11	11	11	11	11	11
e	15	15	15	15	15	15	15
i	56HRc	56HRc	*	*	HM	HV700	HV700

x0,2mmx0,2mm



* = weich / soft / doux

HM = Hartmetallbeschichtet / carbide coated / revêtu avec carbure

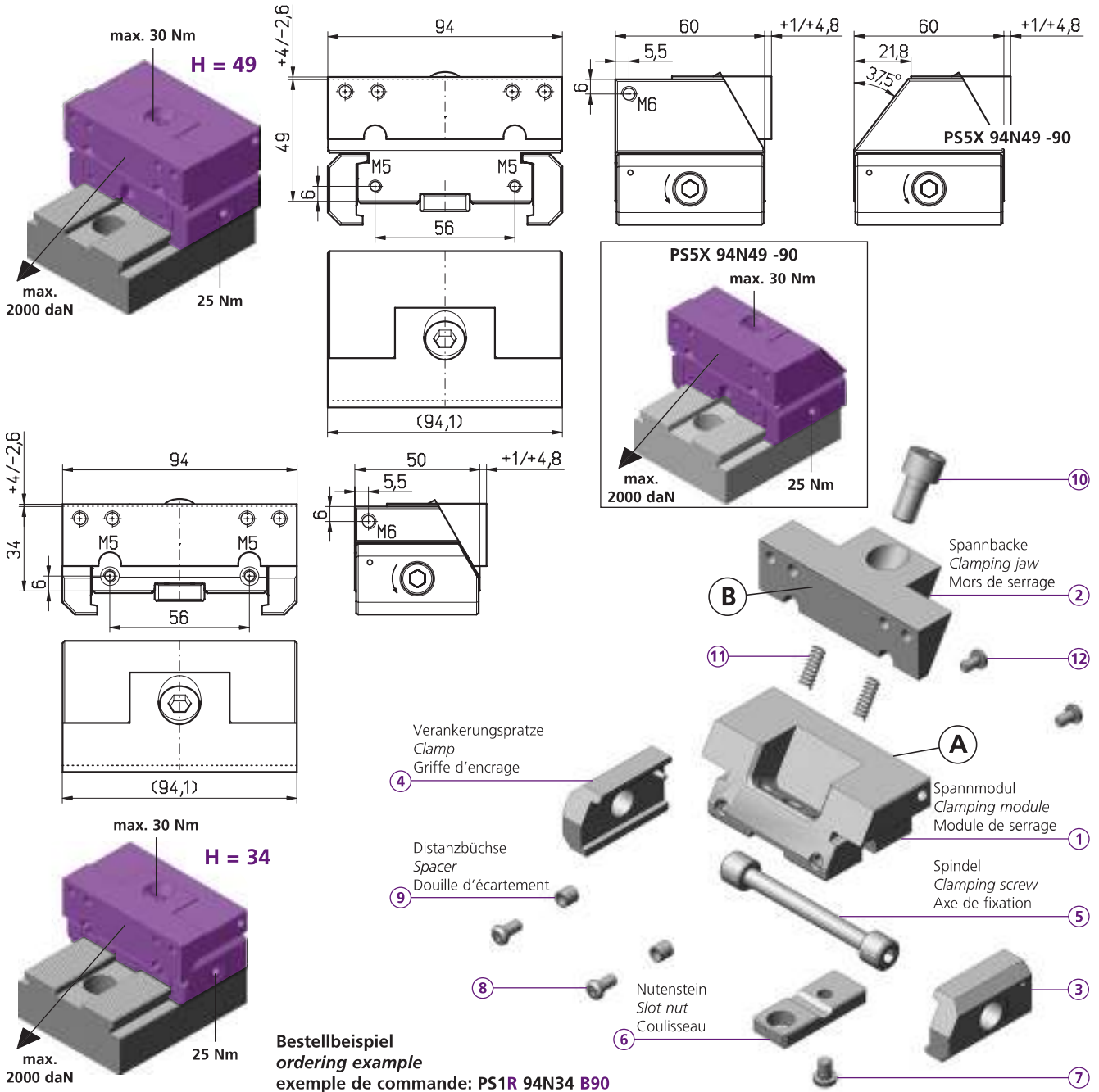
PS1R/F 94N34 -90

PS1R/F 94N49 -90

PS5X 94N49 -90



powerCLAMP



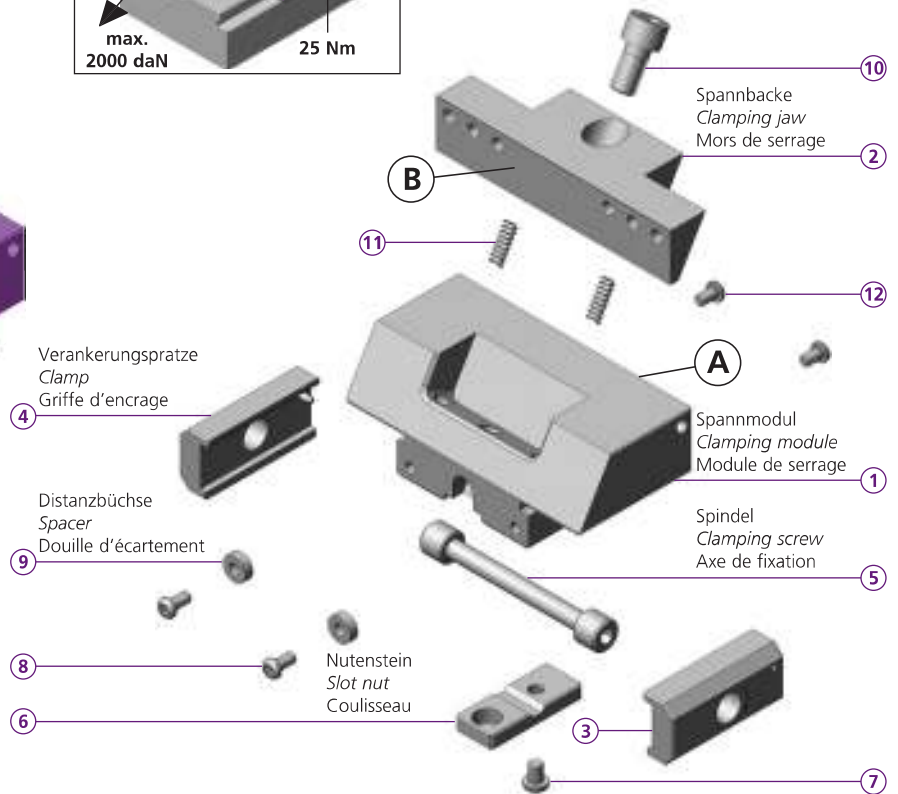
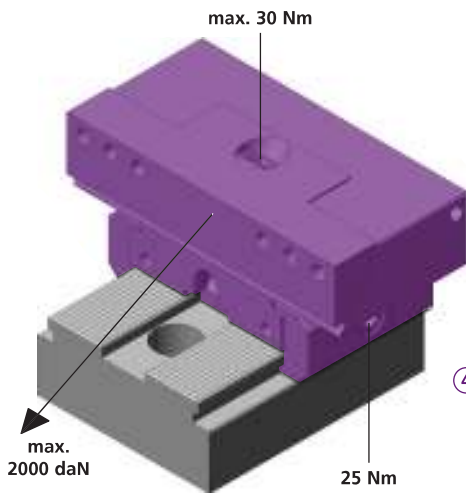
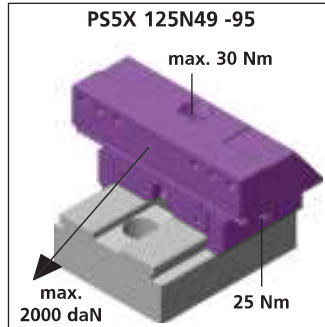
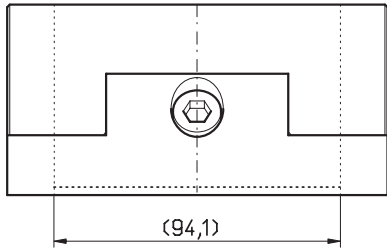
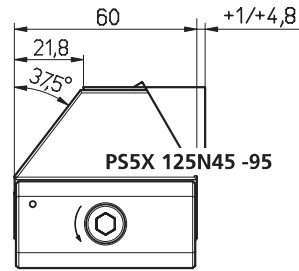
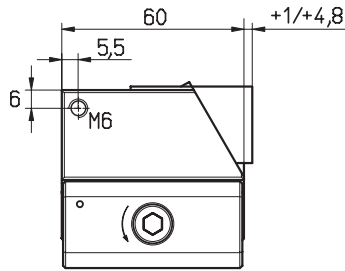
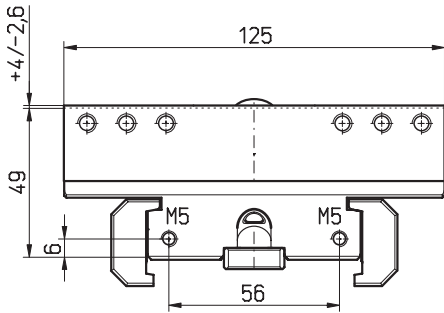
Bestellbeispiel
ordering example
exemple de commande: PS1R 94N34 B90

	A
PS1F 94N34 -90	
PS1R 94N34 -90	
1	1x PS1R/F 94N34 -90
2	1x _____
3	1x PCSP 50R F
4	1x PCSP 50L F
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
8	2x M5x16 ISO 4762
9	2x PCD 008
10	1x M10x25 ISO 4762
11	2x FED 0618
12	2x M5x10 ISO 4762
kg	1,4

	A
PS5X 94N49 -90	
PS1F 94N49 -90	
PS1R 94N49 -90	
1	1x PS1R/F 94N49 -90
2	1x _____
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M10x25 ISO 4762
11	2x FED 0618
12	2x M5x10 ISO 4762
kg	2,0

	B	B90	B91	B92	B93	B94
C		94	94	94	94	94
H		25	25	25	25	25
L		23	23	23	23	40
D		11	11	11	11	11
ø		15	15	15	15	15
i		HV700	HV700	*	HV700	*
		x0,2mm	x0,2mm		x0,2mm	

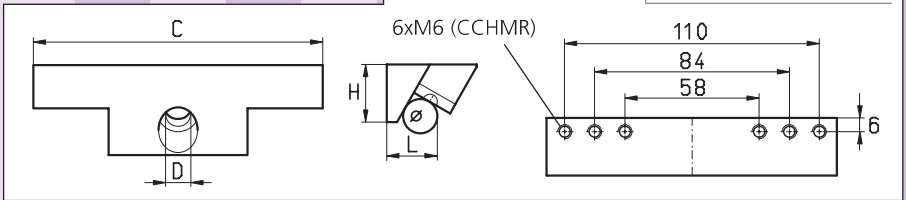
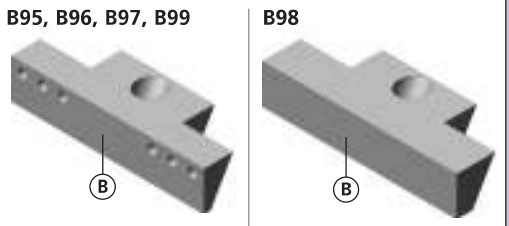
B90, B91, B92, B93, B94	
80	C
54	D
6	H
4xM6 (CCHMR)	L
B	ø



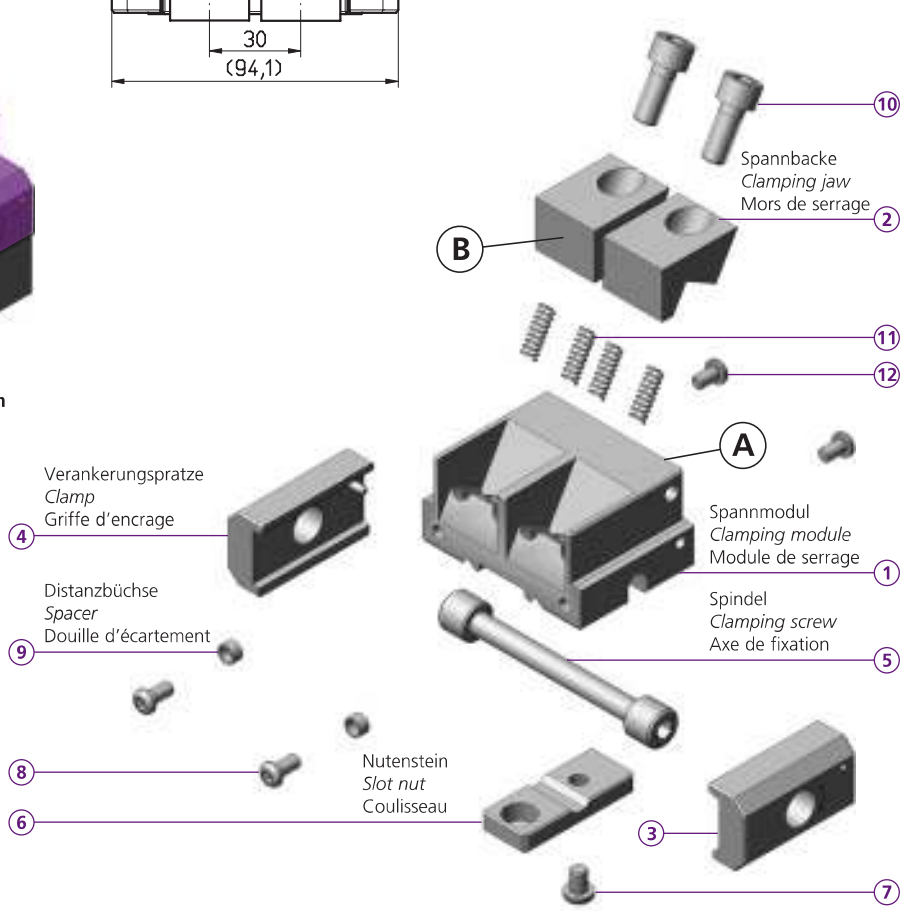
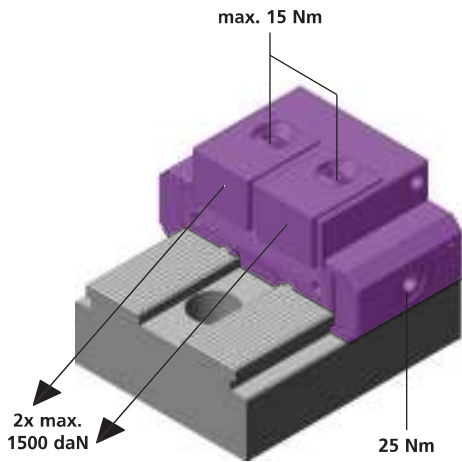
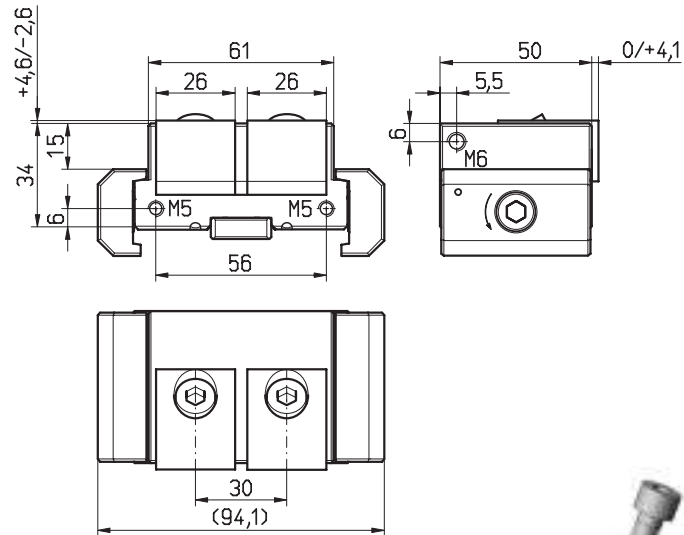
Bestellbeispiel / ordering example / exemple de commande: PS1R 125N49 B95

315	PS5X 125N49 -95
	PS1F 125N49 -95
	PS1R 125N49 -95
1	1x PS1R/F 125N49 -95
2	1x _____
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
8	2x M5x14 ISO 4762
9	2x PCD 005
10	1x M10x25 ISO 4762
11	2x FED 0618
12	2x M5x10 ISO 4762
kg	2,4

	B95	B96	B97	B98	B99
C	125	125	125	125	125
H	25	25	25	25	25
L	23	23	23	30	23
D	11	11	11	11	11
o	15	15	15	15	15
i	HV700	HV700	*	*	HV700
	x0,2mmx0,2mm				x0,2mm

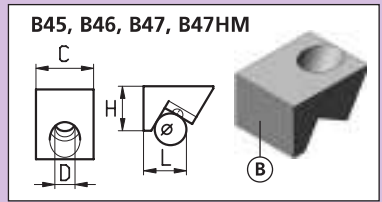


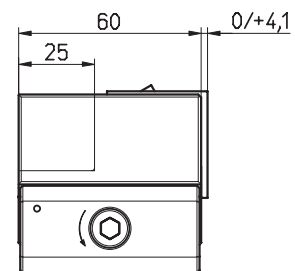
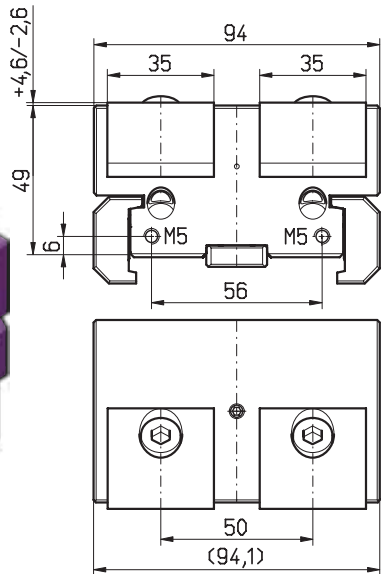
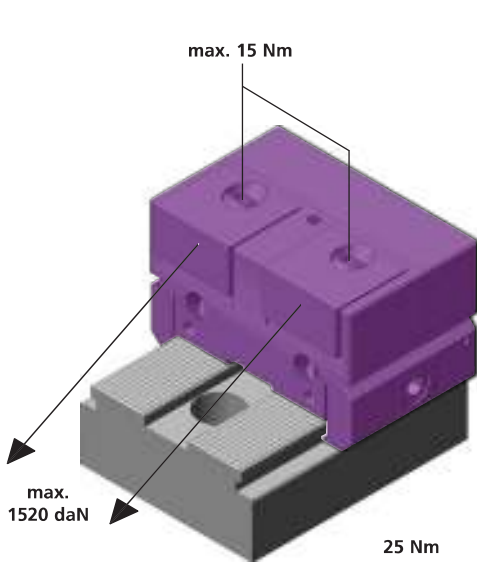
* = weich / soft / doux



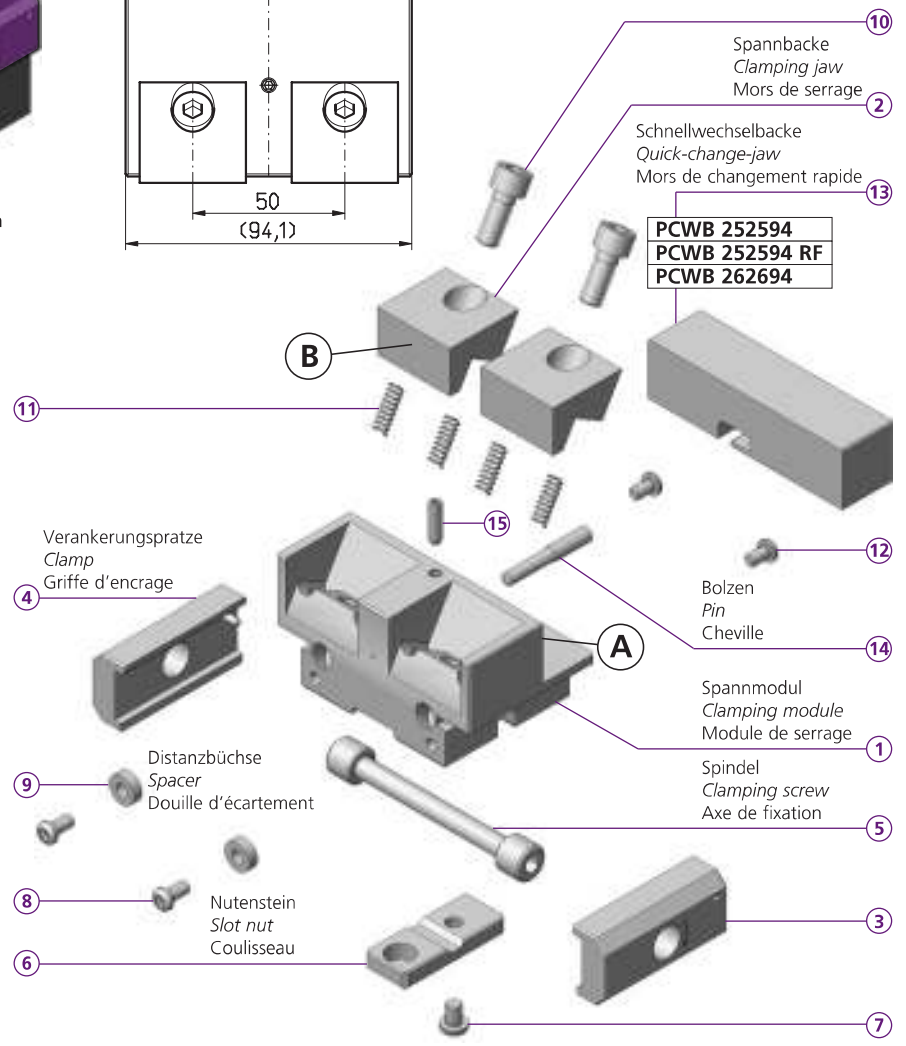
Bestellbeispiel / ordering example / exemple de commande: PS2R 61N34 B46

PS2F 61N34 -45		PS2R 61N34 -45			
		B45	B46	B47	B47HM
1	1x PS2R/F 61N34 -45	C	26	26	26
2	2x	H	20	20	20
3	1x PCSP 50R	L	19	19	19,1
4	1x PCSP 50L	D	9	9	9
5	1x PCS 14	ø	12	12	12
6	1x PCGU 20 49	i	56HRc	56HRc	*
7	1x M6x8 ISO 7380				HM
8	2x M5x16 ISO 4762				
9	2x PCD 005				
10	2x M8x20 ISO 4762				
11	4x FED 0618				
12	2x M5x10 ISO 4762				
kg	1,2				



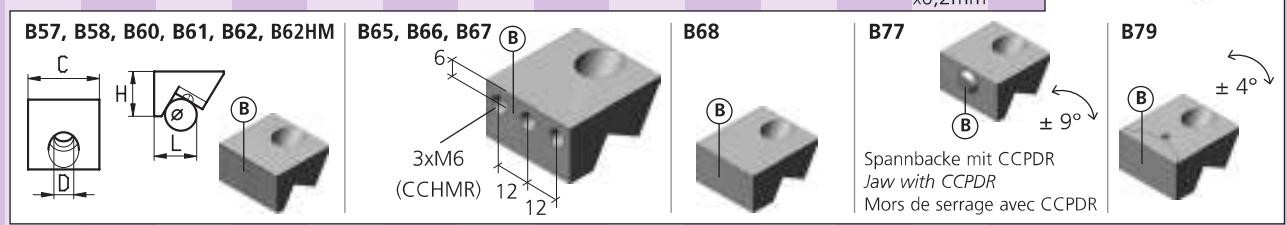
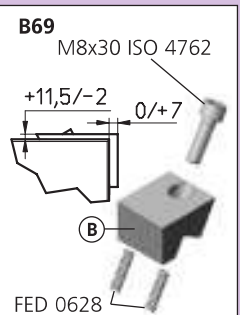


- PS2X 94N49 -60**
- ① 1x PS2X 94N49 -60
 - ② 2x —
 - ③ 1x PCSP 60R
 - ④ 1x PCSP 60L
 - ⑤ 1x PCS 14
 - ⑥ 1x PCGU 20 49
 - ⑦ 1x M6x8 ISO 7380
 - ⑧ 2x M5x14 ISO 4762
 - ⑨ 2x PCD 005
 - ⑩ 2x M8x20 ISO 4762
 - ⑪ 4x FED 0618
 - ⑫ 2x M5x10 ISO 4762
 - ⑬ 1x PCWB 2525 94
 - ⑭ 1x PCB0 0605 40
 - ⑮ 1x M5x16 ISO 4026
- kg 2,2



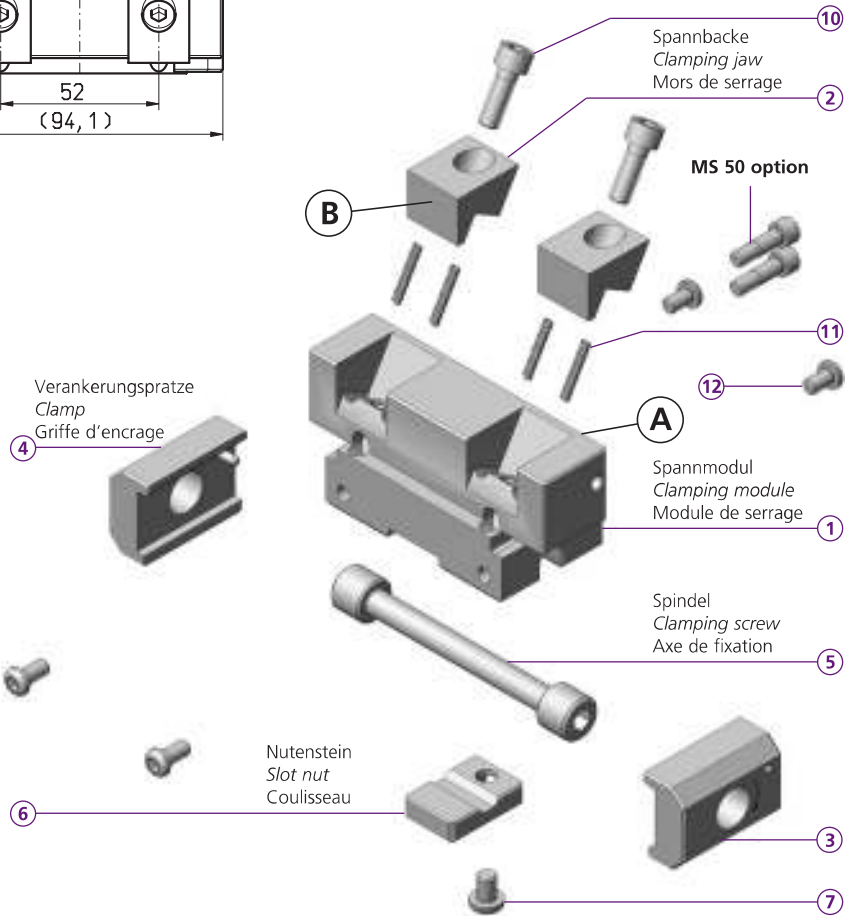
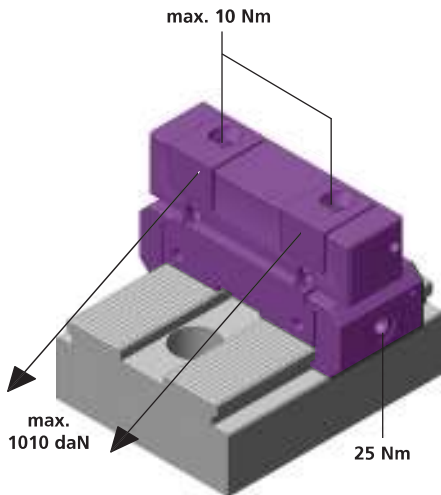
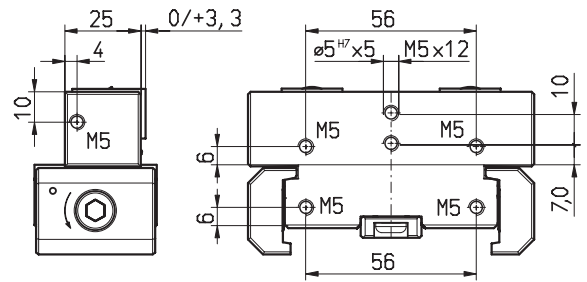
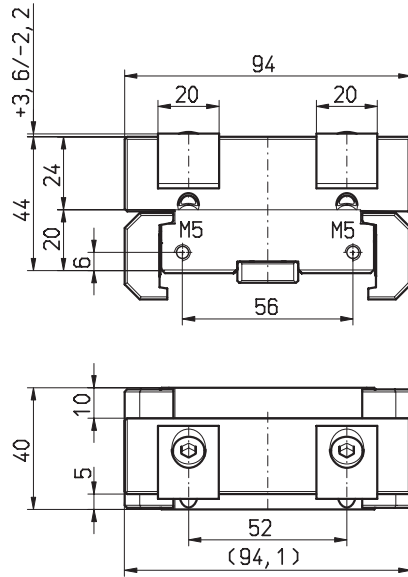
Bestellbeispiel / ordering example / exemple de commande: PS2X 94N49 B60

	B57	B58	B60	B61	B62	B62HM	B65	B66	B67	B68	B69	B77	B79
③	35	35	35	35	35	35	35	35	35	35	35	35	35
④	20	20	20	20	20	20	20	20	20	20	25	20	20
⑤	19	24	19	19	19	19	19	19	24	26	21	22	25
⑥	9	9	9	9	9	9	9	9	9	9	9	9	9
⑦	12	12	12	12	12	12	12	12	12	12	12	12	12
⑧	ALU *	ALU *	56 HRc	56 HRc	*	HM	56 HRc	56 HRc	56 HRc	*	*	56 HRc	HV700 x0,2mm



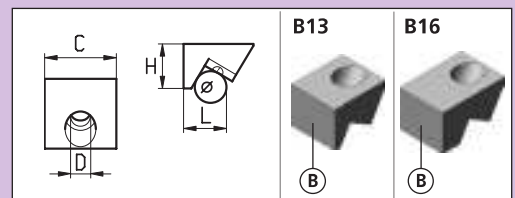
* = weich / soft / doux

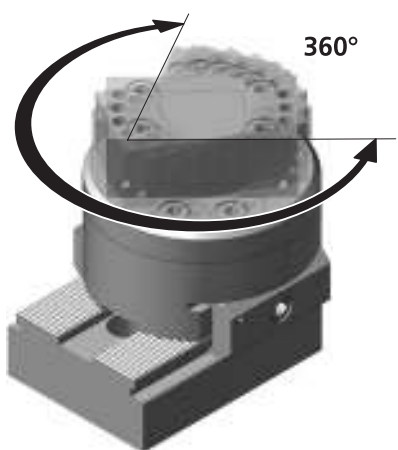
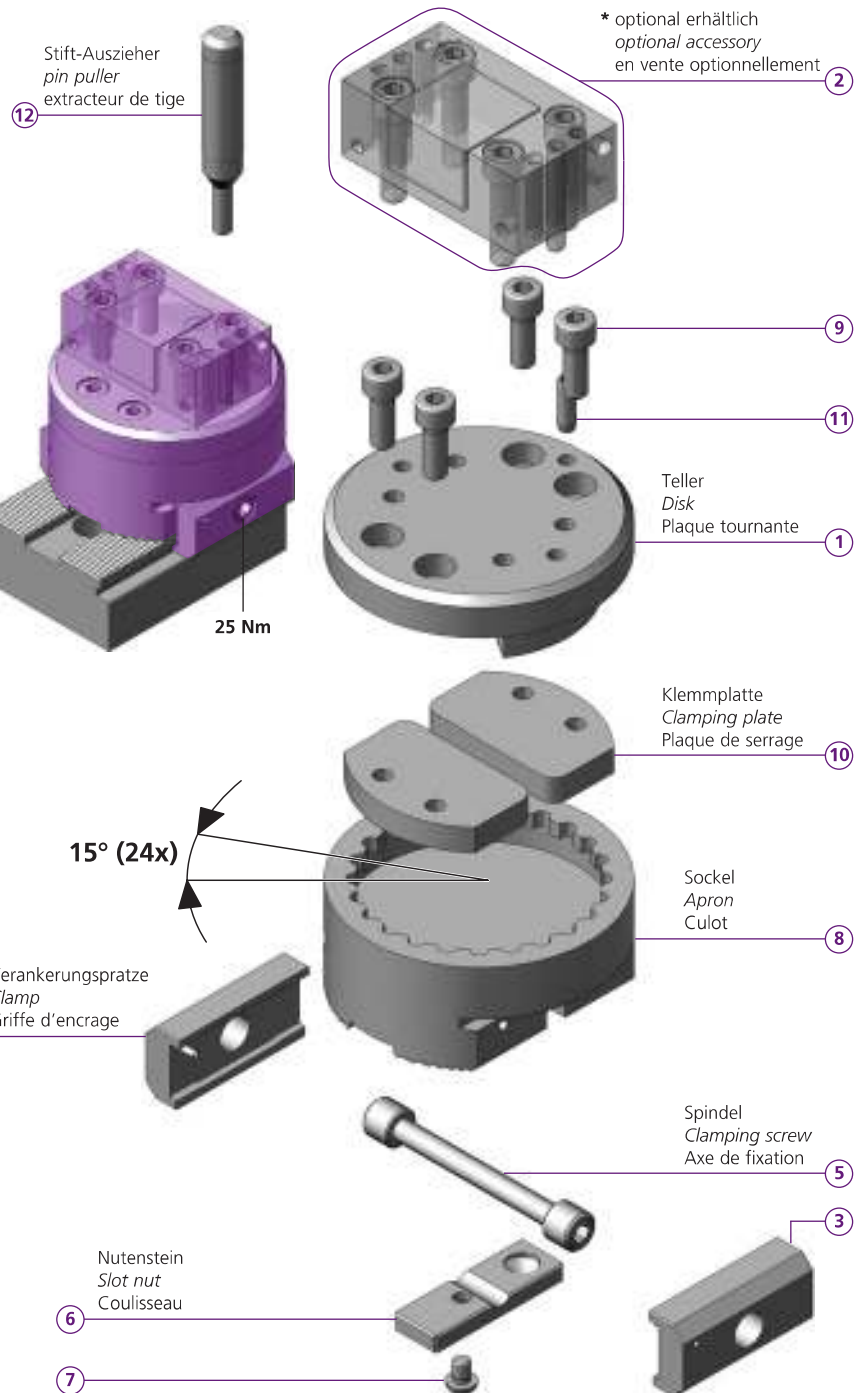
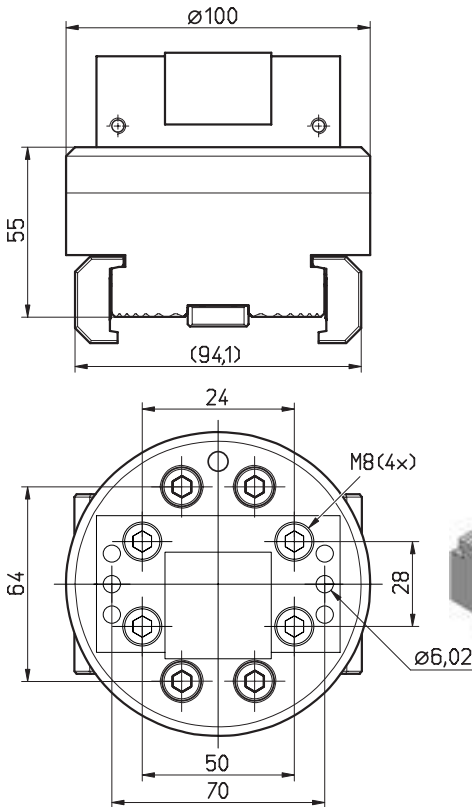
HM = Hartmetallbeschichtet / carbide coated / revêtu avec carbure



Bestellbeispiel / ordering example / exemple de commande: PS1G 49N44 B13

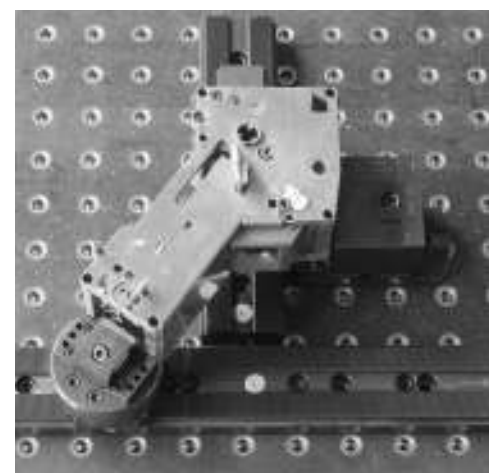
PS2G 94N44 -13		Bestellbeispiel / ordering example / exemple de commande: PS1G 49N44 B13				
		B13	B14	B15	B16	
1	1x PS2G 94N44 -13					
2	2x					
3	1x PCSP 40R					
4	1x PCSP 40L					
5	1x PCS 14					
6	1x PCGU 20 30					
7	1x M6x8 ISO 7380					
10	2x M6x16 ISO 4762					
11	4x FED 03018					
12	4x M5x10 ISO 4762					
kg	0,6					
		C	20	20	20	20
		H	16	16	16	16
		L	13,8	13,8	13,8	19
		D	6,5	6,5	6,5	6,5
		e	10	10	10	10
		i	HV700	HV700	*	*
			x0,2mm x0,2mm			





PTX 100 55	
①	1x MTX 100 -15
②	1x compactCLAMP / microCLAMP
③	1x PCSP 60L
④	1x PCSP 60R
⑤	1x PCS 14
⑥	1x PCGU 20 59
⑦	1x M6x8 ISO 7380
⑧	1x PTX 100-40
⑨	4x M8x22 ISO 4762
⑩	2x PCKLPL 60
⑪	1x CCBO 0802
⑫	1x CCAZ 1050
kg	3,3

- * VS1R 19N35 -20
- VS1R 26L35 -31
- VS1R 26N35 -26
- VS1R/F 41L30 -51
- VS1R/F 41N30 -60
- VS1R/F 80L30 -51



Bestellbeispiel / ordering example / exemple de commande: PTX 100 55

Plattenspanner

Plate clamping modul

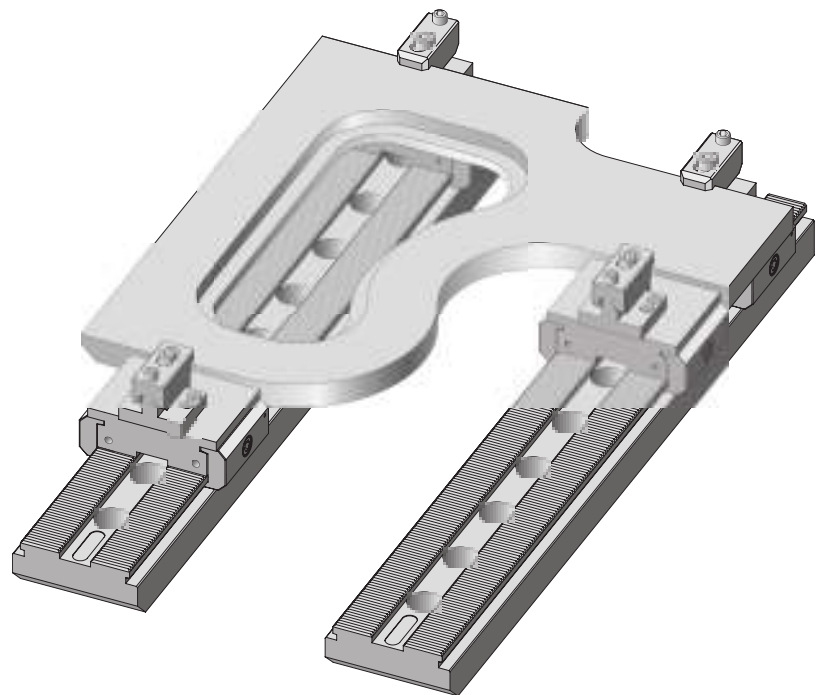
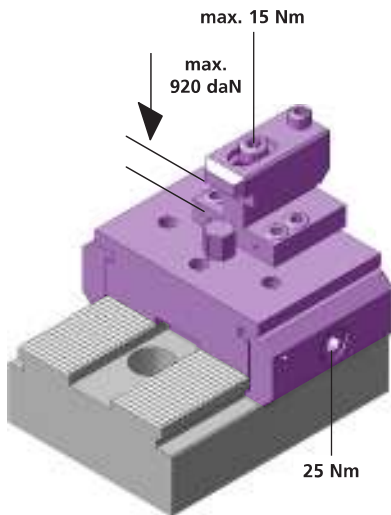
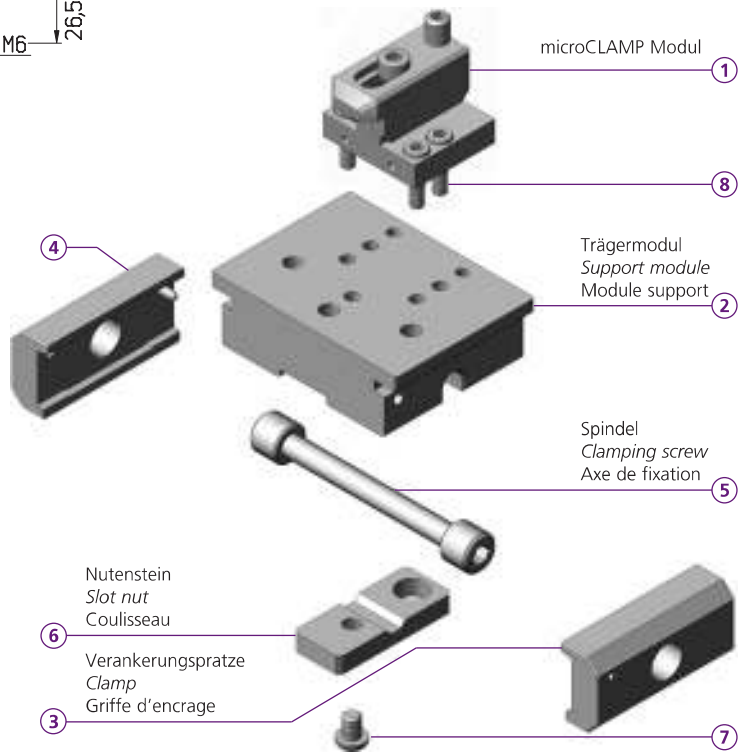
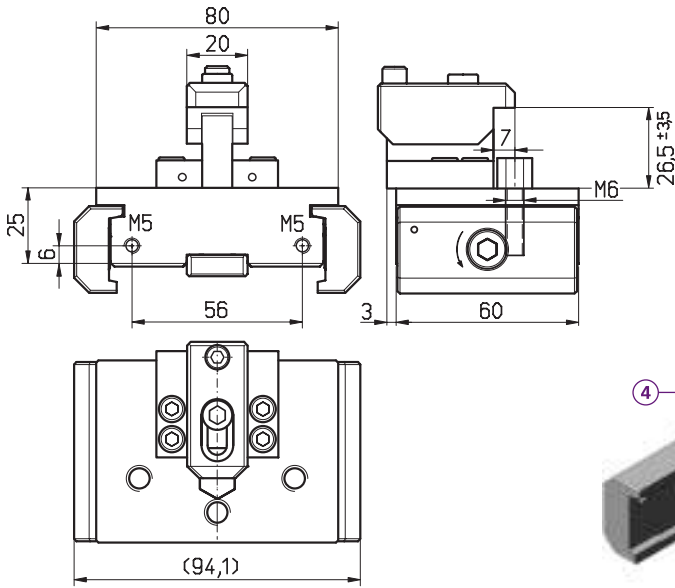
Serrage pour plaques

PS1F 20L35 BV1

PS1F 20L35 BV1 NS



powerCLAMP



PS1F 20L35 BV1

- ① 1x MV1F 20L35 -V1
- ② 1x PCT MV1F
- ③ 1x PCSP 60R
- ④ 1x PCSP 60L
- ⑤ 1x PCS 14
- ⑥ 1x PCGU 20 49
- ⑦ 1x M6x8 ISO 7380
- ⑧ 4x MS 50
- kg 1,3

PS1F 20L35 BV1 NS

- ① 1x MV1F 20L35 -V1
- ② 1x PCT MV1F NS
- ③ 1x PCSP 60R
- ④ 1x PCSP 60L
- ⑤ 1x PCS 14
- ⑥ 1x PCGU 20 49
- ⑦ 1x M6x8 ISO 7380
- ⑧ 4x MS 50
- kg 1,3

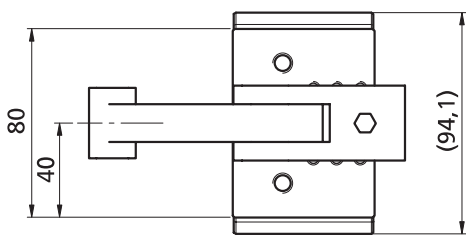
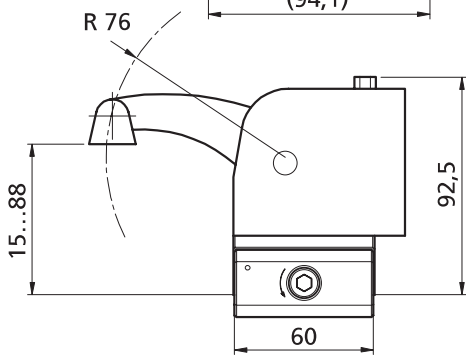
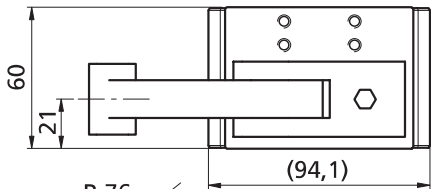
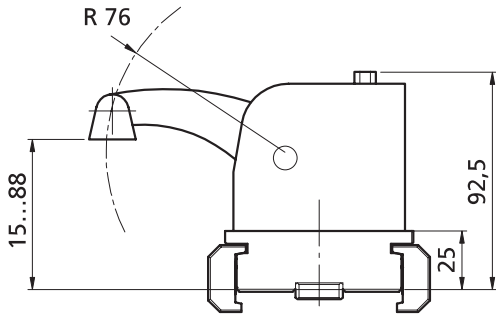
NS = Trägermodul freie Positionierung ohne Verzahnung
Carrier module without positioning serration for free positioning
Support de module sans denture pour positionnement libre

Bestellbeispiel / ordering example / exemple de commande: PS1F 20L35 BV1

PS1F -KLD1
PS1F -KLD1 NS



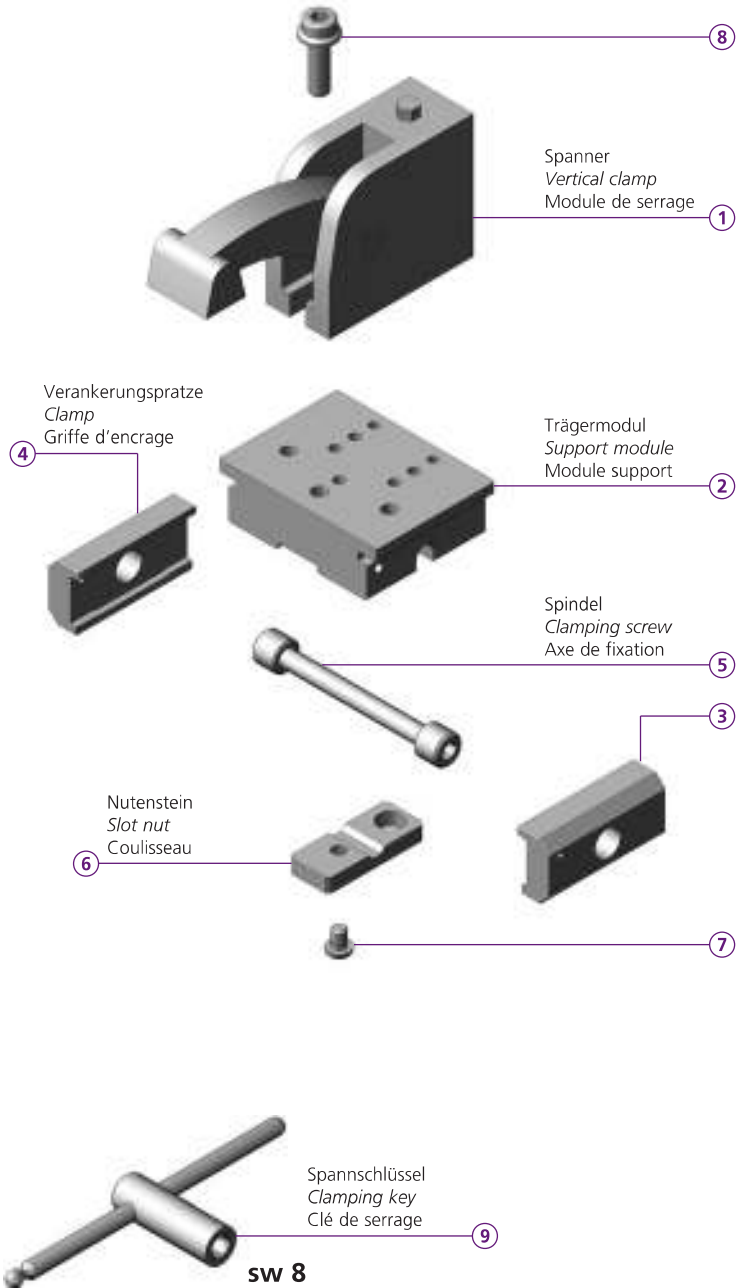
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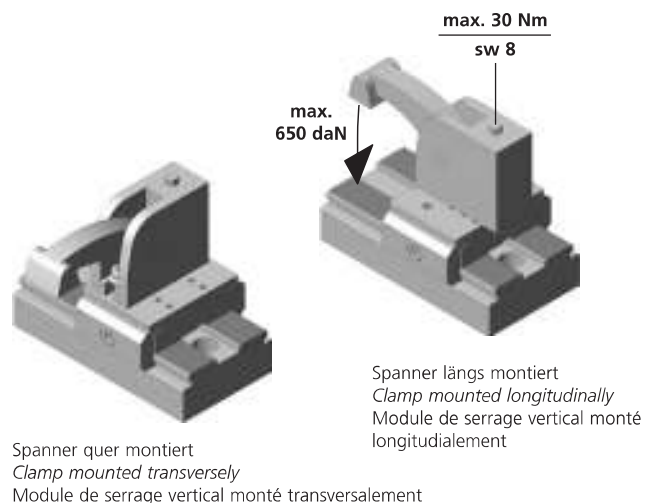
NS = Trägermodul freie Positionierung ohne Verzahnung
Carrier module without positioning serration for free positioning
Support de module sans denture pour positionnement libre

PS1F -KLD1 NS	
①	1x 07-020
②	1x PCT MV1F NS
③	1x PCSP 60R
④	1x PCSP 60L
⑤	1x PCS 14
⑥	1x PCGU 20 49
⑦	1x M6x8 ISO 7380
⑧	3x M8x25 TW080012-02
⑨	1x 07-180
kg	2,2

PS1F -KLD1	
①	1x 07-020
②	1x PCT MV1F
③	1x PCSP 60R
④	1x PCSP 60L
⑤	1x PCS 14
⑥	1x PCGU 20 49
⑦	1x M6x8 ISO 7380
⑧	3x M8x25 TW080012-02
⑨	1x 07-180
kg	2,2



Bestellbeispiel / ordering example / exemple de commande: **PS1F -KLD1 NS**

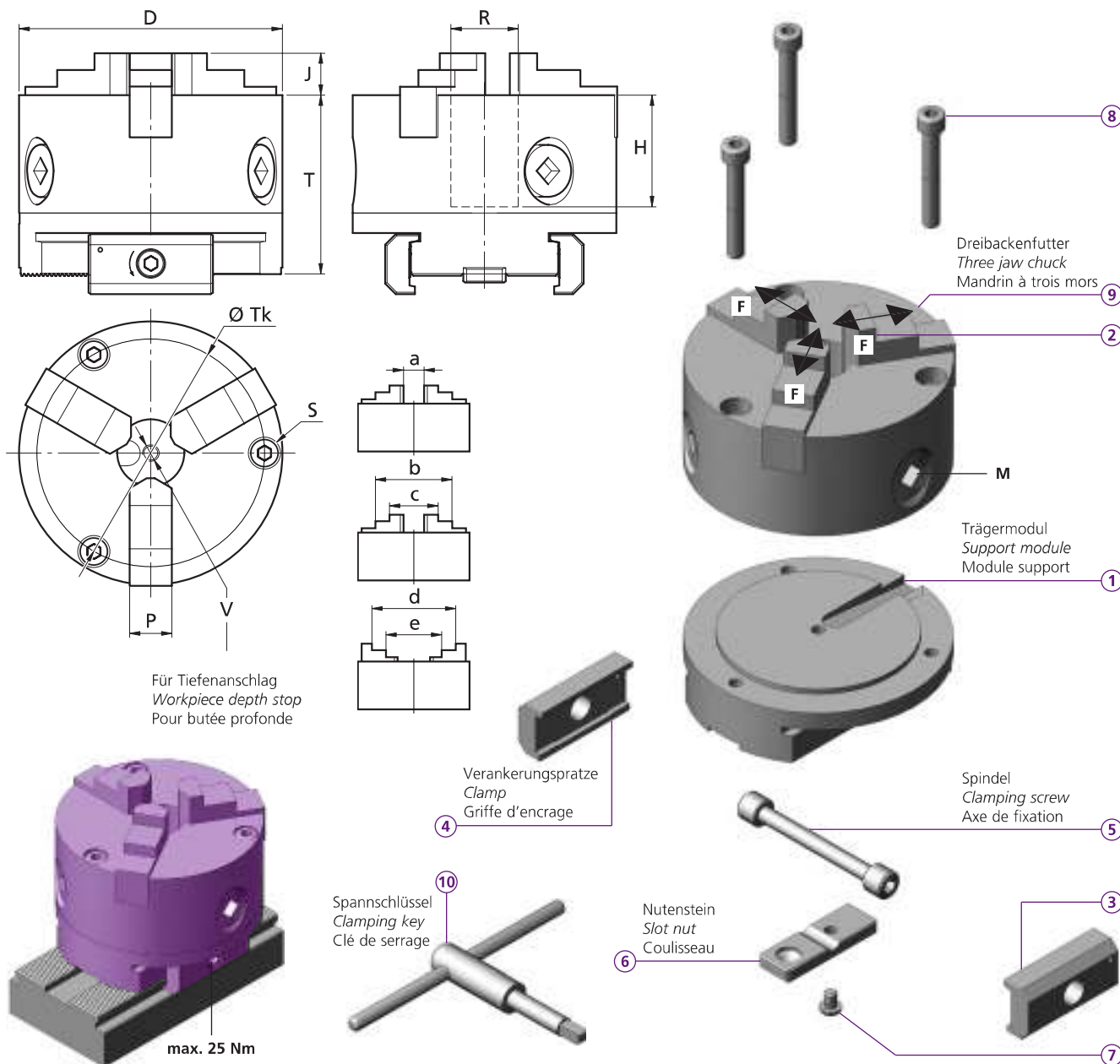


Dreibackenfutter
Three jaw chuck
Mandrin à trois mors

PS3X 80L75 BSET
PS3X 100L82 BSET
PS3X 125L87 BSET



powerCLAMP

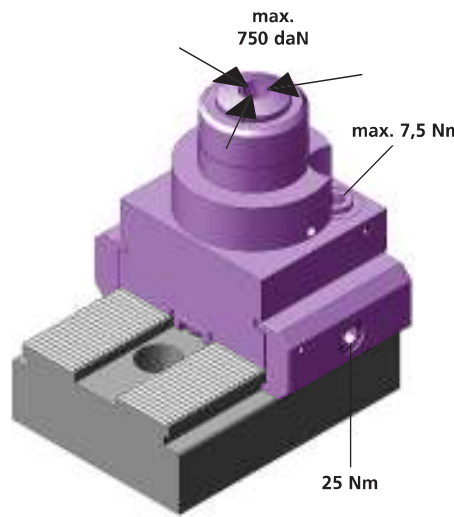
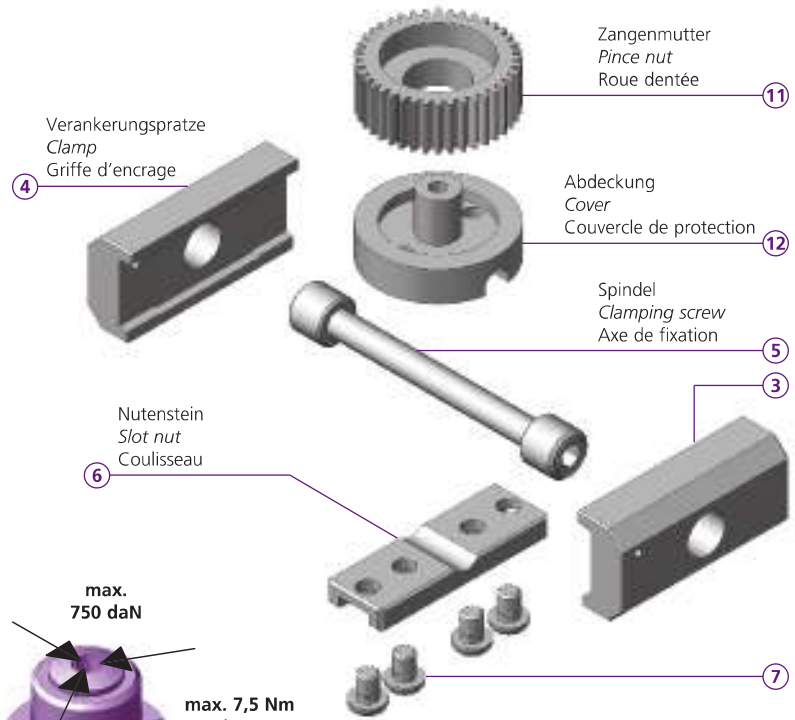
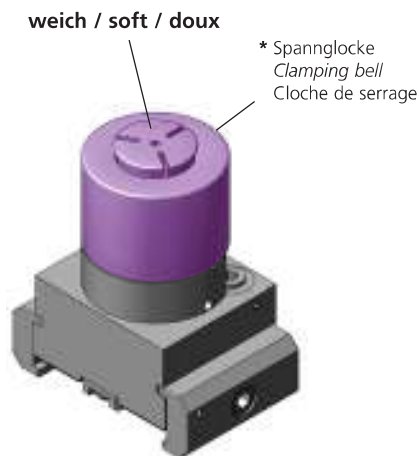
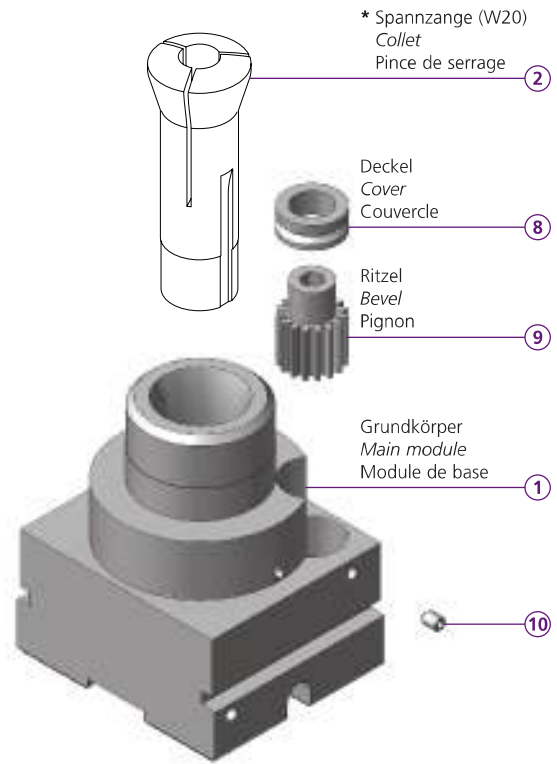
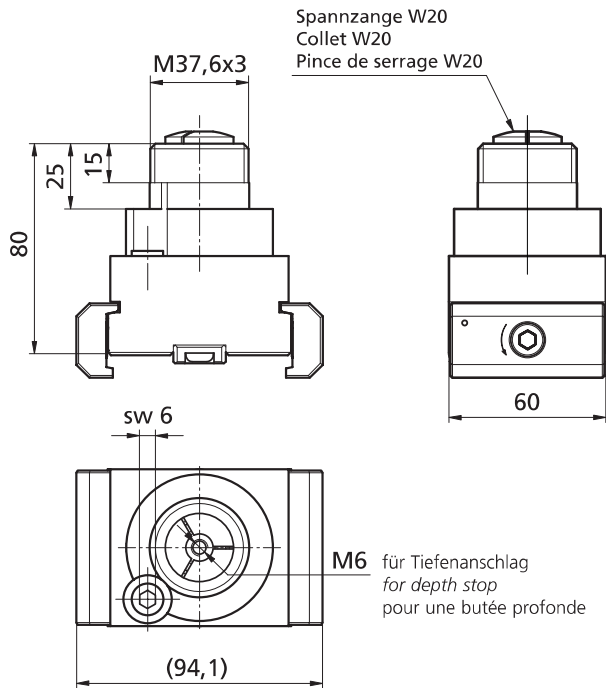


	D	J	T	R	H	P	V	a mm	b mm	c mm	d mm	e mm	max. M	max. F	ØTk	S
PS3X 80L75 BSET	80	13	75	15	42,5	10	M6	3...27	48...73	23...48	52...76	27...51	28 Nm	1300 daN	67	M6
PS3X 100L82 BSET	100	17	82	20	49,5	14	M8	3...39	58...94	24...60	64...100	30...66	38 Nm	1600 daN	83	M8
PS3X 125L87 BSET	125	19	87	32	55	16	M8	3...49	70...116	30...75	83...125	38...84	55 Nm	2600 daN	108	M8

PS3X 80L75 BSET		PS3X 100L82 BSET		PS3X 125L87 BSET	
①	1x PTX80-30	①	1x PTX100-30	①	1x PTX125-29
②	2x 3 Stk. / pcs	②	2x 3 Stk. / pcs	②	2x 3 Stk. / pcs
③	1x PCSP 60R	③	1x PCSP 60R	③	1x PCSP 60R
④	1x PCSP 60L	④	1x PCSP 60L	④	1x PCSP 60L
⑤	1x PCS 14	⑤	1x PCS 14	⑤	1x PCS 14
⑥	1x PCGU 20 59	⑥	1x PCGU 20 59	⑥	1x PCGU 20 59
⑦	1x M6x8 ISO 7380	⑦	1x M6x8 ISO 7380	⑦	1x M6x8 ISO 7380
⑧	3x M6x45 ISO 4762	⑧	3x M8x50 ISO 4762	⑧	3x M8x55 ISO 4762
⑨	1x 243809.0083220	⑨	1x 243809.0103220	⑨	1x 243809.0123220
⑩	1x 243864.0080000	⑩	1x 243864.0100000	⑩	1x 243864.0120000
kg	2,8	kg	4,2	kg	6,4

Bestellbeispiel ordering example exemple de commande: PS3X 125L87 BSET			
Ø 80	243849.0083200	243850.0083200	*243834.0083300
100	243849.0103200	243850.0103200	*243834.0103300
125	243849.0123200	243850.0123200	*243834.0123300

3x	3x	3x
Ø 3 - 49	Ø 38 - 125	weich soft 16MnCr5 doux



PS1X 68N80 -W20	
①	1x PS1X 68N80 -
②	1x * W20
③	1x PCSP 60R
④	1x PCSP 60L
⑤	1x PCS 14
⑥	1x PCGU W20
⑦	4x M6x8 ISO 7380
⑧	1x PCD 1808
⑨	1x PCRZ 1825
⑩	1x M4x6 ISO 4027
⑪	1x PCZM 4215
⑫	1x PCABD 4221
kg	1,76

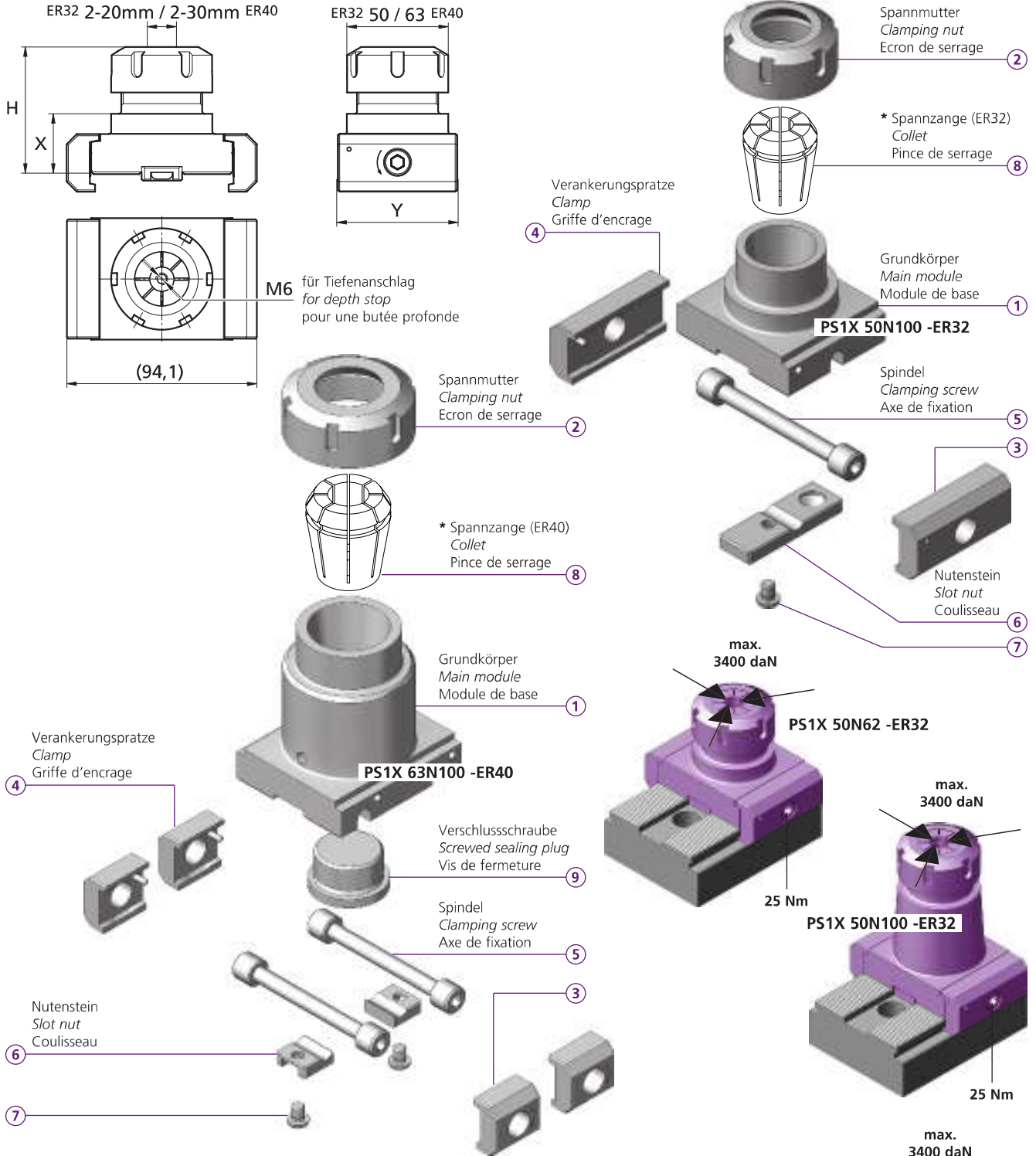
PS1X 50N100 -ER32 Ø 2 - 20

PS1X 50N62 -ER32 Ø 2 - 20

PS1X 63N100 -ER40 Ø 2 - 30



powerCLAMP



PS1X 50N62 -ER32	
①	1x PS1X 50N62 -
②	1x ER32
③	1x PCSP 60R
④	1x PCSP 60L
⑤	1x PCS 14
⑥	1x PCGU 20 59
⑦	1x M6x8 ISO 7380
⑧	1x * ER 32
H	62
X	29
Y	60
kg	1,5

PS1X 50N100 -ER32	
①	1x PS1X 50N100 -
②	1x ER32
③	1x PCSP 60R
④	1x PCSP 60L
⑤	1x PCS 14
⑥	1x PCGU 20 59
⑦	1x M6x8 ISO 7380
⑧	1x * ER 32
H	100
X	67
Y	60
kg	2,2

PS1X 63N100 -ER40	
①	1x PS1X 63N100 -
②	1x ER40
③	2x PCSP 30R
④	2x PCSP 30L
⑤	2x PCS 14
⑥	2x PCGU 20 20
⑦	2x M6x8 ISO 7380
⑧	1x * ER 40
⑨	1x BN42 - DIN 908 - M33x2
H	100
Y	80
kg	2,6

Bestellbeispiel
ordering example
exemple de commande: PS1X 50N62 -ER32

Injektorpumpe Injector pump Pompe à injection

UPB1 JN
UPB2 JN



powerCLAMP

Vacuums Spannplatte auf Power-Clamp mit Injektorpumpe für Trocken- und Nasseinsatz

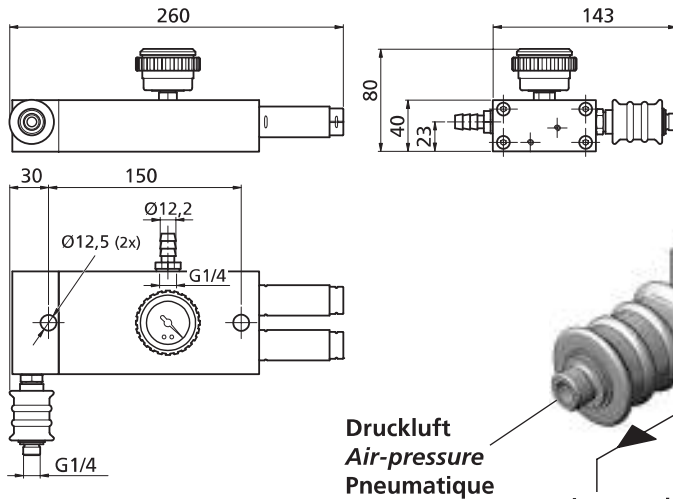
Vacuum clamping plates on Power-Clamp with injector pump for dry and wet use

Table de serrage vacuum adaptable sur Power Clamp avec pompe à injection pour insertion avec ou sans arrosage

Das modulare Triag Power Clamp Spannsystem kann nun mit Vacuumschalen bestückt werden. Die Vacuum Platten können mit oder ohne Zwischenräume gekoppelt werden. Die handliche Injektorpumpe wird mit Pressluft betrieben und kann im Trocken- oder Nasseinsatz verwendet werden

The modular Triag Power Clamp workholding system can now be equipped with vacuum plates. The vacuum plates can be coupled with or without gaps. The handy injector pump is operated with compressed air and can be used in dry and wet applications.

Le système de serrage modulaire de TRIAG Power Clamp peut seulement être équipé avec des plaques de serrage vacuum. Les plaques vacuum peuvent être couplées avec ou sans espaces. La pompe à injection maniable sera actionnée avec l'air comprimé et peut être utilisée à sec ou avec arrosage.



**Vakuumschluss (zur Spannplatte)
Vacuum adapter (to clamping plate)
Raccord pour le vide (pour le plateau de fixation)**

**Druckluft
Air-pressure
Pneumatique**

**Ein-Ausschalten
Turning on/off
Marche-arrêt**

**Abluft Ausgang
Air outlet
Evacuation de l'air**

Typ	Speisedruck	Luftverbrauch	Saugleistung bei 50% Vakuum	Saugleistung bei 90% Vakuum
Type	Feed pressure	Air consumption	Vacuum suction power at 50%	Vacuum suction power at 90%
Type	Pression d'alimentation	Consommation d'air	Capacité d'aspiration vers 50% vacuum	Capacité d'aspiration vers 90% vacuum
	bar	NI/s	NI/s	NI/s
UPB1 JN	5	2,0	0,6	0,02
	6	2,3	0,5	0,03
UPB2 JN	5	4,0	1,2	0,04
	6	4,6	1,0	0,06

Maximaler zulässiger Speisedruck: 7 bar
Maximal erreichbares Vakuum: 0,92 bar

Der Normalliter (NI) entspricht dem Volumen, das eine bestimmte Menge (Masse) Gas bei atmosphärischem Druck einnehmen würde. Die Durchflussmenge wird berechnet aus Volumen pro Zeit (NI/s) unter Normalbedingungen (atmosphärischer Druck, 20°C).

maximum allowable supply pressure: 7 bar
Maximum attainable vacuum: 0,92 bar

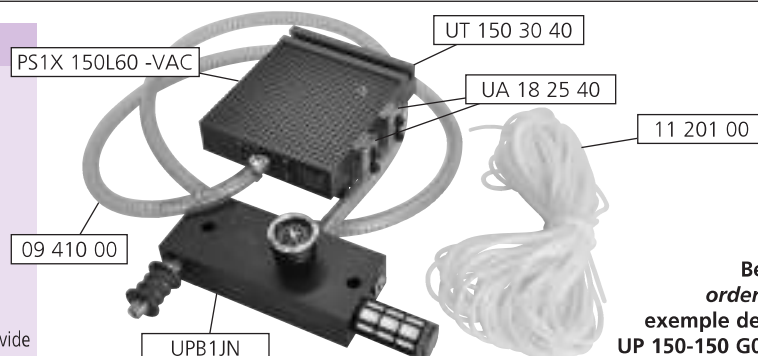
The normal litres (NI) is the volume that would take a certain amount (mass) of gas at atmospheric pressure. The flow rate is calculated as volume per time (NI/s) under normal conditions (atmospheric pressure, 20 °C).

Pression max. d'alimentation autorisée: 7 bars
Vacuum max. atteint 0,92 bar

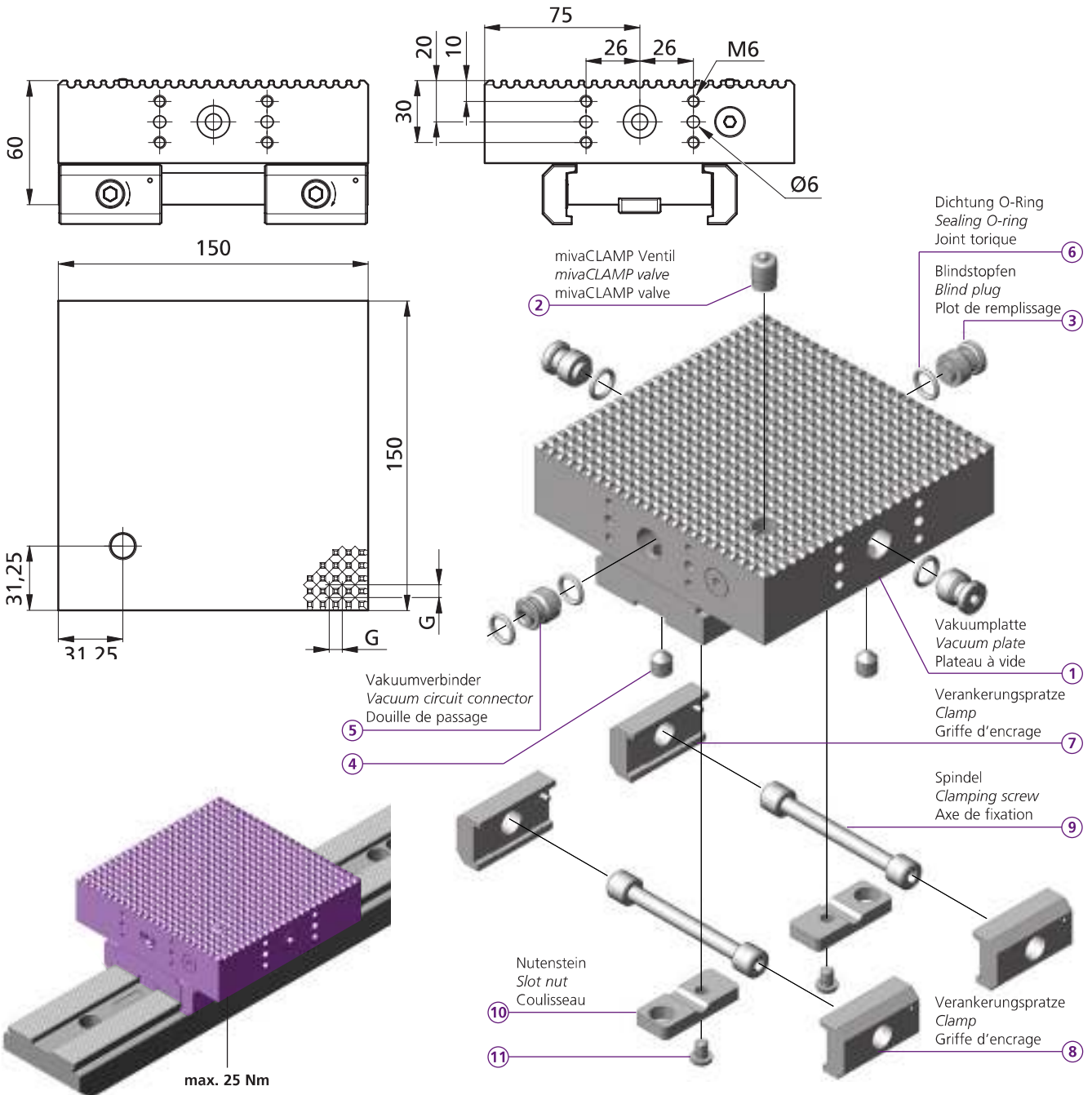
La normalité (NI) correspond au volume d'une quantité définie (Masse) de gaz par une pression atmosphérique donnée. Le coefficient de débit sera calculé en volume par temps (NI/s) sous conditions normales (pression atmosphérique, 20°C).

UP 150-150 G06 PCSET 1JN

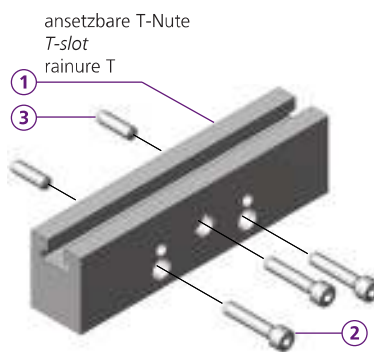
- 1x PS1X 150L60 -VAC
- 1x UT 150 30 40
- 2x UA 18 25 40
- 1x UPB1JN
- 1x 11 201 00 **Dichtschnur**
Sealing cord
Cordon d'étanchéité
- 3x 09 410 00 **(3m) Vakuumschlauch**
Vacuum hose
Tuyau d'alimentation pour le vide



**Bestellbeispiel
ordering example
exemple de commande:
UP 150-150 G06 PCSET 1JN**

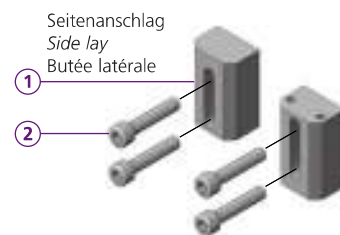


PS1X 150L60 -VAC	
①	1x PS1X 150L60 -VAC
②	1x 07 001 00
③	3x 09 200 00
④	4x ISO 4027 - M10x12
⑤	1x 09 300 00
⑥	5x 11 110 03
⑦	2x PCSP 50L
⑧	2x PCSP 50R
⑨	2x PCS 14
⑩	2x PCGU 2049
⑪	2x ISO 7380 M6x8
G	6,25mm
kg	3,6
➔ Dichtschnur 11 201 00	



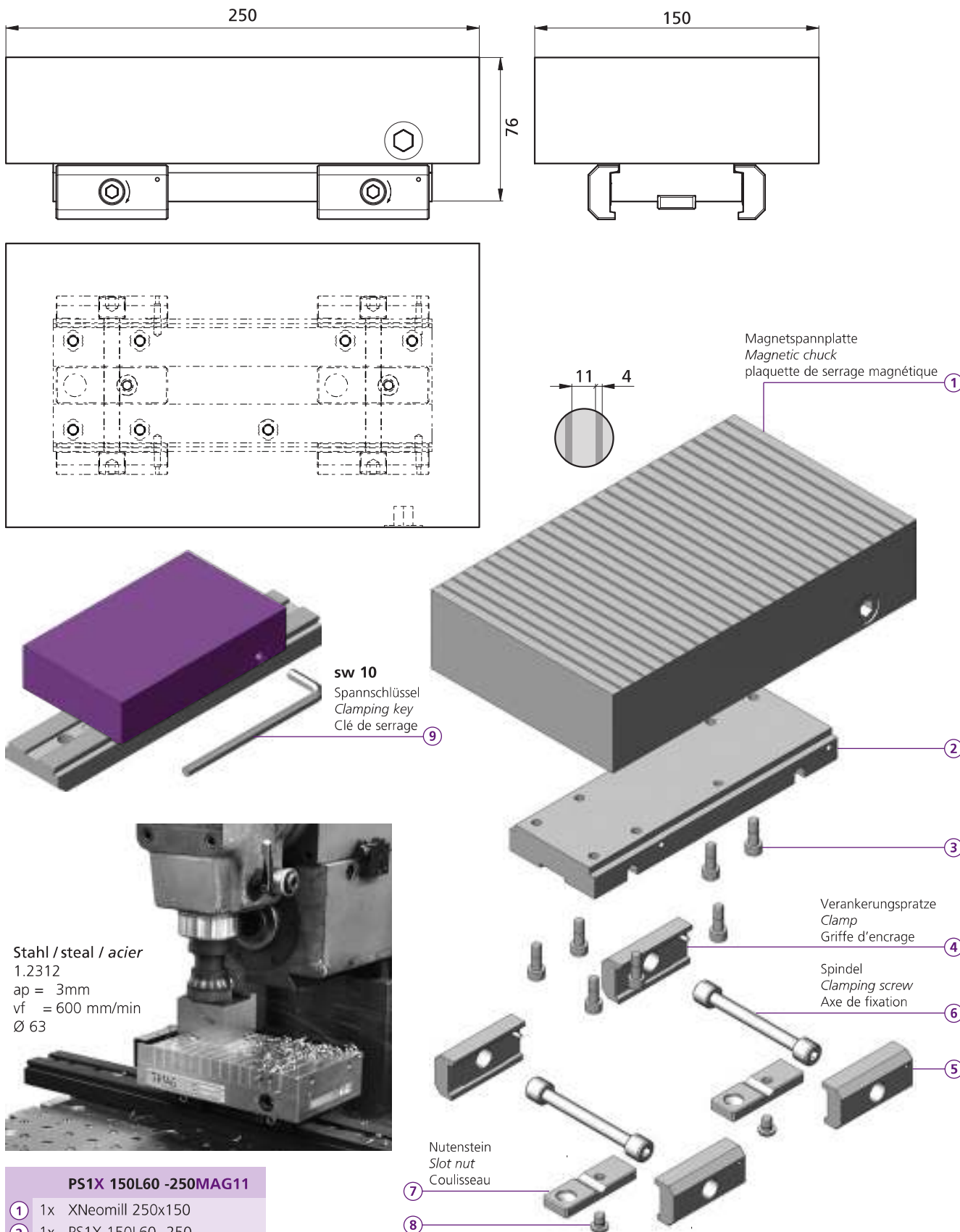
UT 150 30 40	
①	1x UT 150 30 40
②	3x ISO 4762 - M6x30
③	2x ISO 8734 - 6x20 - B
kg	0,4

Bestellbeispiel
ordering example
exemple de commande: PS1X 150L60 -VAC

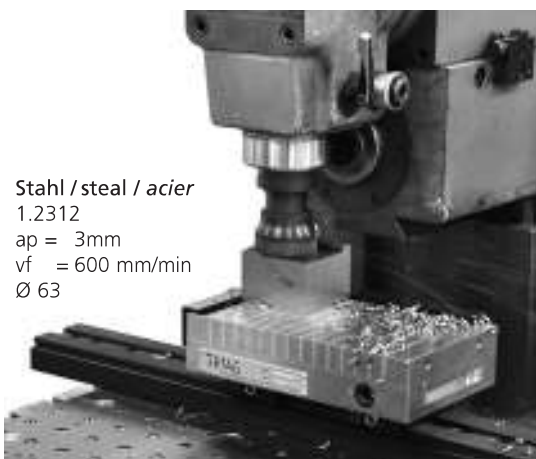


UA 18 25 40	
①	1x UA 18 25 40
②	2x ISO 4762 - M6x30
kg	0,1

Mehr Informationen siehe Vacuum (mivaCLAMP Seite 202)
 For more information check the vacuum workholding (mivaCLAMP page 202)
 Pour plus d'informations visiter le vacuum (page 202 mivaCLAMP)



Stahl / steel / acier
1.2312
ap = 3mm
vf = 600 mm/min
Ø 63



PS1X 150L60 -250MAG11

- ① 1x XNeomill 250x150
- ② 1x PS1X 150L60 -250
- ③ 7x MS60
- ④ 2x PCSP 60L
- ⑤ 2x PCSP 60R
- ⑥ 2x PCS 14
- ⑦ 2x PCGU 2049
- ⑧ 2x ISO 7380 M6x8
- ⑨ 1x ISL10 DIN 911L

kg 21

max. Haltekraft / max. holding force / force de tenue maximale = 120 N/cm²

- Werkstücke ab 26 mm Länge und 6 mm Stärke werden optimal gespannt
- Workpieces from 26 mm length and 6mm thickness will be optimally hold
- Pièces à usiner de 26 mm de longueur et 6 mm d'épaisseur sont serrées optimales

Bestellbeispiel / ordering example / exemple de commande: PS1X 150L60 -250MAG11

Schnellwechsel Spannbacken-Rohling

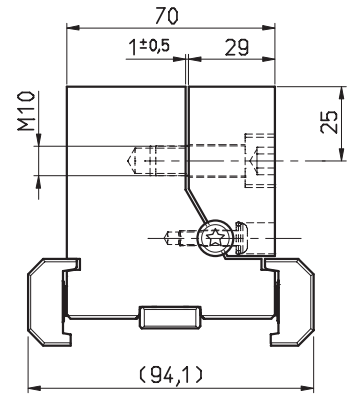
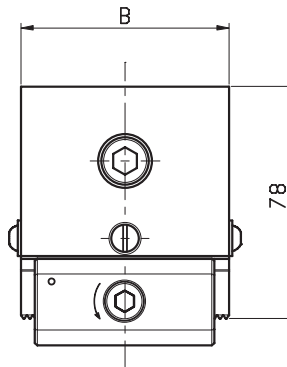
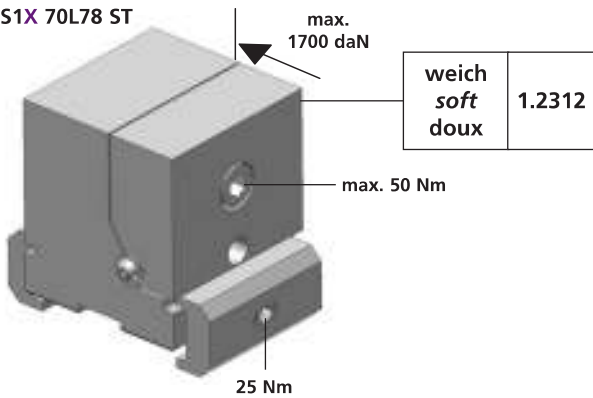
Quick change-jaw blank

Mors de serrage ébauche changement rapide

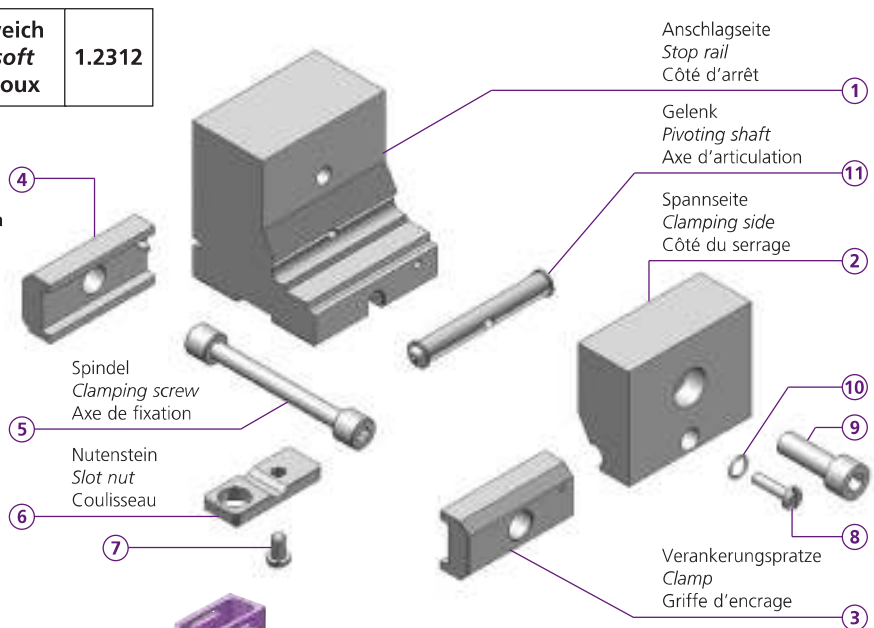
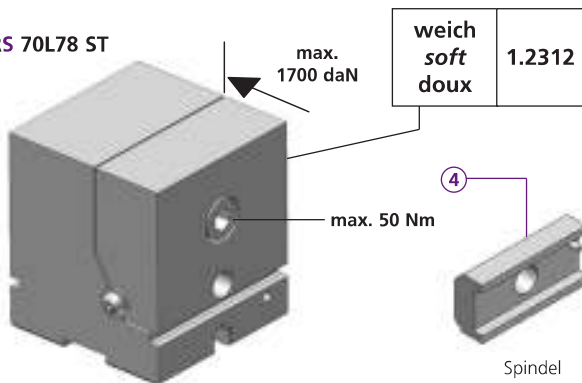
powerCLAMP



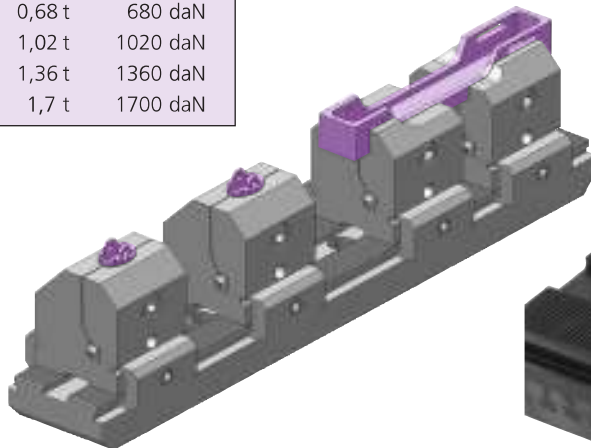
PS1X 70L78 ST



PRS 70L78 ST



Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
10 Nm =	0,34 t 340 daN
20 Nm =	0,68 t 680 daN
30 Nm =	1,02 t 1020 daN
40 Nm =	1,36 t 1360 daN
50 Nm =	1,7 t 1700 daN



Bestellbeispiel / ordering example / exemple de commande: PS1X 70L78 ST

PS1X 70L78 ST	
1	1x PRS 7078 A ST
2	1x PRS 7078 S ST
3	1x PCSP 60R
4	1x PCSP 60L
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
8	1x M5x20 BN 1362
9	1x M10x30 ISO 4762
10	1x OR Ø 8x1,5
11	1x PRS 7078 G
B	70
kg	3,1

PS1X 50L78 ST	
1	1x PRS 5078 A ST
2	1x PRS 5078 S ST
3	1x PCSP 50R
4	1x PCSP 50L
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
8	1x M5x20 BN 1362
9	1x M10x30 ISO 4762
10	1x OR Ø 8x1,5
11	1x PRS 5078 G
B	50
kg	2,3

PRS 70L78 ST	
1	1x PRS 7078 A ST
2	1x PRS 7078 S ST
8	1x M5x20 BN 1362
9	1x M10x30 ISO 4762
10	1x OR Ø 8x1,5
11	1x PRS 7078 G
B	70
kg	2,8

PRS 50L78 ST	
1	1x PRS 5078 A ST
2	1x PRS 5078 S ST
8	1x M5x20 BN 1362
9	1x M10x30 ISO 4762
10	1x OR Ø 8x1,5
11	1x PRS 5078 G
B	50
kg	2,0

Spannbacken Rohling auf Kundenwunsch angepasst
Jaw blank machined to customer specification
Ebauches mors de serrage adaptés sur demande du client

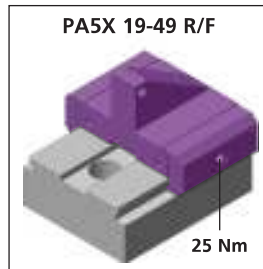
Anschlagmodule PAND 19-49
End module PAND 26-49
Module d'appui PAND 34-49

PA5X 19-49 R/F
PA5X 26-49 R/F
PA5X 34-49 R/F

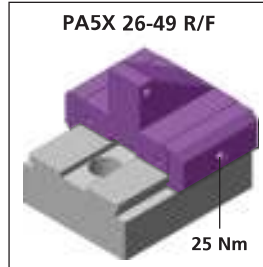
powerCLAMP



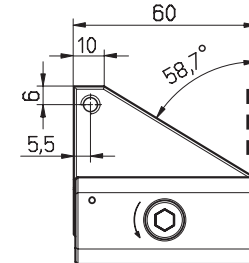
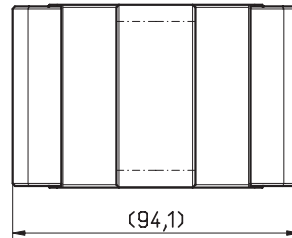
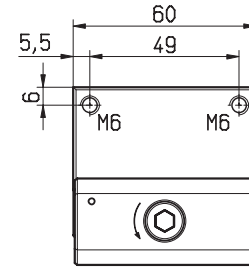
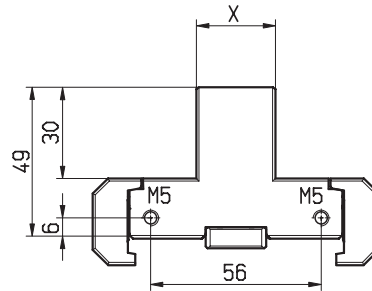
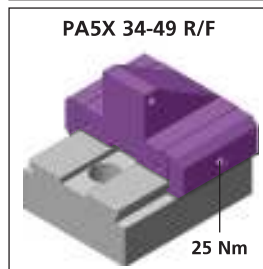
PAND 19-49-



PAND 26-49-

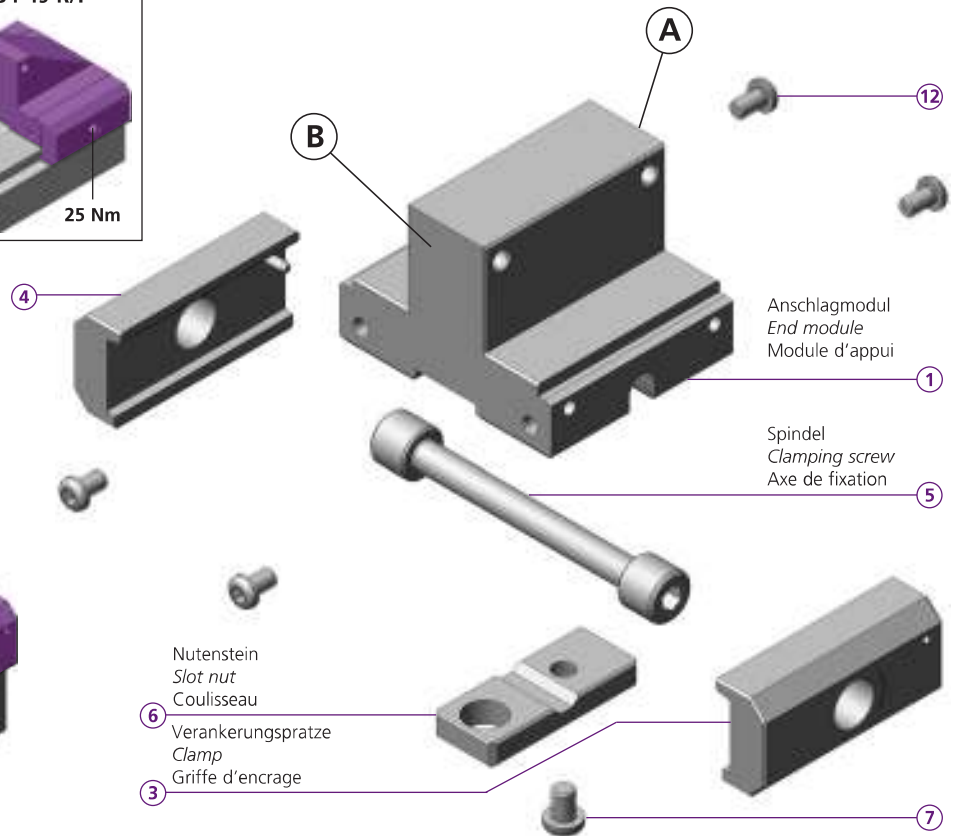
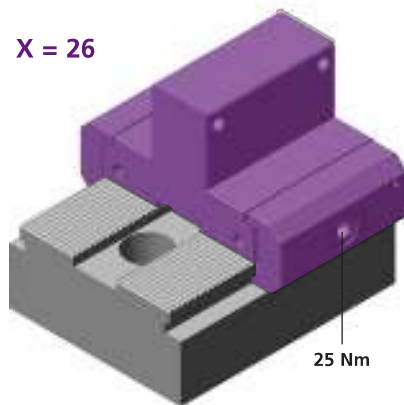


PAND 34-49-



PA5X 19N49 R/F
 PA5X 26N49 R/F
 PA5X 34N49 R/F

X = 26



Bestellbeispiel / ordering example / exemple de commande: PAND 19-49

	A	B
	PA5X 19-49 R/F	
	PAND 19-49	
1	1x PAND 19-49-	
3	1x PCSP 60R	
4	1x PCSP 60L	
5	1x PCS 14	
6	1x PCGU 20 49	
7	1x M6x8 ISO 7380	
12	4x M5x10 ISO 4762	
X	19	
kg	1,1	

	A	B
	PA5X 26-49 R/F	
	PAND 26-49	
1	1x PAND 26-49-	
3	1x PCSP 60R	
4	1x PCSP 60L	
5	1x PCS 14	
6	1x PCGU 20 49	
7	1x M6x8 ISO 7380	
12	4x M5x10 ISO 4762	
X	26	
kg	1,2	

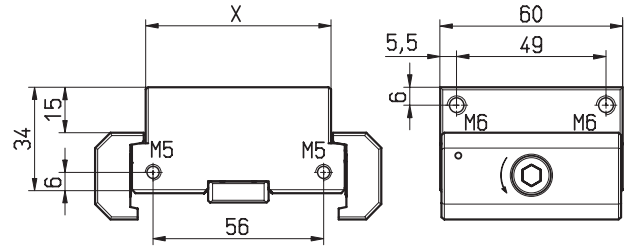
	A	B
	PA5X 34-49 R/F	
	PAND 34-49	
1	1x PAND 34-49-	
3	1x PCSP 60R	
4	1x PCSP 60L	
5	1x PCS 14	
6	1x PCGU 20 49	
7	1x M6x8 ISO 7380	
12	4x M5x10 ISO 4762	
X	34	
kg	1,3	

PAND 48-34
PAND 58-34
PAND 61-34

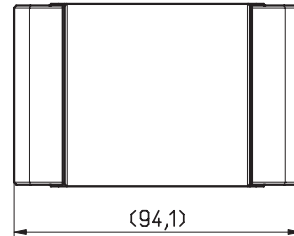


powerCLAMP

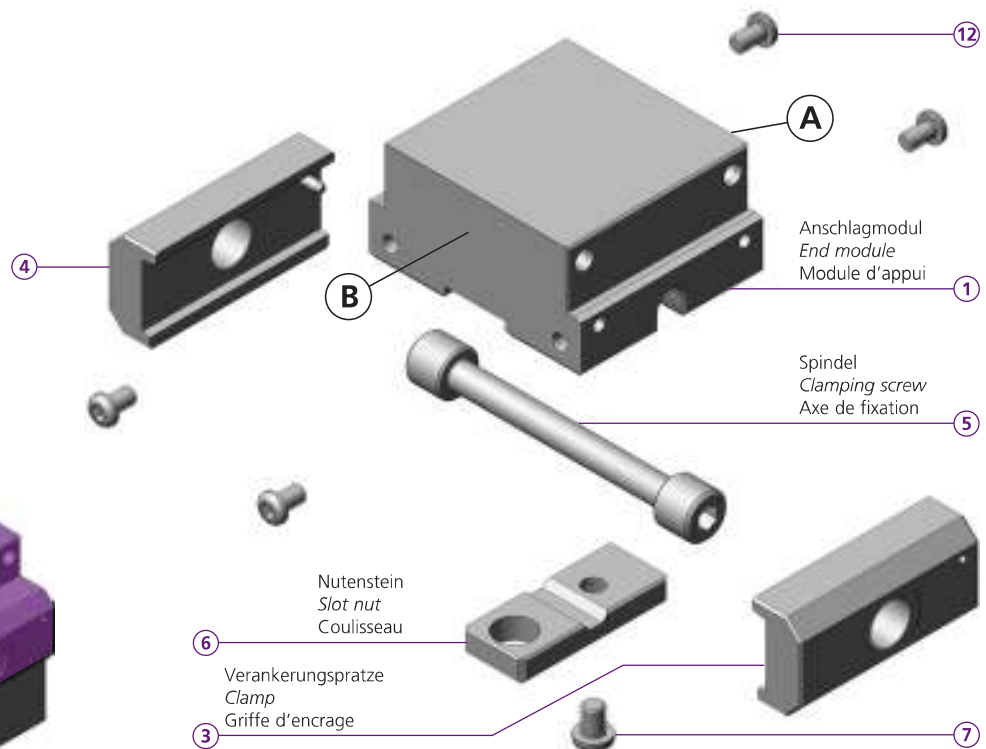
PAND 48-34-



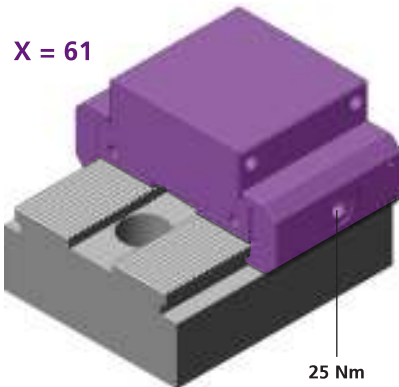
PAND 58-34-



PAND 61-34-



X = 61



Bestellbeispiel / ordering example / exemple de commande: PAND 61-34

	A	B
PAND 48-34		
①	1x	PAND 48-34-
③	1x	PCSP 60R
④	1x	PCSP 60L
⑤	1x	PCS 14
⑥	1x	PCGU 20 49
⑦	1x	M6x8 ISO 7380
⑫	4x	M5x10 ISO 4762
X		48
kg		1,3

	A	B
PAND 58-34		
①	1x	PAND 58-34-
③	1x	PCSP 60R
④	1x	PCSP 60L
⑤	1x	PCS 14
⑥	1x	PCGU 20 49
⑦	1x	M6x8 ISO 7380
⑫	4x	M5x10 ISO 4762
X		58
kg		1,4

	A	B
PAND 61-34		
①	1x	PAND 61-34-
③	1x	PCSP 60R
④	1x	PCSP 60L
⑤	1x	PCS 14
⑥	1x	PCGU 20 49
⑦	1x	M6x8 ISO 7380
⑫	4x	M5x10 ISO 4762
X		61
kg		1,4

PAND 68-34

PAND 78-34

PAND 94-34

PAND 78-49



powerCLAMP

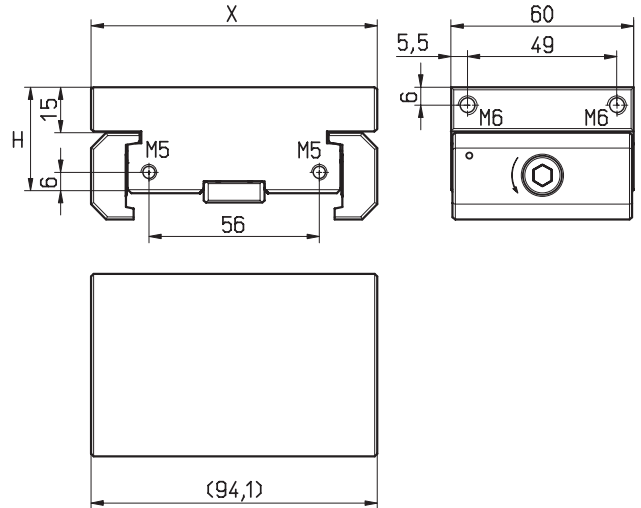
PAND 68-34-



PAND 78-49-



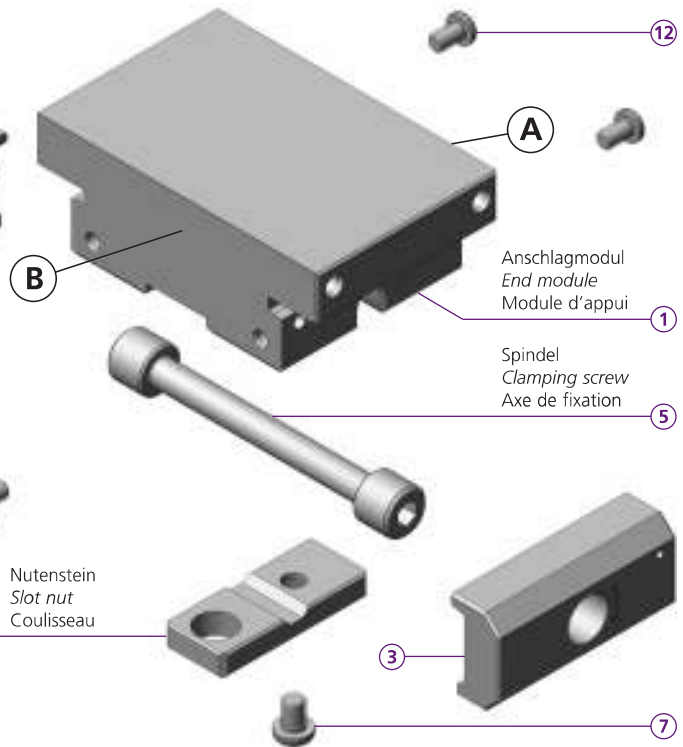
PAND 78-34-



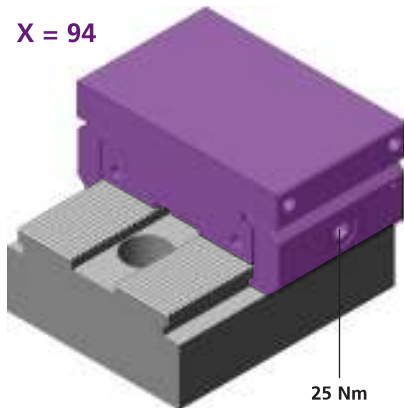
PAND 94-34-



Verankerungspratze
Clamp
Griffe d'encrage



X = 94



25 Nm

Bestellbeispiel / ordering example / exemple de commande: PAND 94-34

	A	B
PAND 68-34		
①	1x PAND 68-34-	
③	1x PCSP 60R	
④	1x PCSP 60L	
⑤	1x PCS 14	
⑥	1x PCGU 20 49	
⑦	1x M6x8 ISO 7380	
⑫	4x M5x10 ISO 4762	
X	68	
H	34	
kg	1,4	

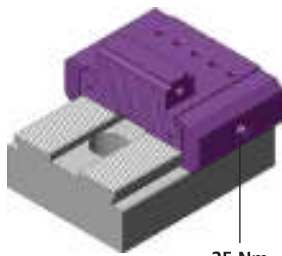
	A	B
PAND 78-34		
①	1x PAND 78-34-	
③	1x PCSP 60R	
④	1x PCSP 60L	
⑤	1x PCS 14	
⑥	1x PCGU 20 49	
⑦	1x M6x8 ISO 7380	
⑫	4x M5x10 ISO 4762	
X	78	
H	34	
kg	1,5	

	A	B
PAND 78-49		
①	1x PAND 78-49-	
③	1x PCSP 60R	
④	1x PCSP 60L	
⑤	1x PCS 14	
⑥	1x PCGU 20 49	
⑦	1x M6x8 ISO 7380	
⑫	4x M5x10 ISO 4762	
X	78	
H	49	
kg	2,0	

	A	B
PAND 94-34		
①	1x PAND 94-34-	
③	1x PCSP 60R	
④	1x PCSP 60L	
⑤	1x PCS 14	
⑥	1x PCGU 20 49	
⑦	1x M6x8 ISO 7380	
⑫	4x M5x10 ISO 4762	
X	94	
H	34	
kg	1,6	

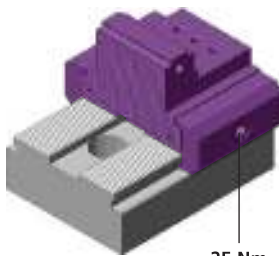


PAND 48-34- PRG



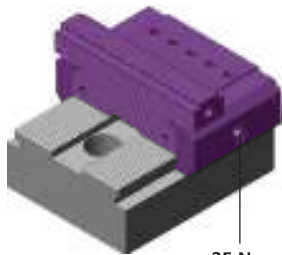
25 Nm

PAND 48-49- PRG



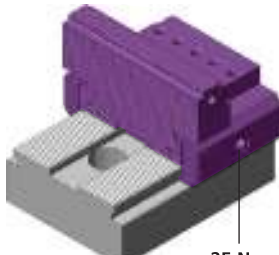
25 Nm

PAND 94-34- PRG

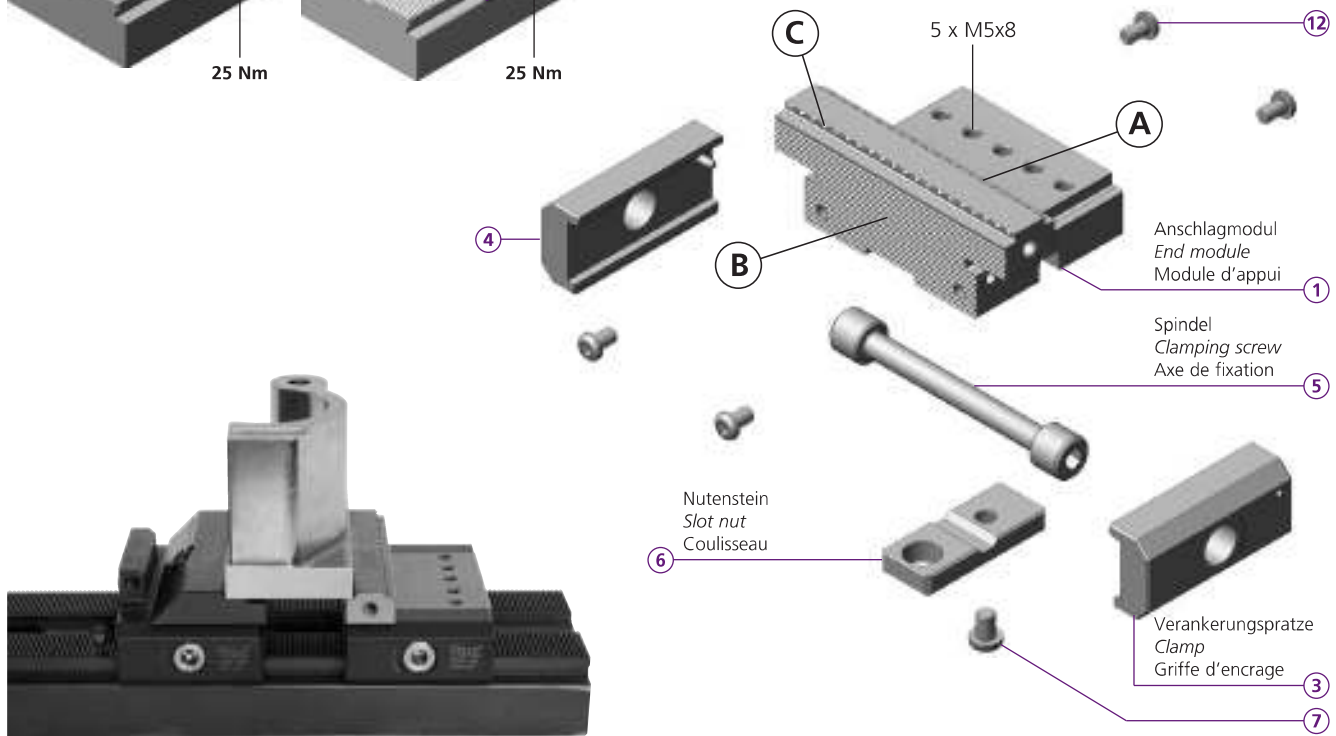
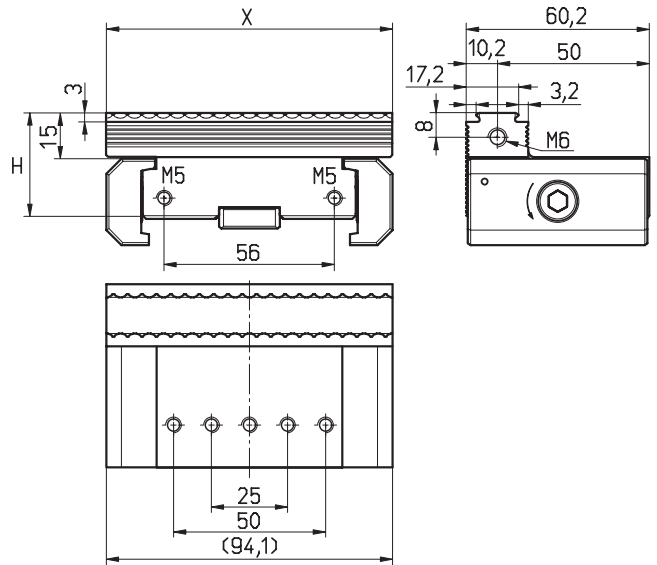


25 Nm

PAND 94-49- PRG



25 Nm



Bestellbeispiel / ordering example / exemple de commande: PAND 94-34 PRG

	A	B	C
PAND 48-34 PRG			
1	1x PAND 48-34 PRG		
3	1x PCSP 60R		
4	1x PCSP 60L		
5	1x PCS 14		
6	1x PCGU 20 49		
7	1x M6x8 ISO 7380		
12	4x M5x10 ISO 4762		
X	48		
H	34		
kg	1,1		

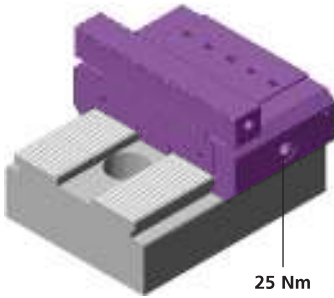
	A	B	C
PAND 48-49 PRG			
1	1x PAND 48-49 PRG		
3	1x PCSP 60R		
4	1x PCSP 60L		
5	1x PCS 14		
6	1x PCGU 20 49		
7	1x M6x8 ISO 7380		
12	4x M5x10 ISO 4762		
X	48		
H	49		
kg	1,1		

	A	B	C
PAND 94-34 PRG			
1	1x PAND 94-34 PRG		
3	1x PCSP 60R		
4	1x PCSP 60L		
5	1x PCS 14		
6	1x PCGU 20 49		
7	1x M6x8 ISO 7380		
12	4x M5x10 ISO 4762		
X	94		
H	34		
kg	1,1		

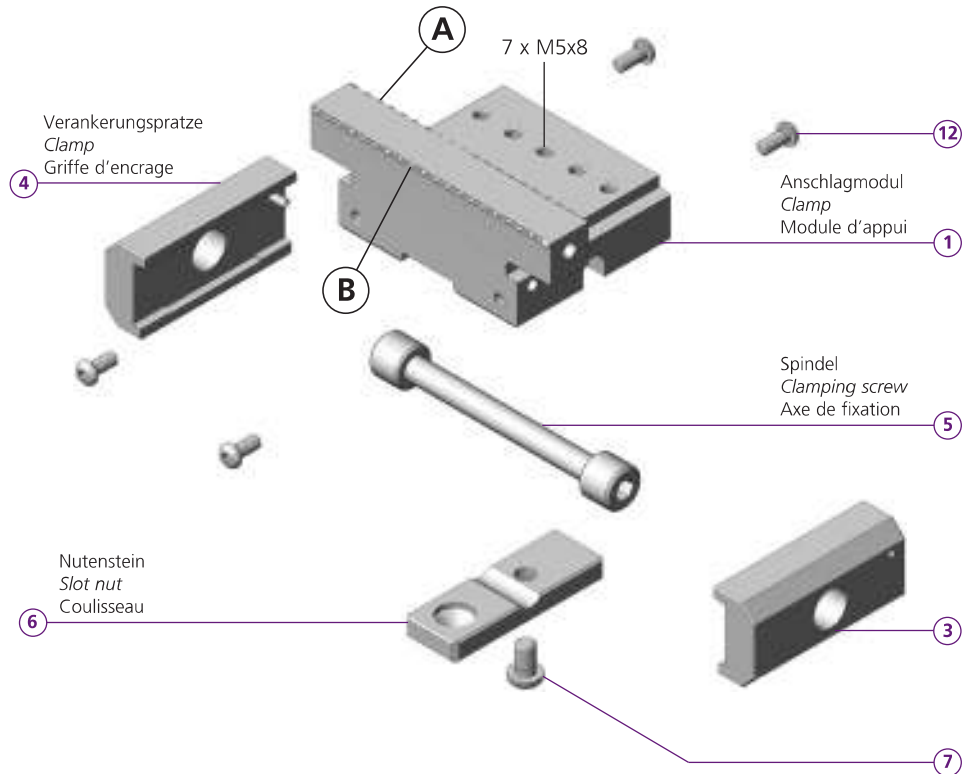
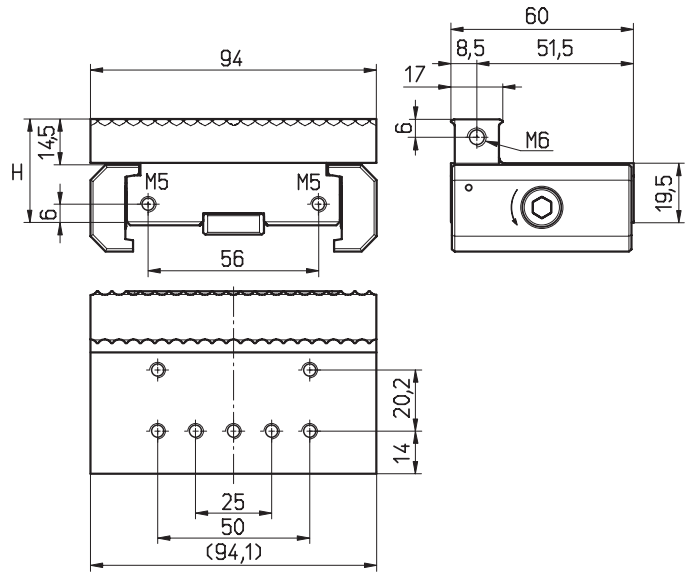
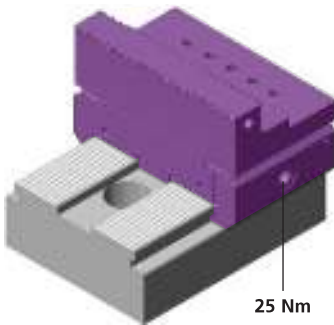
	A	B	C
PAND 94-49 PRG			
1	1x PAND 94-49 PRG		
3	1x PCSP 60R		
4	1x PCSP 60L		
5	1x PCS 14		
6	1x PCGU 20 49		
7	1x M6x8 ISO 7380		
12	4x M5x10 ISO 4762		
X	94		
H	49		
kg	1,1		



H = 34



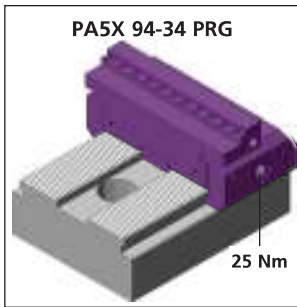
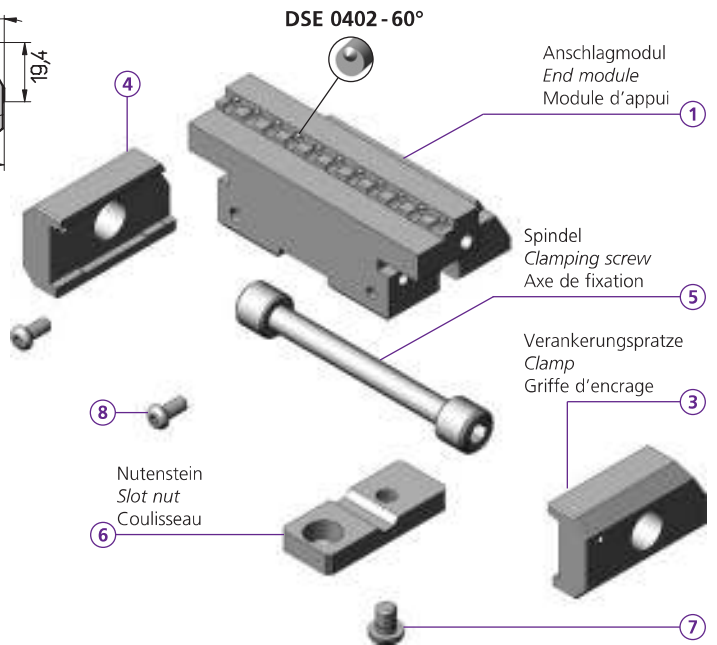
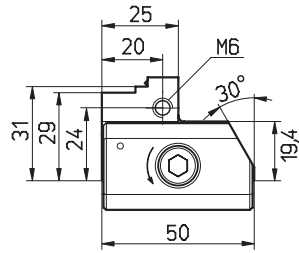
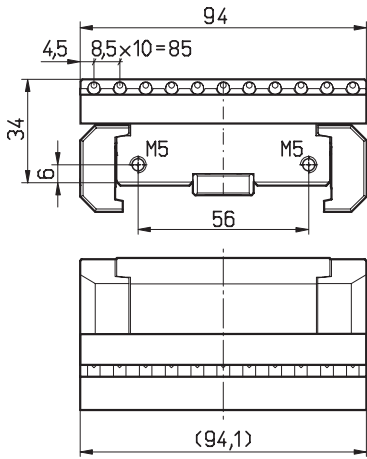
H = 49



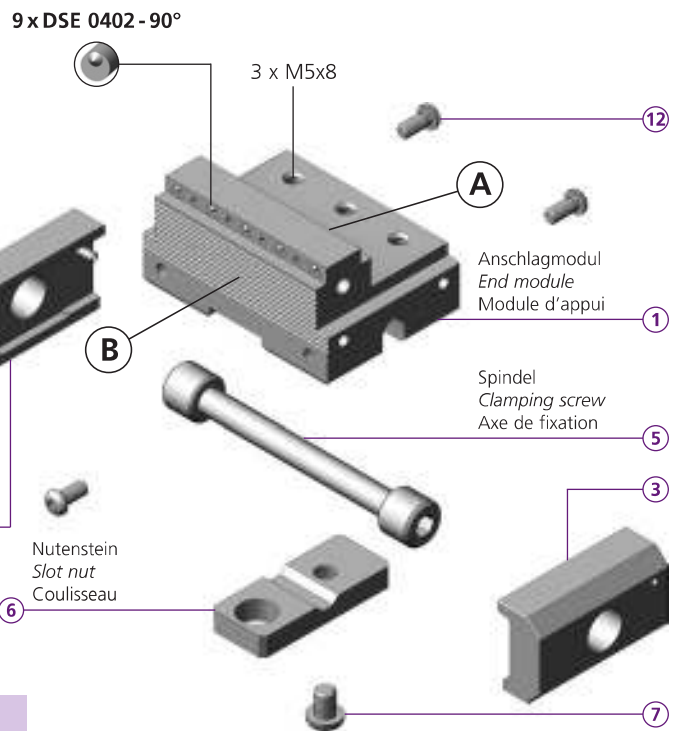
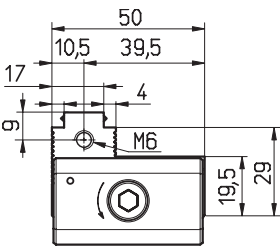
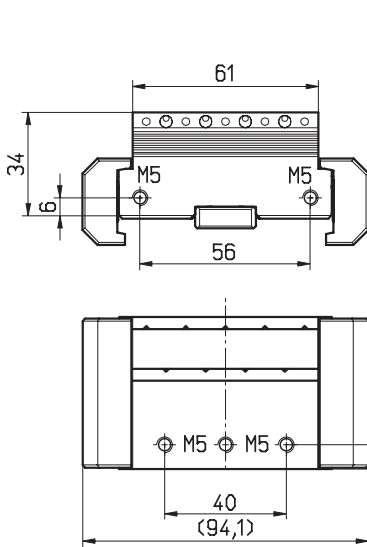
Bestellbeispiel / ordering example / exemple de commande: **PAND 94-34 PRGV**

	(A)	(B)
PAND 94-34 PRGV		
(1)	1x	PAND 94-34 PRGV
(3)	1x	PCSP 60R
(4)	1x	PCSP 60L
(5)	1x	PCS 14
(6)	1x	PCGU 20 59
(7)	1x	M6x8 ISO 7380
(12)	4x	M5x10 ISO 4762
(H)		34
kg		1,08

	(A)	(B)
PAND 94-49 PRGV		
(1)	1x	PAND 94-49 PRGV
(3)	1x	PCSP 60R
(4)	1x	PCSP 60L
(5)	1x	PCS 14
(6)	1x	PCGU 20 59
(7)	1x	M6x8 ISO 7380
(12)	4x	M5x10 ISO 4762
(H)		49
kg		1,6

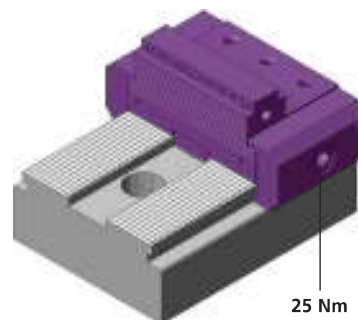


Bestellbeispiel / ordering example / exemple de commande: PANX 61-34 PRG



PANX 61-34 PRG	
1	1x PANX 61-34 PRG
3	1x PCSP 50R
4	1x PCSP 50L
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
12	4x M5x10 ISO 4762
kg	0,9

PA5X 94-34 PRG	
1	1x PA5X 94-34 PRG
3	1x PCSP 50R F
4	1x PCSP 50L F
5	1x PCS 14
6	1x PCGU 20 49
7	1x M6x8 ISO 7380
8	2x M5x10 ISO 4762
kg	0,93



Bestellbeispiel
ordering example
exemple de commande: PANX 61-34 PRG

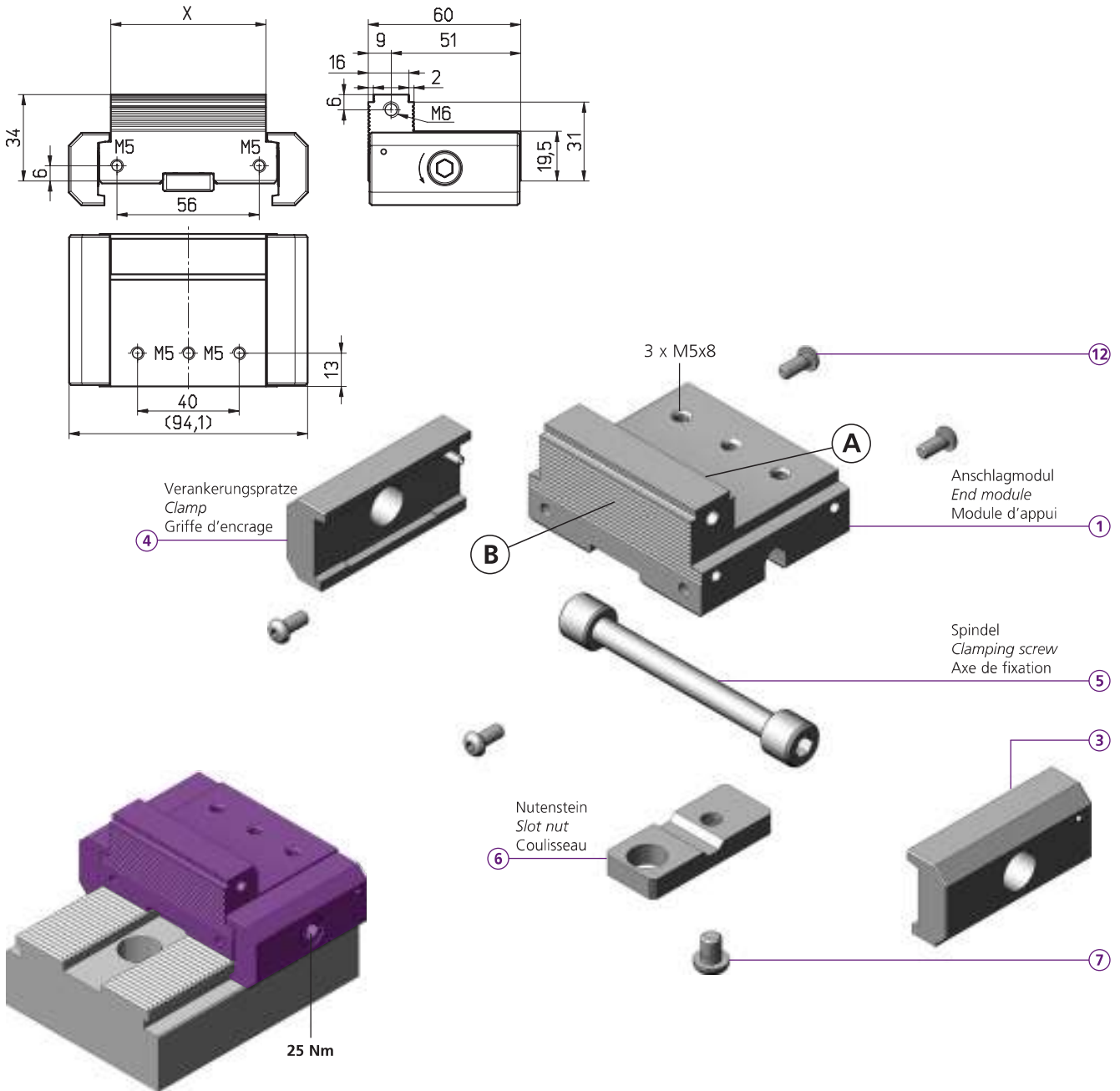
PANG 48-34

PANG 61-34

PANG 94-34



powerCLAMP



Bestellbeispiel / ordering example / exemple de commande: PANG 48-34

PANG 48-34	
①	1x PANG 48-34
③	1x PCSP 60R
④	1x PCSP 60L
⑤	1x PCS 14
⑥	1x PCGU 20 49
⑦	1x M6x8 ISO 7380
⑫	4x M5x10 ISO 4762
X	48
kg	0,6

PANG 61-34	
①	1x PANG 61-34
③	1x PCSP 60R
④	1x PCSP 60L
⑤	1x PCS 14
⑥	1x PCGU 20 49
⑦	1x M6x8 ISO 7380
⑫	4x M5x10 ISO 4762
X	61
kg	0,6

PANG 94-34	
①	1x PANG 94-34
③	1x PCSP 60R
④	1x PCSP 60L
⑤	1x PCS 14
⑥	1x PCGU 20 49
⑦	1x M6x8 ISO 7380
⑫	4x M5x10 ISO 4762
X	94
kg	0,7

PAND 43-49

PAND 48-49

PAND 94-49

PA5X 125-49 PA5X 94-49 R/F

PA5X 43-49 R/F/PA5X 125-49 R/F

PA5X 48-49 R/F

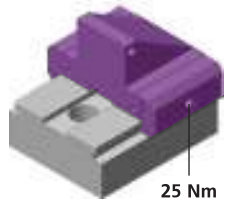


powerCLAMP

PAND 43-49-



PA5X 43-49 R/F

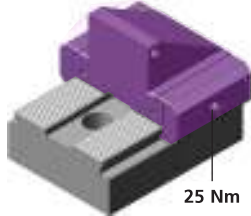


25 Nm

PAND 48-49-



PA5X 48-49 R/F

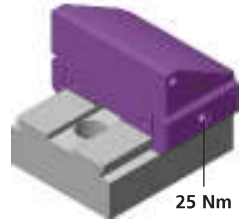


25 Nm

PAND 94-49-



PA5X 94-49 R/F

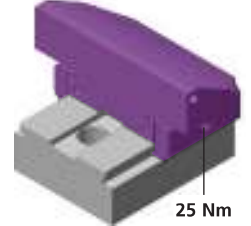


25 Nm

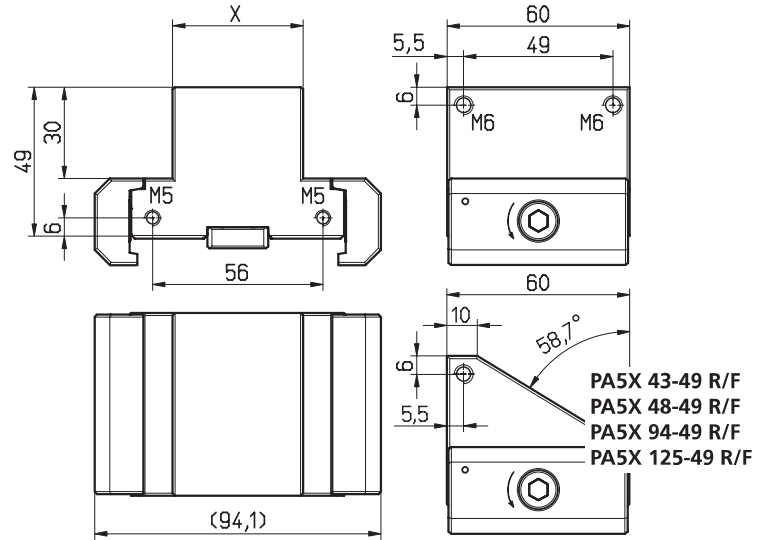
PAND 125-49-



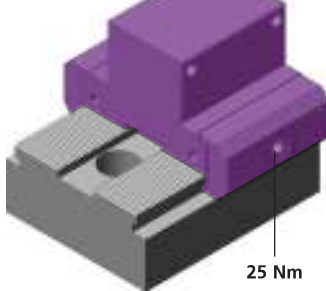
PA5X 125-49 R/F



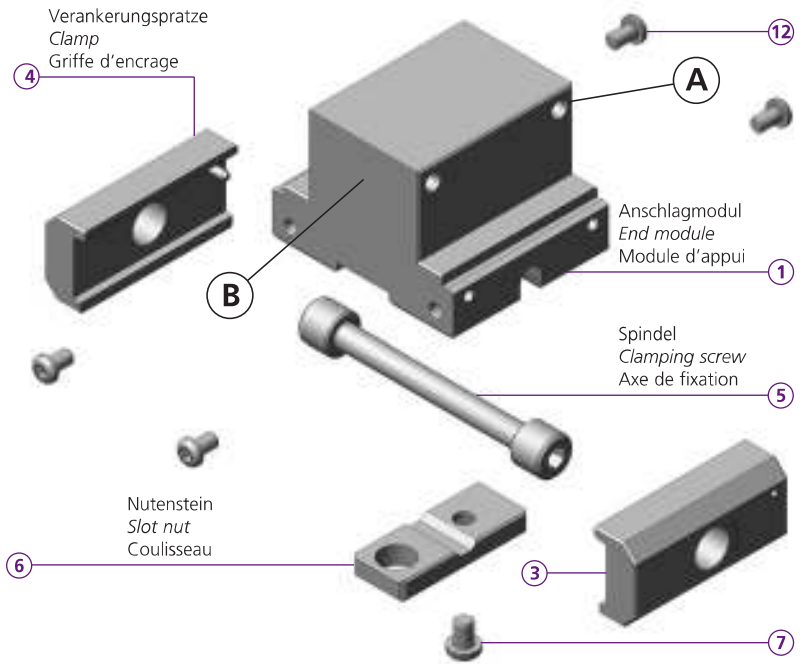
25 Nm



X = 43



25 Nm



Bestellbeispiel / ordering example / exemple de commande: PAND 43-49

PA5X 43-49 R/F		PAND 43-49	
1	1x PAND 43-49-	A	B
3	1x PCSP 60R		
4	1x PCSP 60L		
5	1x PCS 14		
6	1x PCGU 20 49		
7	1x M6x8 ISO 7380		
12	4x M5x10 ISO 4762		
X	43		
kg	1,5		

PA5X 48-49 R/F		PAND 48-49	
1	1x PAND 48-49-	A	B
2			
3	1x PCSP 60R		
4	1x PCSP 60L		
5	1x PCS 14		
6	1x PCGU 20 49		
7	1x M6x8 ISO 7380		
12	4x M5x10 ISO 4762		
X	48		
kg	1,6		

PA5X 94-49 R/F		PAND 94-49	
1	1x PAND 94-49-	A	B
3	1x PCSP 60R		
4	1x PCSP 60L		
5	1x PCS 14		
6	1x PCGU 20 49		
7	1x M6x8 ISO 7380		
12	4x M5x10 ISO 4762		
X	94		
kg	2,0		

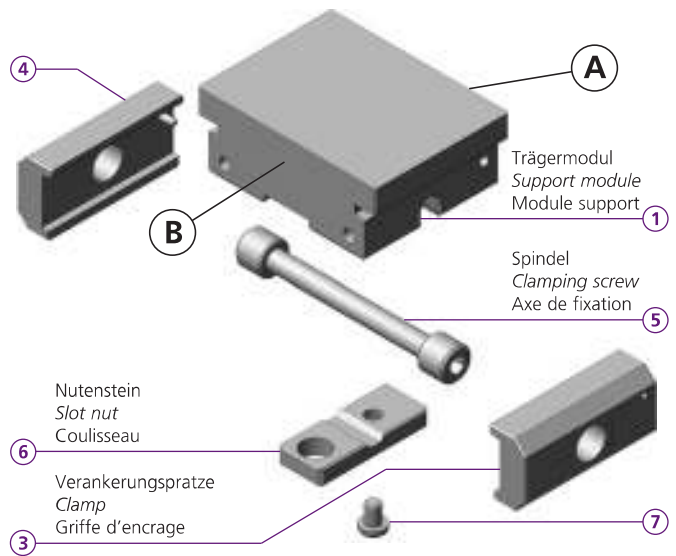
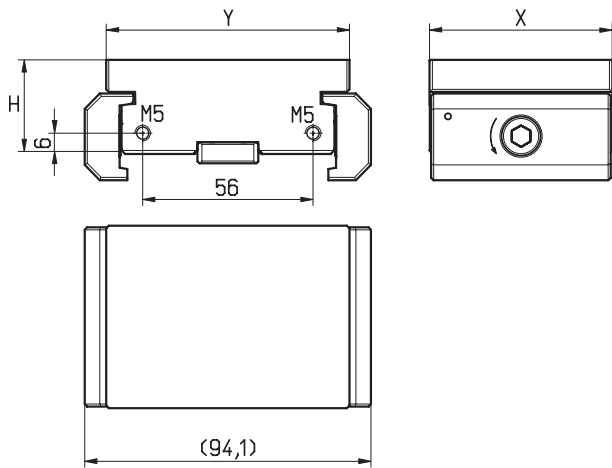
PA5X 125-49 R/F		PAND 125-49	
1	1x PAND 125-49-	A	B
3	1x PCSP 60R		
4	1x PCSP 60L		
5	1x PCS 14		
6	1x PCGU 20 49		
7	1x M6x8 ISO 7380		
12	4x M5x10 ISO 4762		
X	125		
kg	2,7		

Trägermodul
Supporting module
Module support

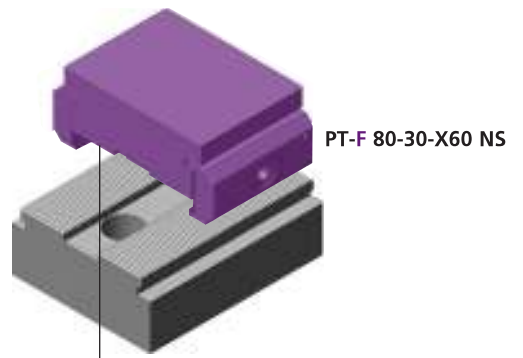
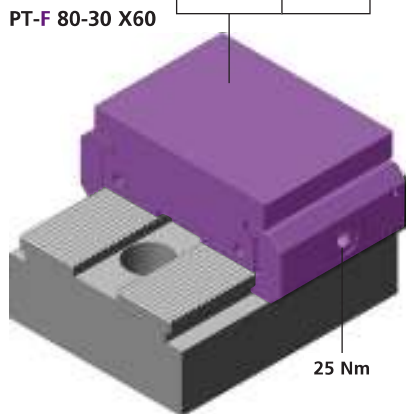
PT-F 80-30 X60
PT-F 80-30 X30 NS
PT-F 80-30 X60 NS



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weich
soft
doux **1.2312**



NS = Trägermodul freie Positionierung ohne Verzahnung
Carrier module without positioning serration for free positioning
Support de module sans denture pour positionnement libre

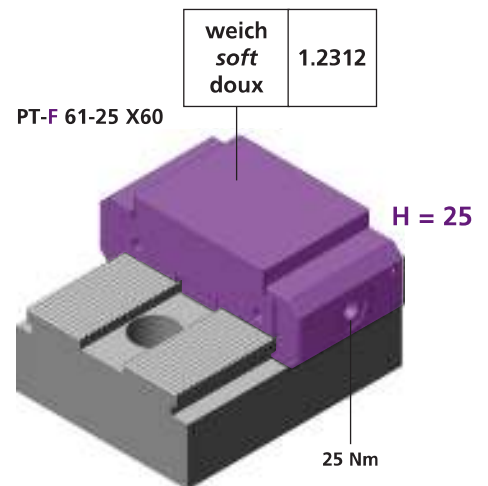
	A	B
PT-F 80-30 X30 NS		
①	1x	PT-F 80-30-30 NS
③	1x	PCSP 30R
④	1x	PCSP 30L
⑤	1x	PCS 14
⑥	1x	PCGU 20 30
⑦	1x	M6x8 ISO 7380
X		30
H		30
kg		0,5

	A	B
PT-F 80-30 X60		
PT-F 80-30 X60 NS		
①	1x	PT-F 80-30-60 (NS)
③	1x	PCSP 60R
④	1x	PCSP 60L
⑤	1x	PCS 14
⑥	1x	PCGU 20 49
⑦	1x	M6x8 ISO 7380
X		60
H		30
kg		1,3

	A	B
PT-F 61-25 X30		
①	1x	PT-F 61-25-30
③	1x	PCSP 30R
④	1x	PCSP 30L
⑤	1x	PCS 14
⑥	1x	PCGU 20 30
⑦	1x	M6x8 ISO 7380
X		30
H		25
kg		0,6

	A	B
PT-F 61-25 X50		
①	1x	PT-F 61-25-50
③	1x	PCSP 50R
④	1x	PCSP 50L
⑤	1x	PCS 14
⑥	1x	PCGU 20 49
⑦	1x	M6x8 ISO 7380
X		50
H		25
kg		1,0

	A	B
PT-F 61-25 X60		
①	1x	PT-F 61-25-60
③	1x	PCSP 60R
④	1x	PCSP 60L
⑤	1x	PCS 14
⑥	1x	PCGU 20 49
⑦	1x	M6x8 ISO 7380
X		60
H		25
kg		1,1



Bestellbeispiel
ordering example
exemple de commande: PT-F 80-30 X60

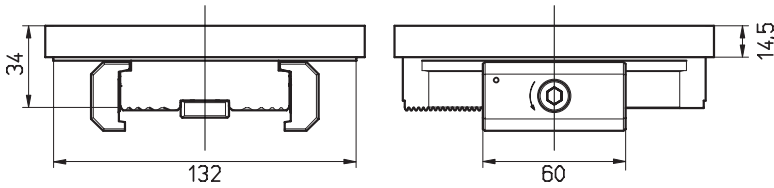
Trägermodul rund

Supporting module round

Module support rond



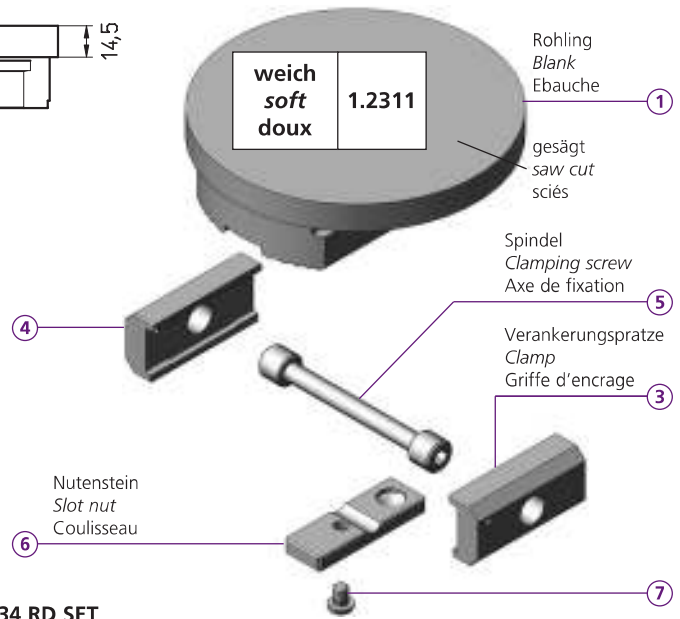
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PT-F 132-34 RD SET

①	1x	PT-F 132-34 RD
③	1x	PCSP 60R
④	1x	PCSP 60L
⑤	1x	PCS 14
⑥	1x	PCGU 20 59
⑦	1x	M6x8 ISO 7380
kg		3,1

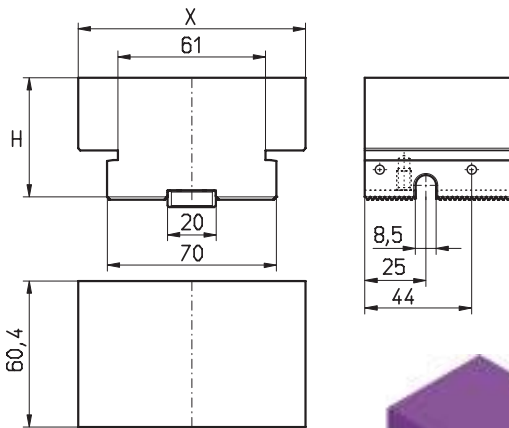
Bestellbeispiel
ordering example
exemple de commande: PT-F 132-34 RD SET



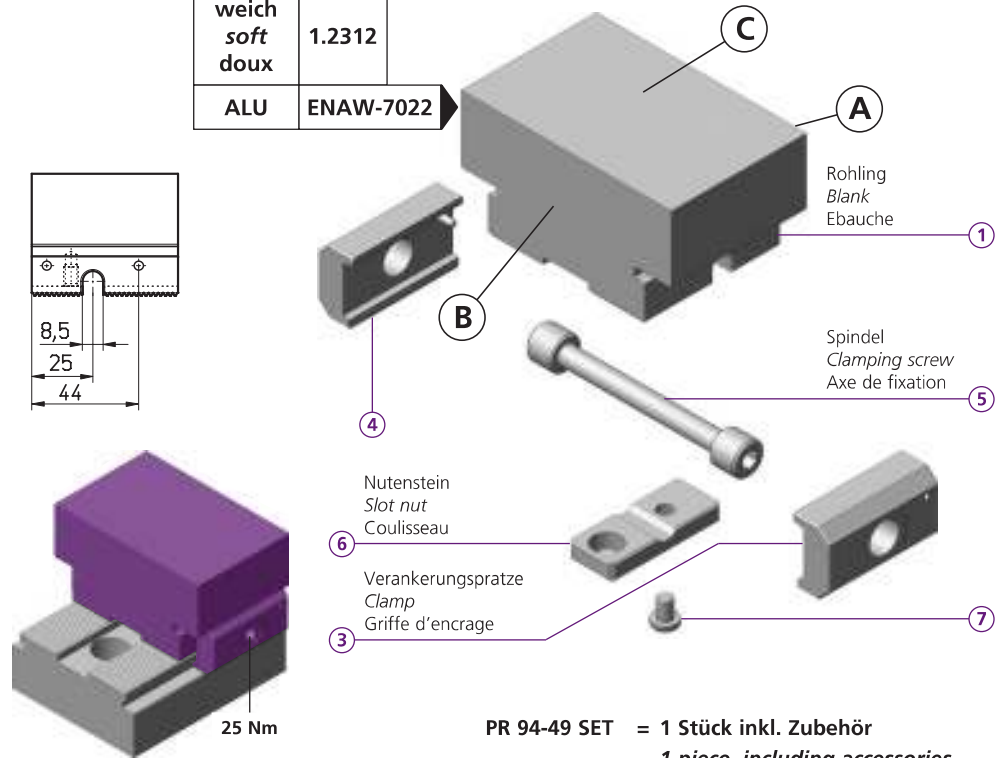
Backenrohling

Blank jaw

Ebauche du mors



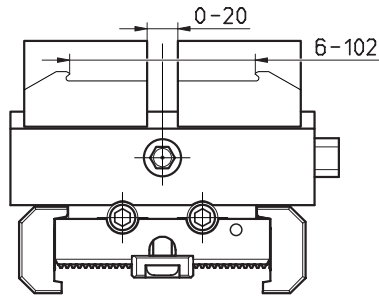
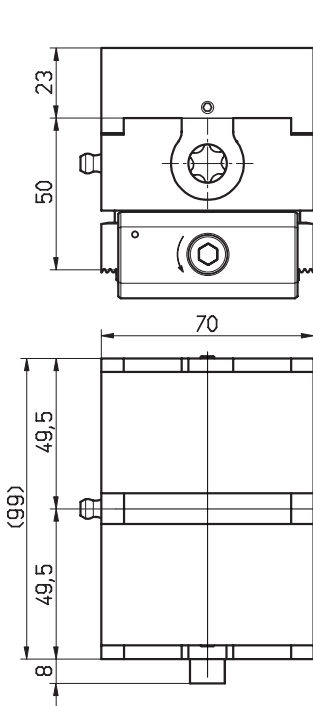
weich soft doux	1.2312
ALU	ENAW-7022



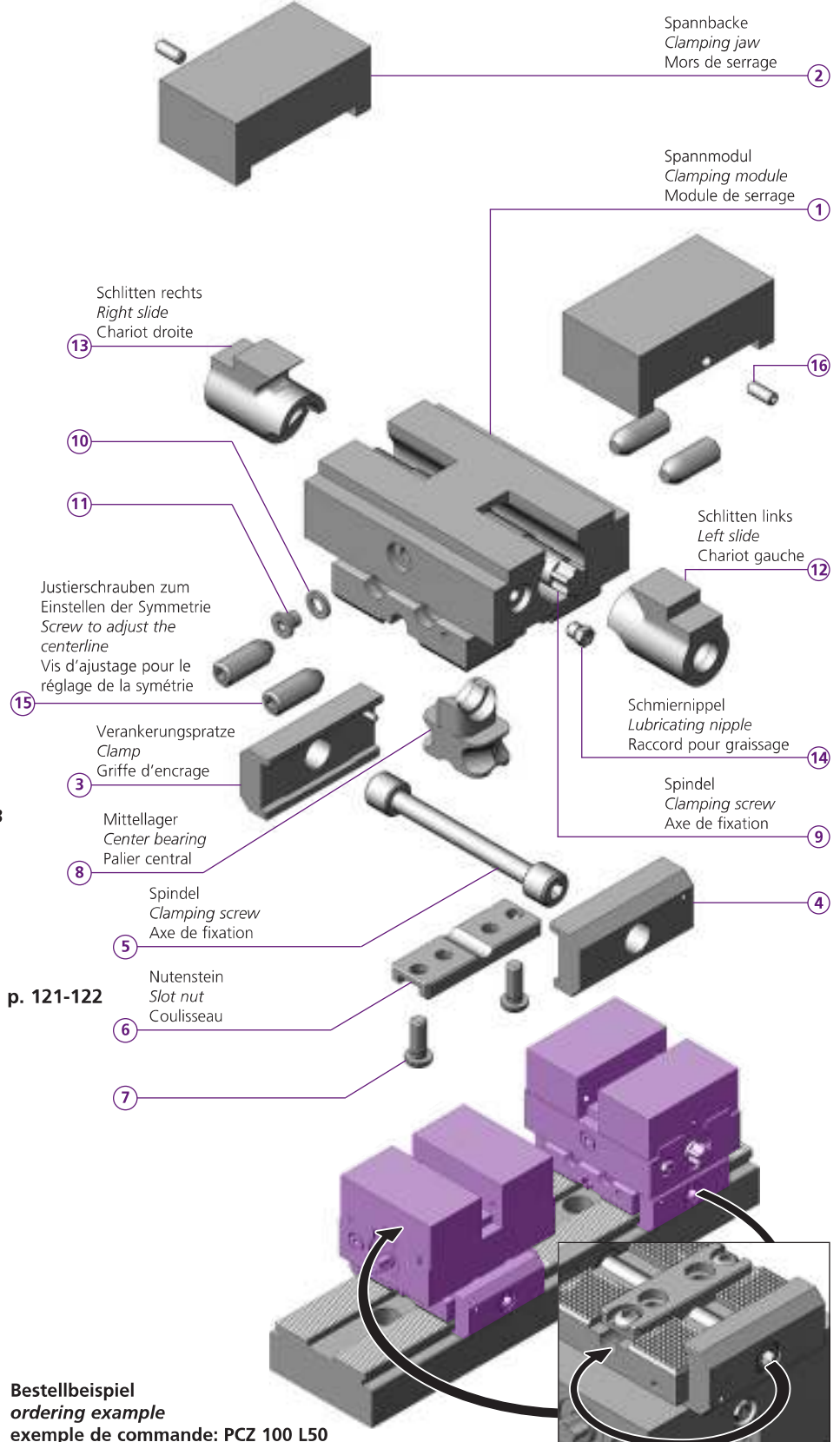
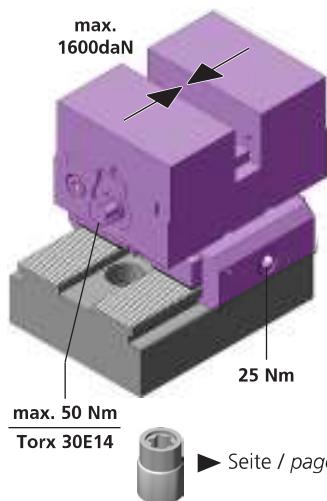
PR 94-49 SET = 1 Stück inkl. Zubehör
1 piece, including accessories
1 pièce accessoires

Bestellbeispiel / ordering example / exemple de commande: PR 94-49 SET

PR 94-49 SET	PR 94-39-50 SET	PR 125-49 SET	PR 125-49 SETALU	PR 150-49 SET
① 1x PR 94-49	① 1x PR 94-39-50	① 1x PR 125-49	① 1x PR 125-49 ALU	① 1x PR 150-49
③ 1x PCSP 50R	③ 1x PCSP 50R	③ 1x PCSP 50R	③ 1x PCSP 50R	③ 1x PCSP 50R
④ 1x PCSP 50L	④ 1x PCSP 50L	④ 1x PCSP 50L	④ 1x PCSP 50L	④ 1x PCSP 50L
⑤ 1x PCS 14	⑤ 1x PCS 14	⑤ 1x PCS 14	⑤ 1x PCS 14	⑤ 1x PCS 14
⑥ 1x PCGU 20 49	⑥ 1x PCGU 20 49	⑥ 1x PCGU 20 49	⑥ 1x PCGU 20 49	⑥ 1x PCGU 20 49
⑦ 1x M6x8 ISO 7380	⑦ 1x M6x8 ISO 7380	⑦ 1x M6x8 ISO 7380	⑦ 1x M6x8 ISO 7380	⑦ 1x M6x8 ISO 7380
X 94	X 94	X 125	X 125	X 150
H 49	H 39	H 49	H 49	H 49
kg 2,2	kg 1,5	kg 2,7	kg 0,83	kg 3,0



Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
50 Nm =	1,6 t 1'600 daN
40 Nm =	1,3 t 1'300 daN
30 Nm =	1,0 t 1'000 daN
20 Nm =	0,5 t 500 daN
10 Nm =	0,2 t 200 daN



PCZ 100 L50	
①	1x PCZ 100 L50M
②	2x _____
③	1x PCSP 60L
④	1x PCSP 60R
⑤	1x PCS 14
⑥	1x PCGUW 20
⑦	2x M6x16 DIN 7984
⑧	1x PCZML 3120
⑨	1x PCS 14M 107
⑩	1x BN726 ISO 7092 M6
⑪	1x BN1206 M6x6
⑫	1x PCZS 2439L
⑬	1x PCZS 2439R
⑭	1x PCZSNP
⑮	4x PCZJ 1025
⑯	2x M5x12 BN5210 ISO 4062
kg	3,5

p. 121-122

Bestellbeispiel
ordering example
exemple de commande: PCZ 100 L50

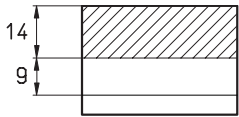
Backen zu Mini - Zentrischspanner

Jaws for mini - centric clamping module

Mors pour mini - module à centrer



powerCLAMP



Zum Erstellen Ihrer individuellen Formbacke:
Schnittzeichnung zum Ermitteln der maximalen Bearbeitungsprofiltiefe

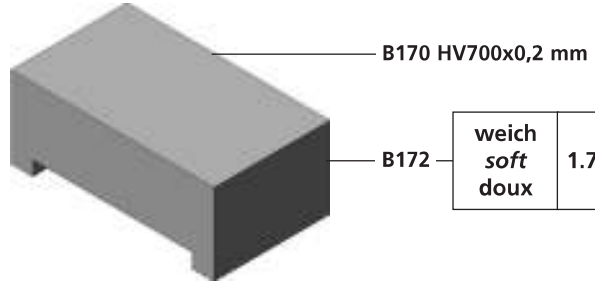
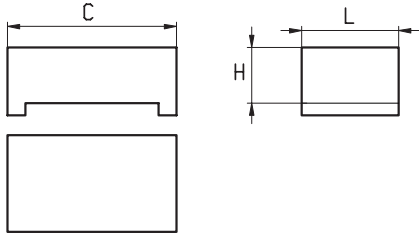
If a dedicated jaw is being machined:
This sketch will be of help regarding the workpiece penetration depth

Pour régler votre mors individuel aux étages:
Dessin en coupe pour déterminer la profondeur maximum du profil à usiner

für / for / pour B172

B170, B172

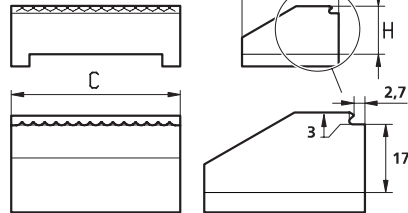
0 20 mm



weich soft doux	1.7225
-----------------------	--------

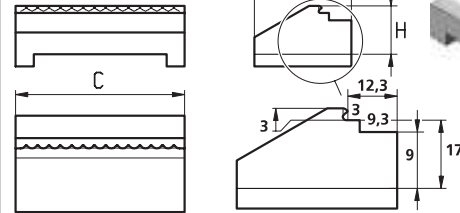
B175-26

6 26 mm



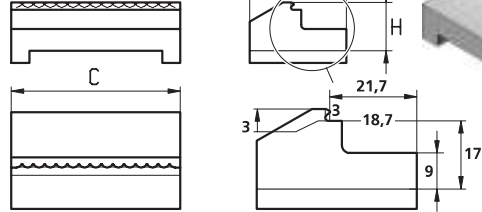
B175-45

25 45 mm



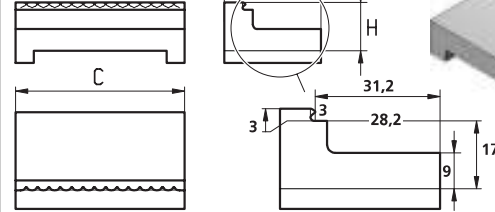
B175-64

44 64 mm



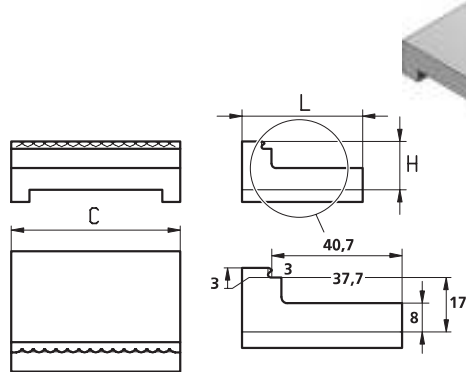
B175-83

63 83 mm



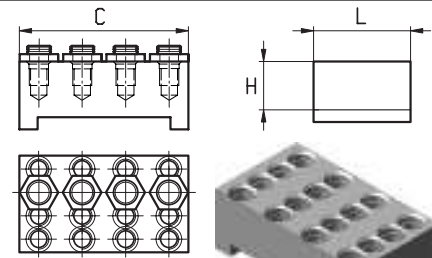
B175-102

82 102 mm

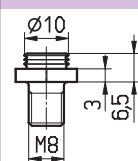


B176-80

8 80 mm



PRG 1003 M8



B

	B170	B172	B175-26	B175-45	B175-64	B175-83	B175-102	B176-80	B175 SET
C	70	70	70	70	70	70	70	70	2x B175-26
H	23	23	20	20	20	20	20	20	2x B175-45
L	40	40	40	40	40	40	50	40	2x B175-64
i	HV700 x0,2mm	*	57HRC	57HRC	57HRC	57HRC	57HRC	HV700 x0,2mm	2x B175-83 2x B175-102
kg	0,5	0,5	0,34	0,29	0,28	0,25	0,31	0,35	

* = weich / soft / doux (1.7225 Vergütungsstahl / tempering steel / acier thermo-traité)

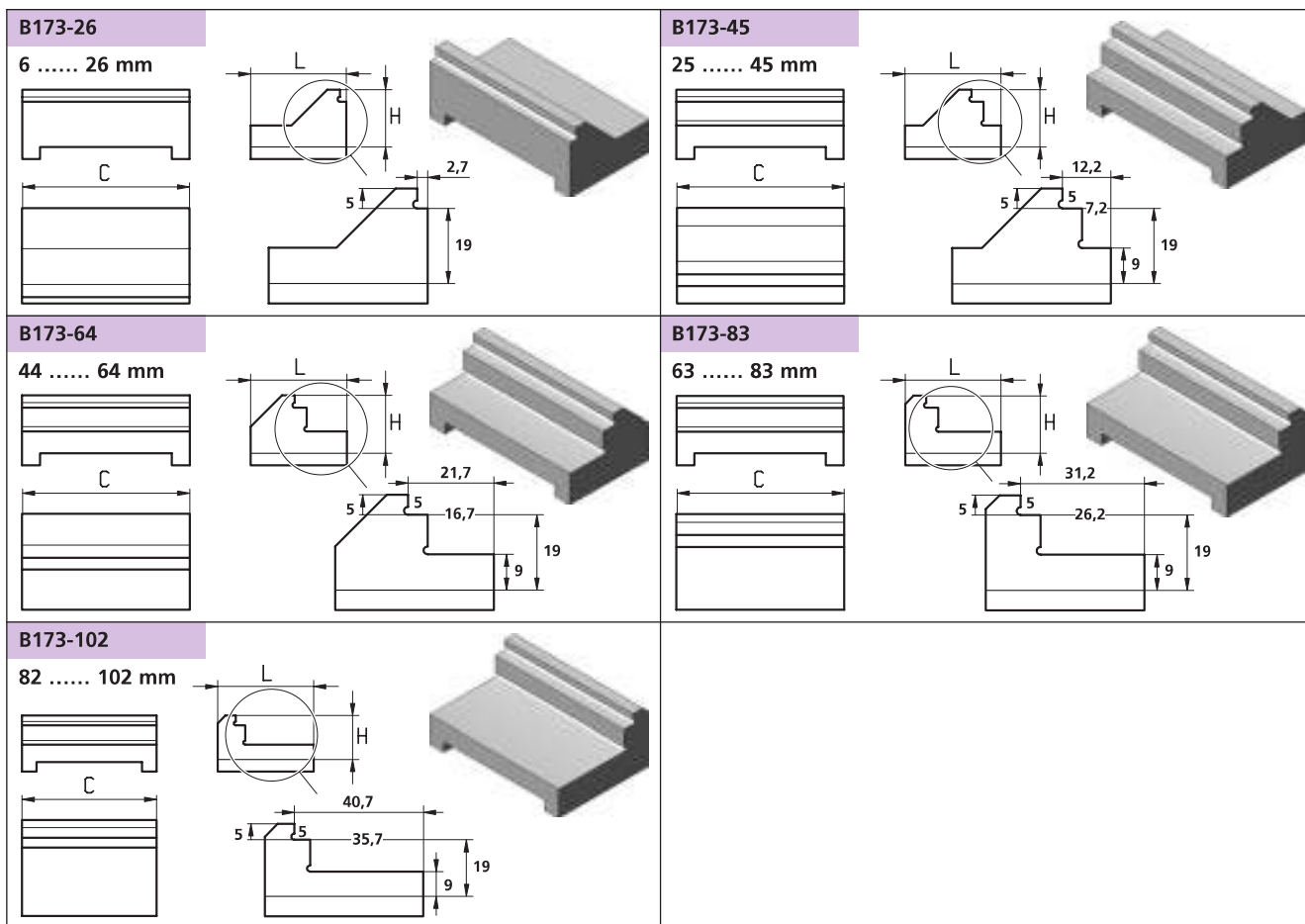
Backen zu Mini - Zentrischspanner

Jaws for mini - centric clamping module

Mors pour mini - module à centrer



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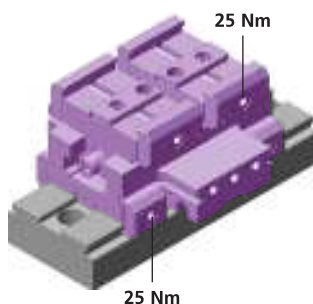
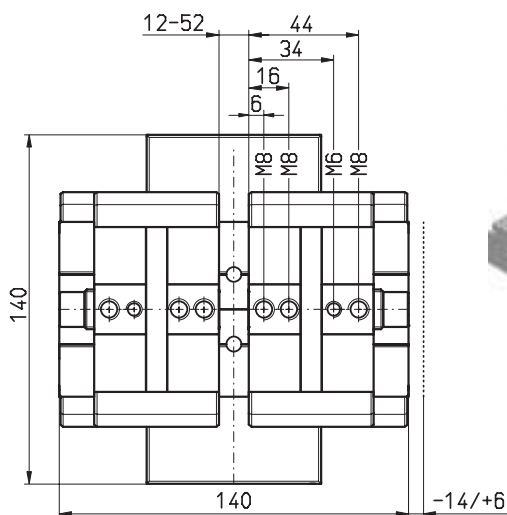
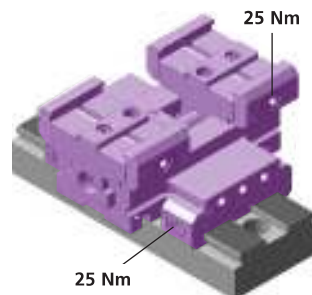
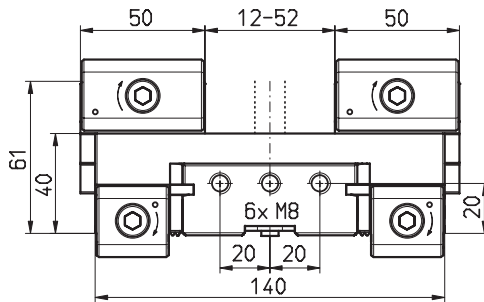
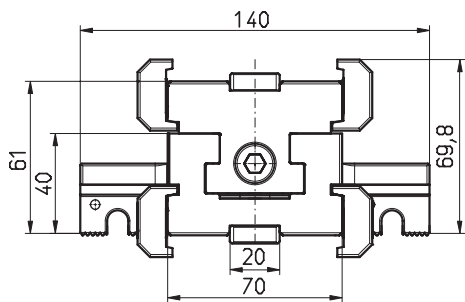
	B173-26	B173-45	B173-64	B173-83	B173-102	B173 SET
C	70	70	70	70	70	2x B173-26
H	24	24	24	24	24	2x B173-45
L	40	40	40	40	50	2x B173-64
i	HV700 x0,2mm	HV700 x0,2mm	HV700 x0,2mm	HV700 x0,2mm	HV700 x0,2mm	2x B173-83 2x B173-102
kg	0,31	0,32	0,32	0,28	0,34	

Zentrischspanner Centric clamping module Module à centrer

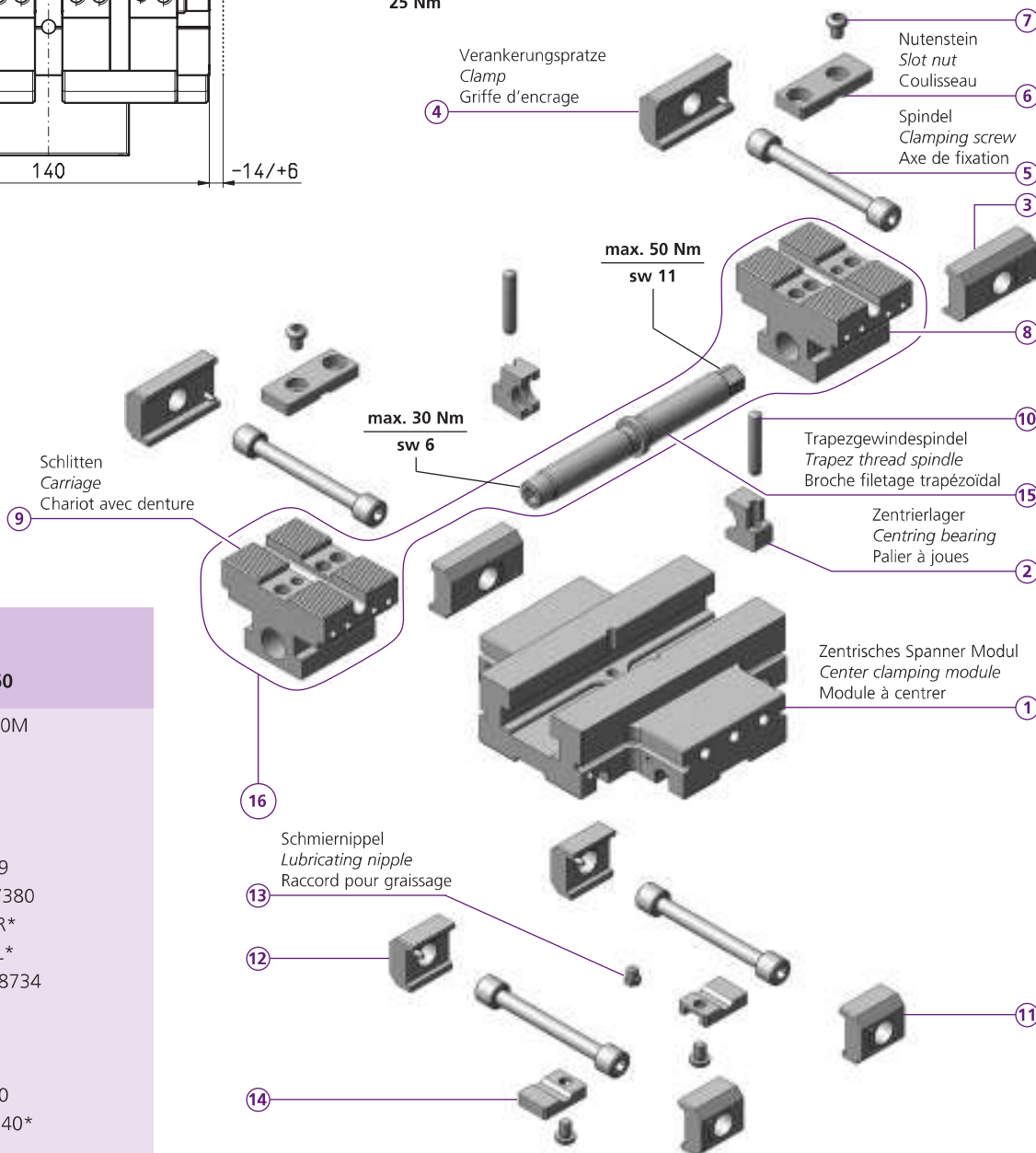
PCZ 140 L60



powerCLAMP



Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
50 Nm =	1,6 t 1'600 daN
40 Nm =	1,3 t 1'300 daN
30 Nm =	1,0 t 1'000 daN
20 Nm =	0,5 t 500 daN
10 Nm =	0,2 t 200 daN



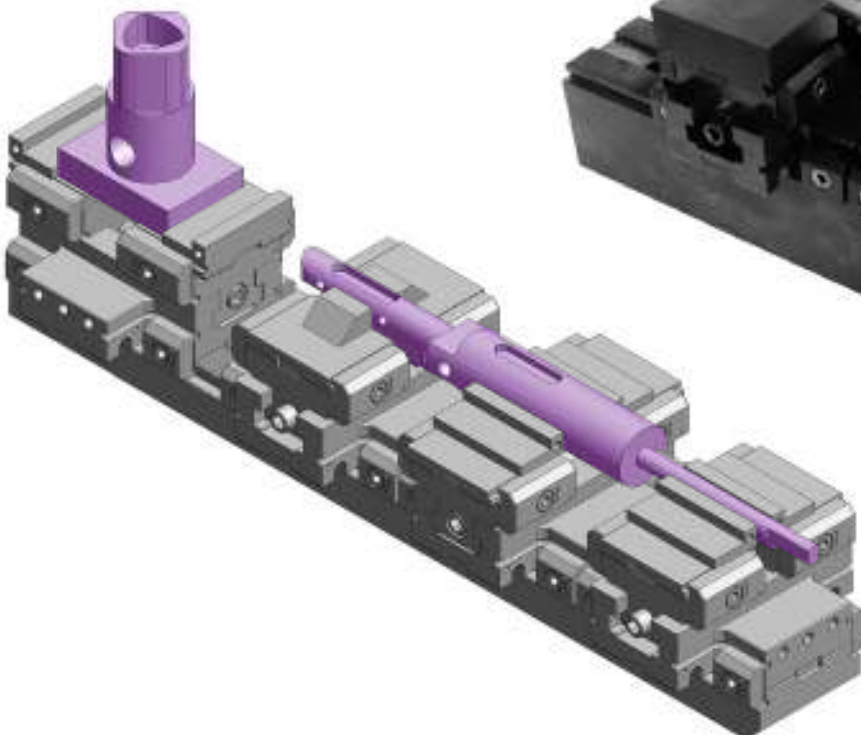
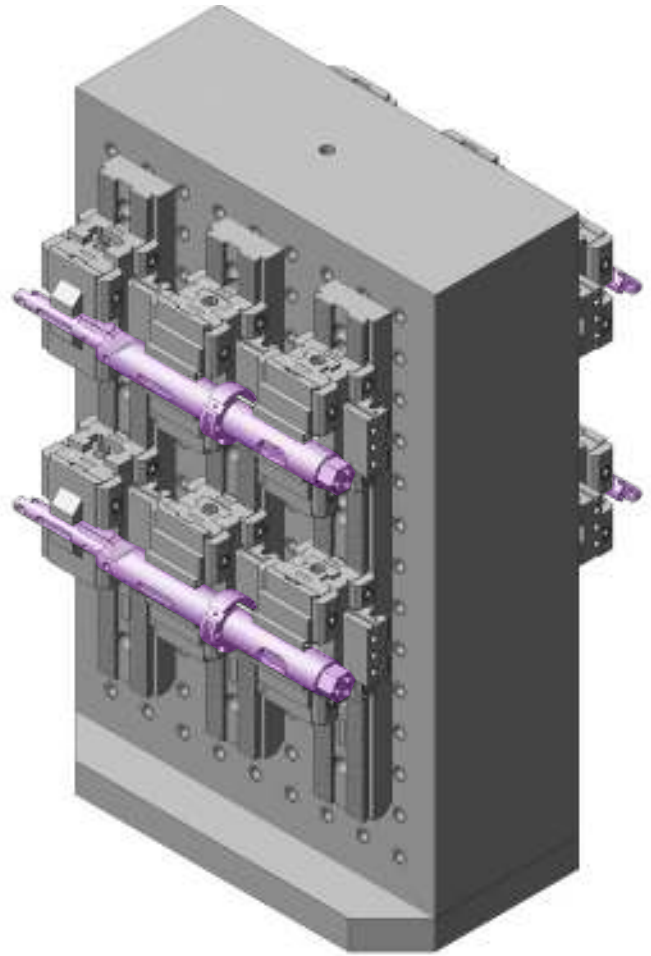
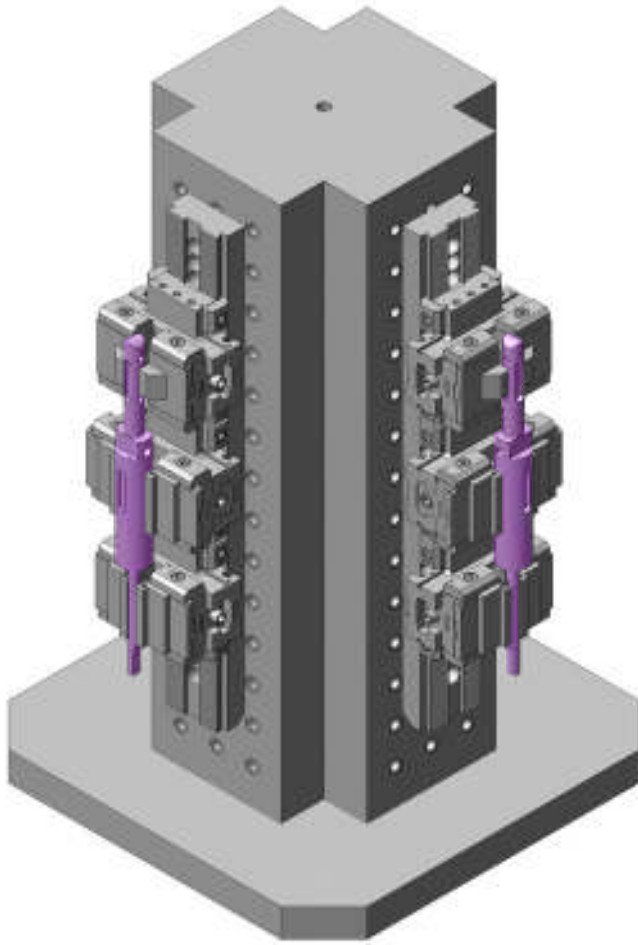
PCZ 140 L60

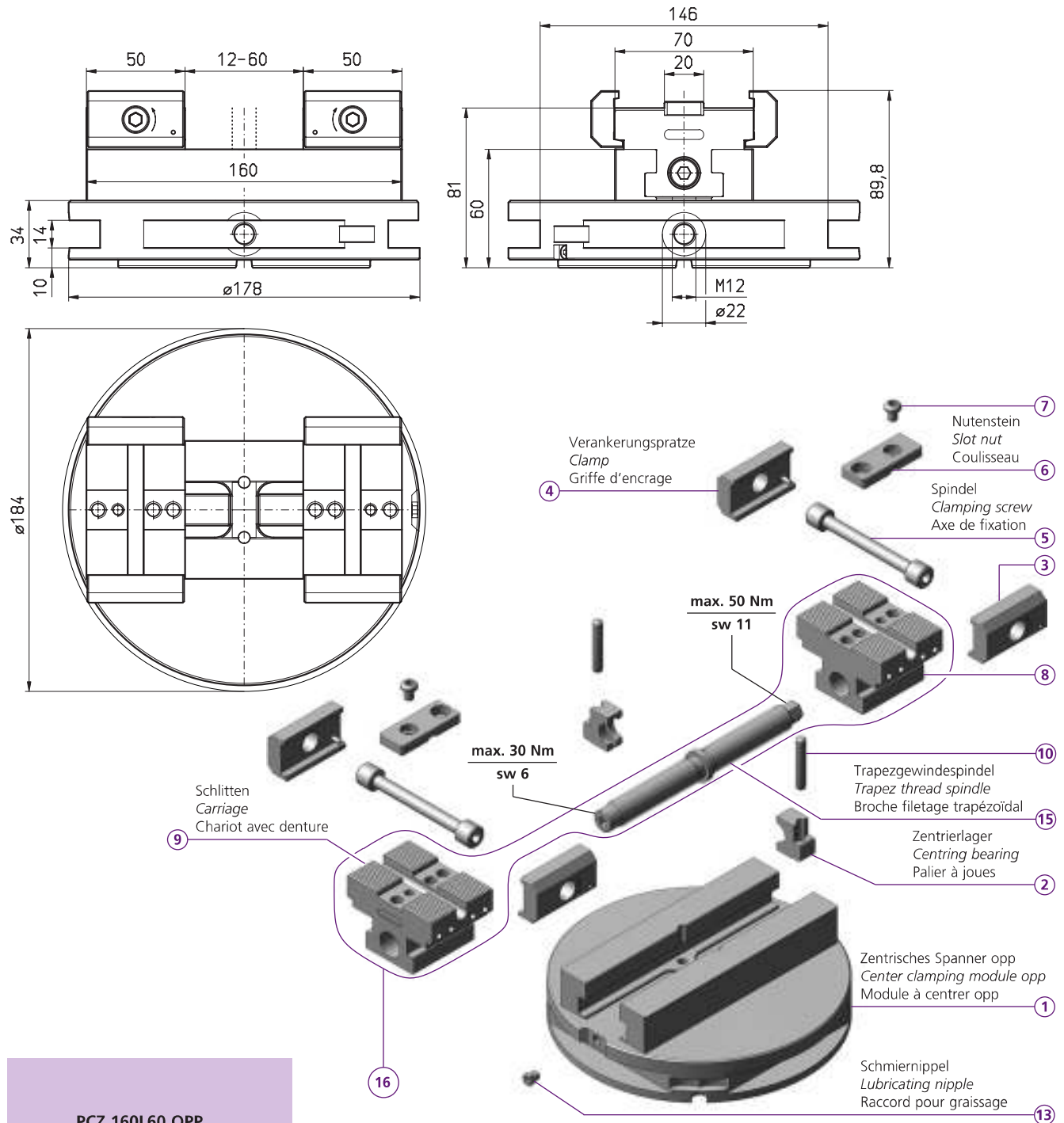
- ① 1x PCZ 140 L60M
- ② 2x PCZML 16
- ③ 2x PCSP 50L
- ④ 2x PCSP 50R
- ⑤ 4x PCS 14
- ⑥ 2x PCGU 20 49
- ⑦ 4x M6x8 ISO 7380
- ⑧ 1x PCZS 4550R*
- ⑨ 1x PCZS 4550L*
- ⑩ 2x D6x36 ISO 8734
- ⑪ 2x PCSP 30L
- ⑫ 2x PCSP 30R
- ⑬ 1x PCZSNP
- ⑭ 2x PCGU 20 30
- ⑮ 1x PCS 16TR 140*
- ⑯ 1x PCZS-SET

kg 5,6

Bestellbeispiel / ordering example / exemple de commande: PCZ 140 L60

* nur als Ganzes erhältlich / only available as a complete set / uniquement livrable dans son ensemble



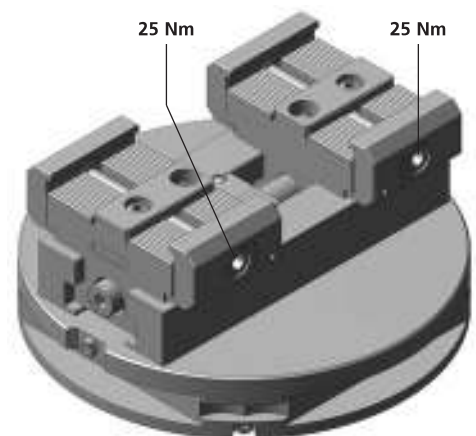


PCZ 160L60 OPP

- ① 1x PCZ 160L60M OPP
- ② 2x PCZML 16
- ③ 2x PCSP 50L
- ④ 2x PCSP 50R
- ⑤ 2x PCS 14
- ⑥ 2x PCGU 20 49
- ⑦ 4x M6x8 ISO 7380
- ⑧ 1x PCZS 4550R*
- ⑨ 1x PCZS 4550L*
- ⑩ 2x 6 M6x34 DIN 6325
- ⑬ 1x PCZSNP
- ⑮ 1x PCS 16TR 160*
- ⑯ 1x PCZS-SET 160

kg 8,8

Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
50 Nm =	1,6 t 1'600 daN
40 Nm =	1,3 t 1'300 daN
30 Nm =	1,0 t 1'000 daN
20 Nm =	0,5 t 500 daN
10 Nm =	0,2 t 200 daN



Bestellbeispiel / ordering example / exemple de commande: PCZ 160L60 OPP

* nur als Ganzes erhältlich / only available as a complete set / uniquement livrable dans son ensemble

PCZ 140 L70 R50

PCZ 160 L70 R50

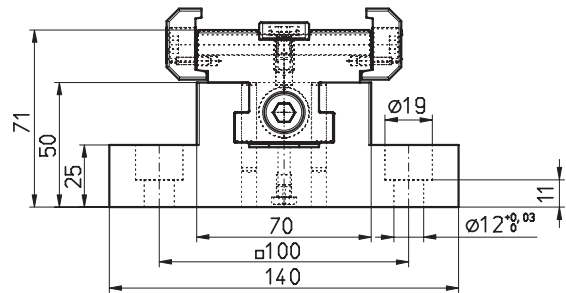
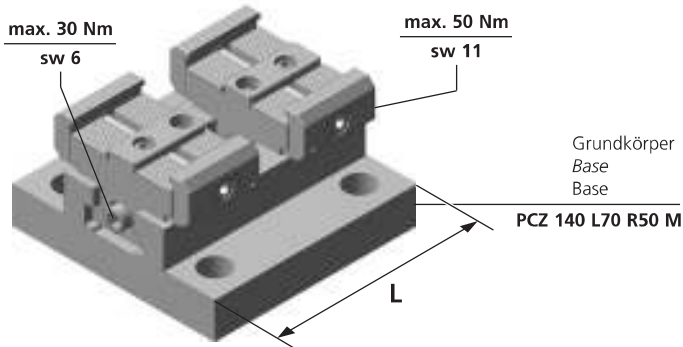
PCZ 140 L120 R50 PCZ 140L70 QP



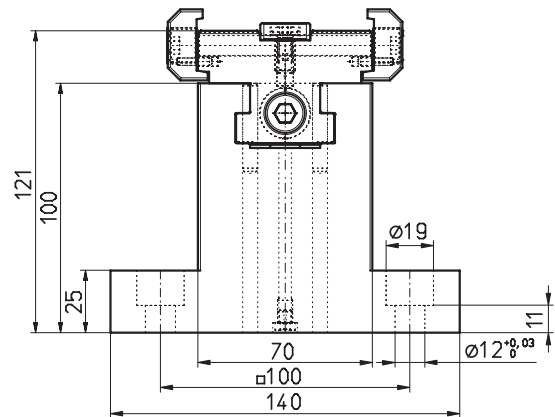
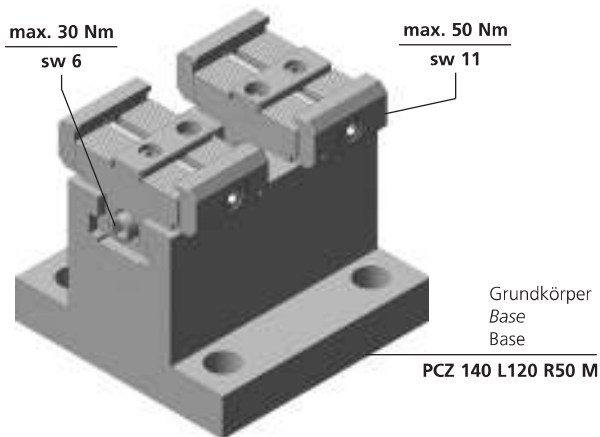
powerCLAMP

PCZ 140 L70 R50 L = 140 kg 6,5

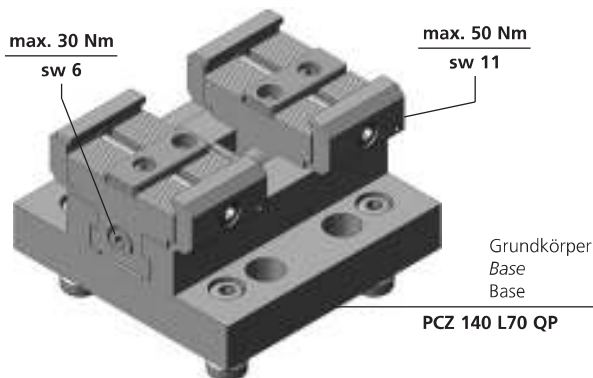
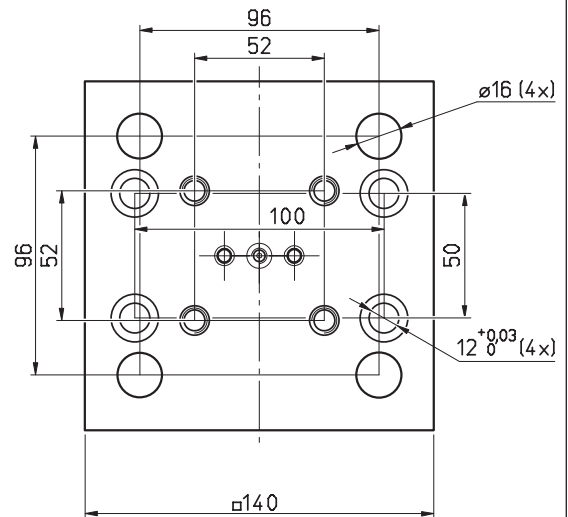
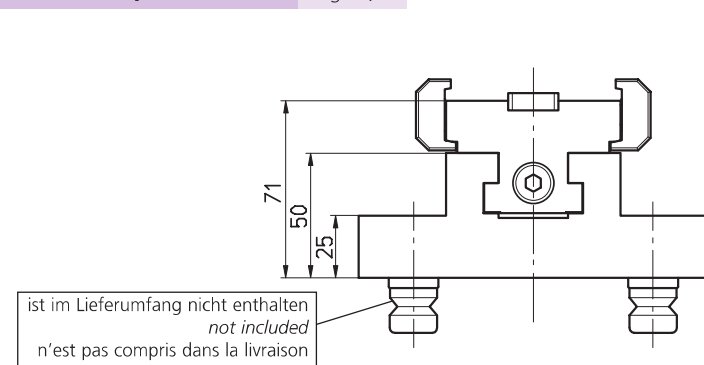
PCZ 160 L70 R50 L = 160 kg 7,8



PCZ 140 L120 R50 kg 10,5



PCZ 140 L70 QP kg 6,5



Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage
50 Nm =	1,6 t 1'600 daN
40 Nm =	1,3 t 1'300 daN
30 Nm =	1,0 t 1'000 daN
20 Nm =	0,5 t 500 daN
10 Nm =	0,2 t 200 daN

Bestellbeispiel / ordering example / exemple de commande: PCZ 140 L70 R50

Aufsatzbacken zu PCZ

Jaws to PCZ

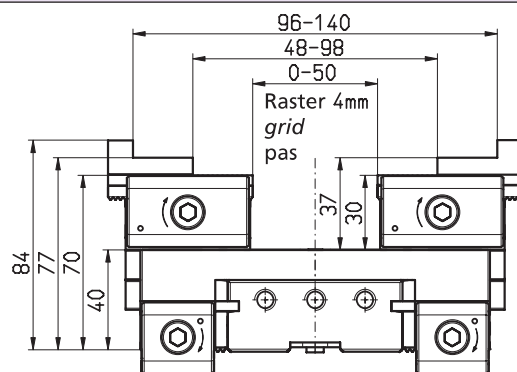
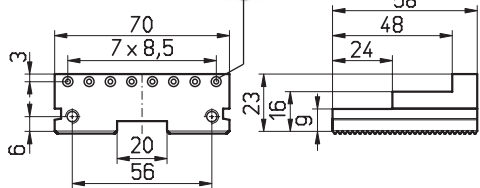
Mors pour PCZ



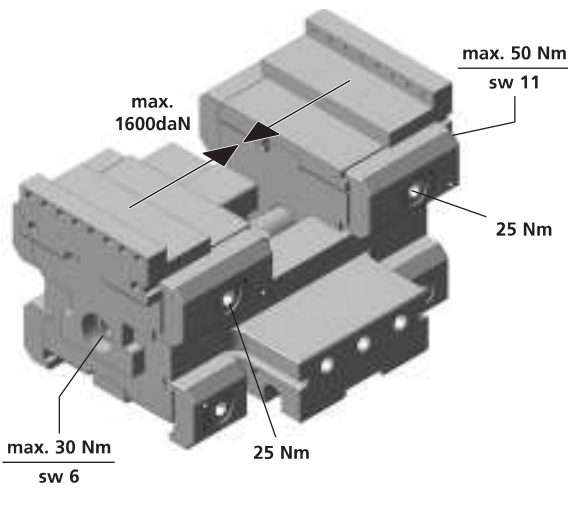
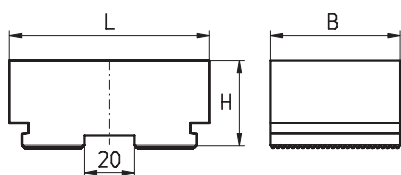
powerCLAMP

PCZB 5823 UPR kg 0,4

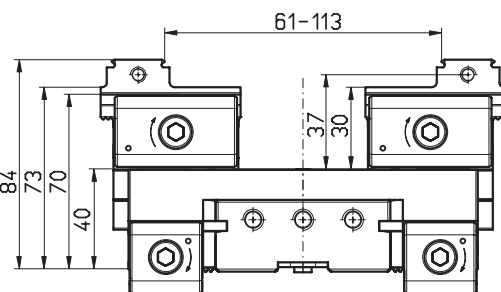
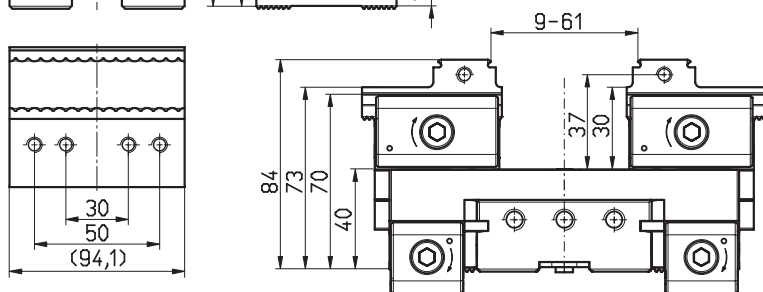
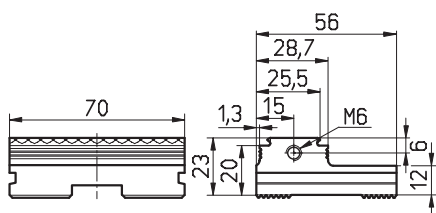
DSE 0402-90° Druckstift
Pressure pin
Pièce de pression



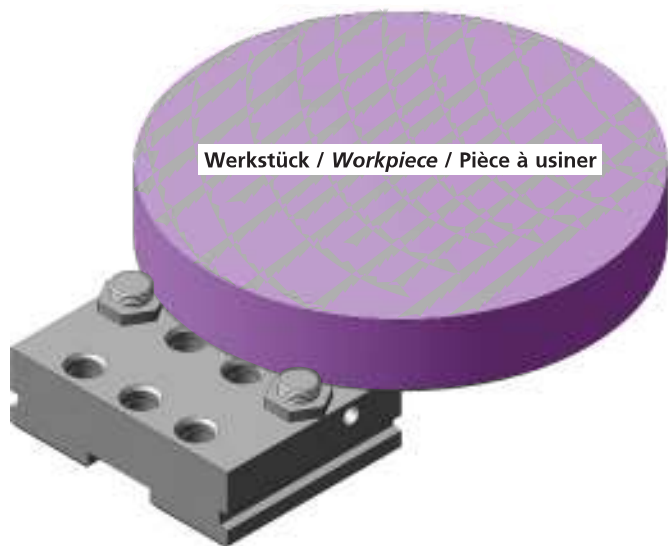
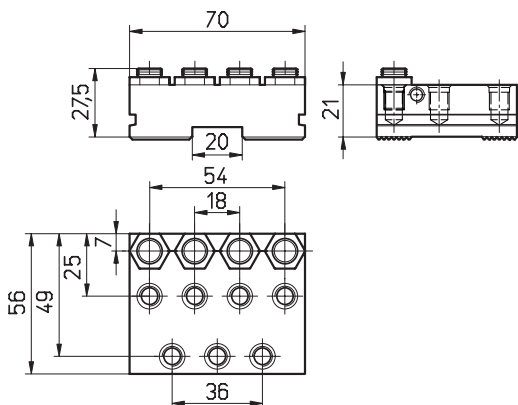
		L	B	H	kg
PCZB 8060 R34	(Stahl/steel/acier)	80	60	34	1,2
PCZB 12060 R34	(Stahl/steel/acier)	120	60	34	1,7
PCZB 8060 R40	ALU	80	60	40	0,52
PCZB 10060 R50	ALU	101	60	50	0,76



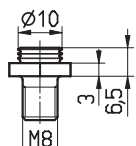
PCZB 7023 PRG kg 0,54



PCZB 7021 PRF kg 0,6



PRG 1003 M8



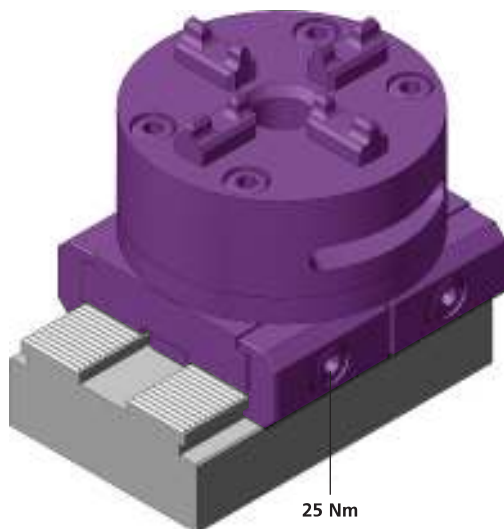
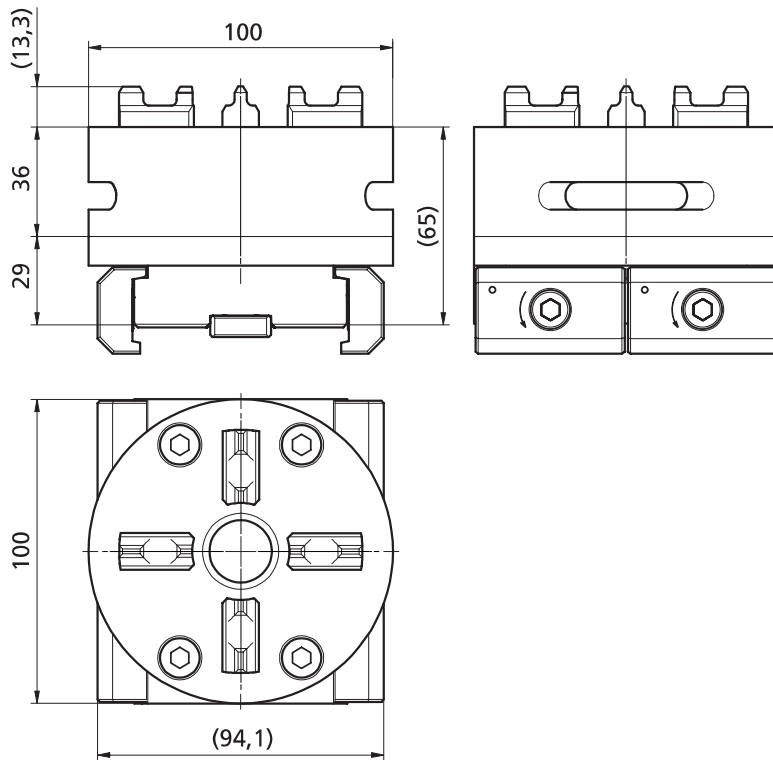
Bestellbeispiel / ordering example / exemple de commande: PCZB 5823 UPR

Trägermodul zu Erowa Spannfutter PS1X 100-65 ER-036345

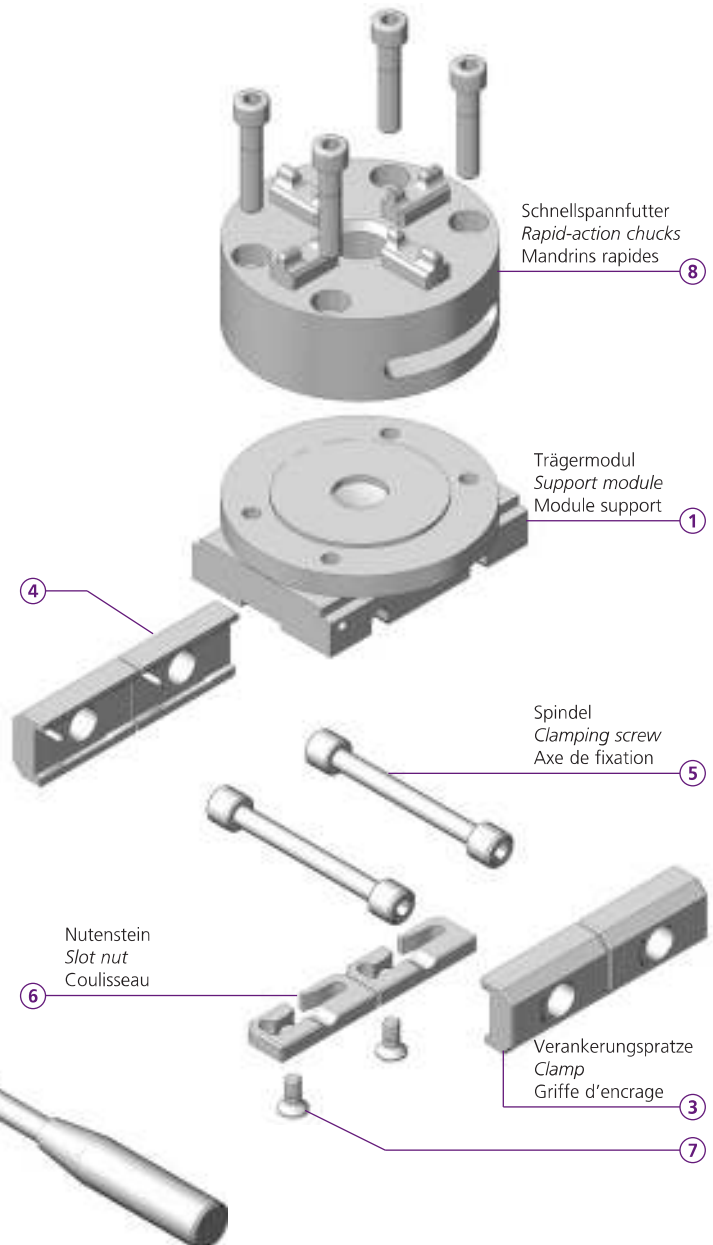
Support module to Erowa collet chuck

Module-support pour Erowa mandrin de serrage

powerCLAMP



25 Nm



Schnellspannfutter
Rapid-action chucks
Mandrins rapides

Trägermodul
Support module
Module support

Spindel
Clamping screw
Axe de fixation

Nutenstein
Slot nut
Coulisseau

Verankerungspratze
Clamp
Griffe d'encrage

PS1X 100-65 ER-036345

- ① 1x PSX 100-29
- ③ 2x PCSP 50R
- ④ 2x PCSP 50L
- ⑤ 2x PCS 14
- ⑥ 2x PCGU 2049F
- ⑦ 2x M6x14 ISO 10642 BN20
- ⑧ 1x ER-036345

kg 4,0

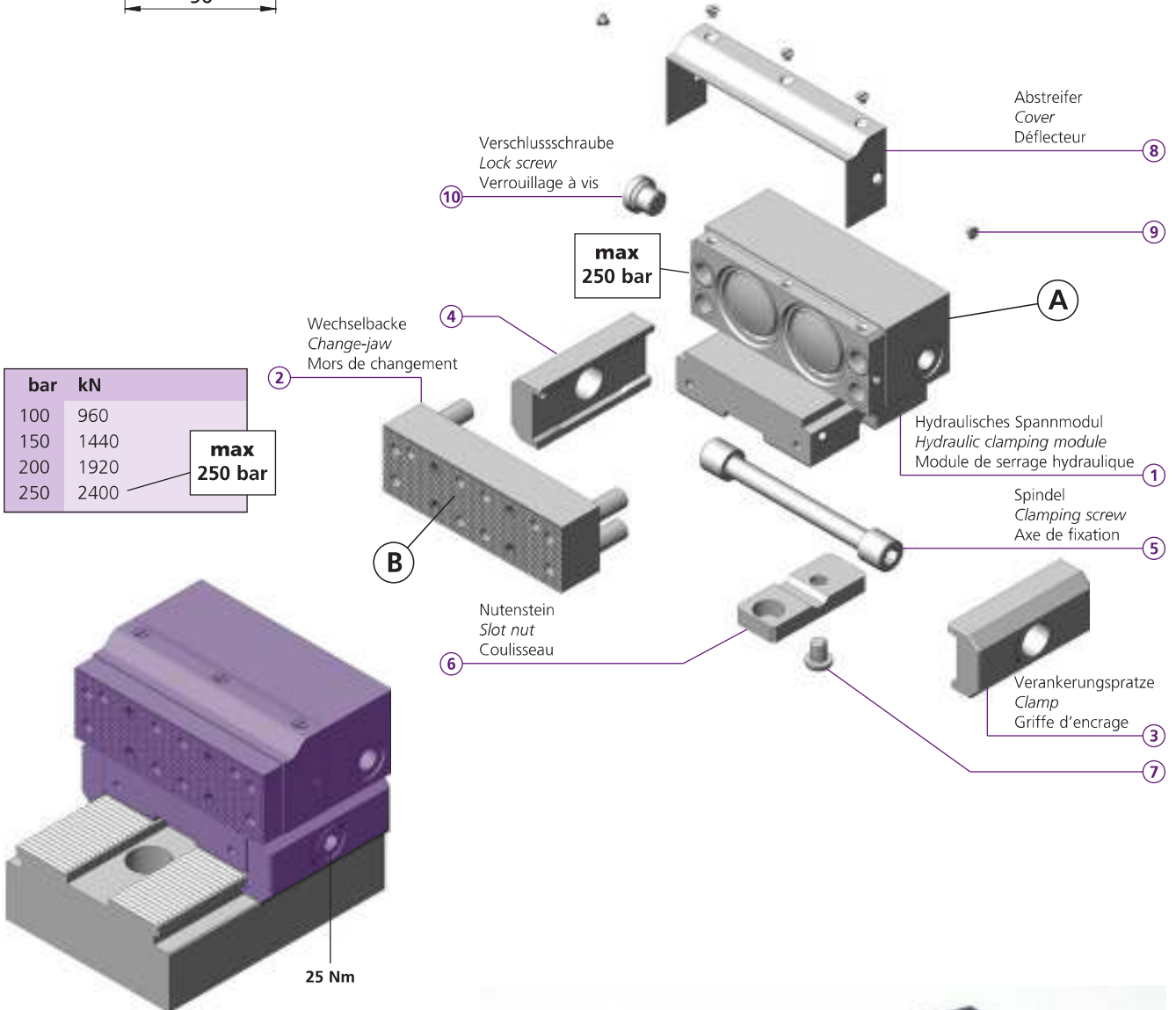
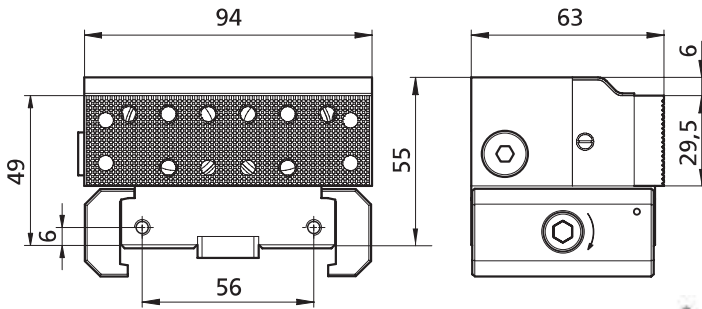
Bestellbeispiel / ordering example / exemple de commande: PS-X 100-65 EROWA

Hydraulisches Spannmodul
Hydraulic clamping module
Module de serrage hydraulique

PSH1X 94L55-300



powerCLAMP



PSH1X 94L55-300	
①	1x PSH1X94L55-300-CP
②	1x B301
③	2x PCSP 60R
④	2x PCSP 60L
⑤	2x PCS 14
⑥	2x PCGU 20 49
⑦	1x M6x8 ISO 7380
⑧	1x 3000838
⑨	5x M2,5x3 DIN 963
⑩	1x G 1/8 A x11
kg	2,3



Bestellbeispiel / ordering example / exemple de commande: PSH1X 94L55-300

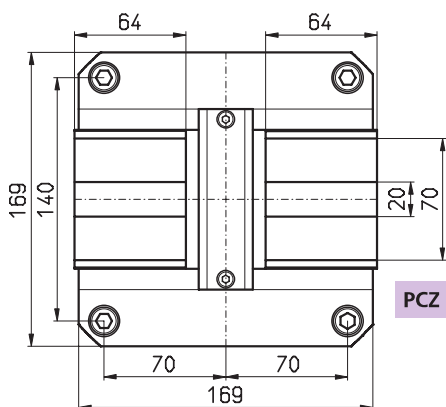
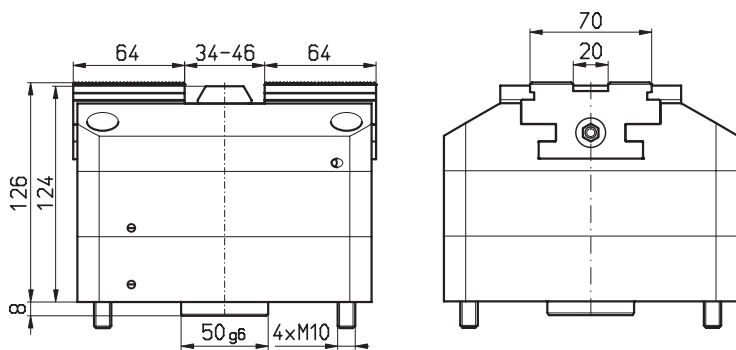
Zentrischspanner pneumatisch

Pneumatic centric vice

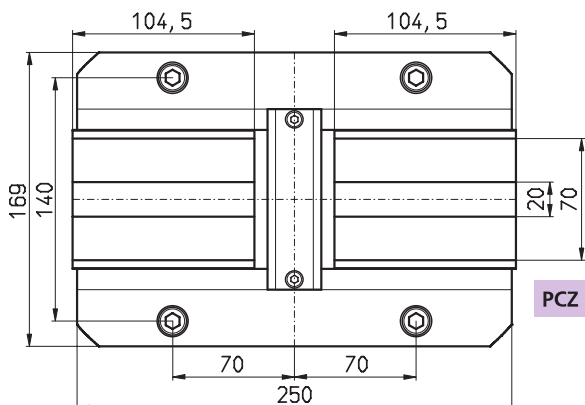
Etau à centrer pneumatique



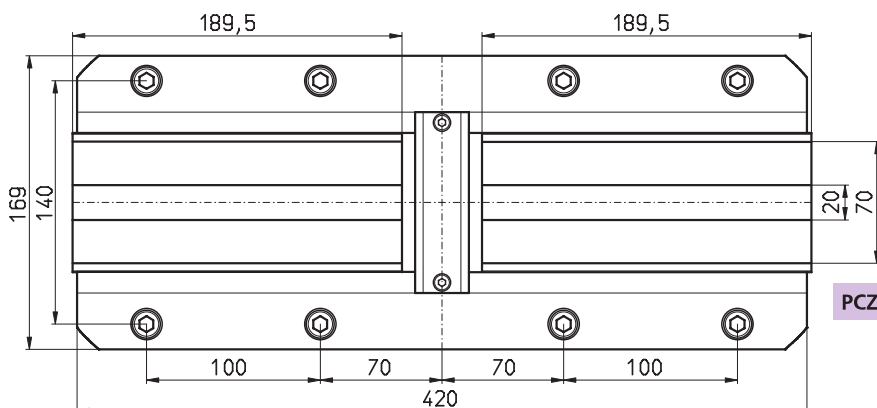
powerCLAMP



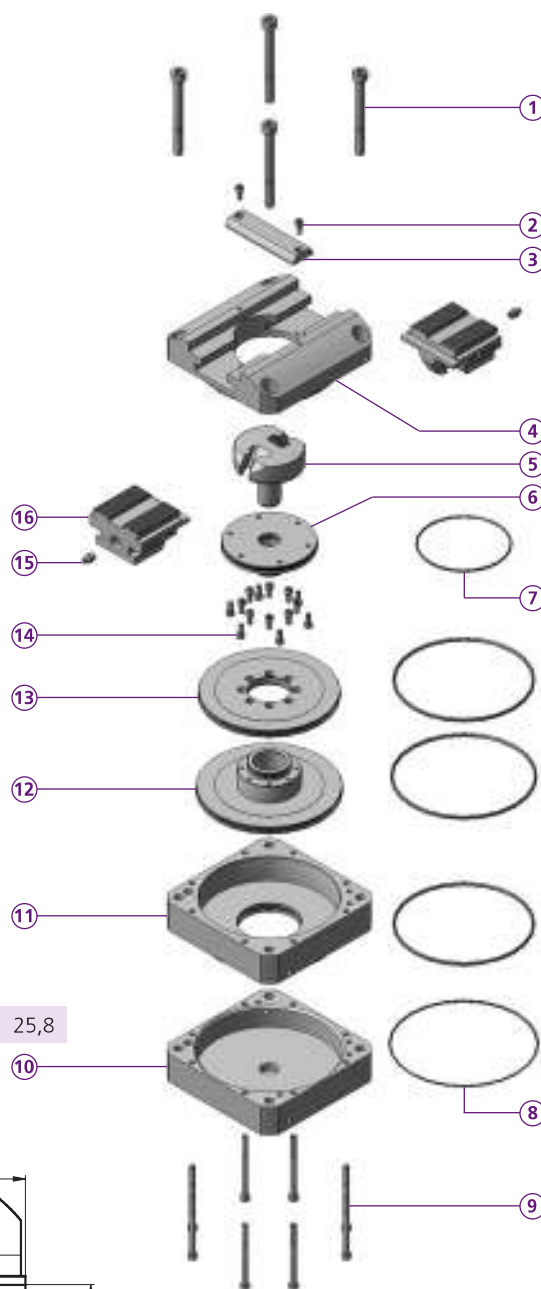
PCZ 170 PND 170 kg 15



PCZ 170 PND 250 kg 25,8



PCZ 170 PND 420 kg 48,5



Backenhub 6 mm (pro Backe)
stroke of clamping 6 mm (each jaw)
course du mors se serrage 6 mm (par mors)

bar	max.	
3	0,33 t	330 daN
4	0,38 t	380 daN
5	7,00 t	700 daN
6	0,95 t	950 daN
7	1,00 t	1'000 daN
8	1,10 t	1'100 daN
9	1,20 t	1'200 daN

mit Sperrluftanschluss
air purge connection
avec raccord pour arrêt d'air

Spannbacken siehe Seite 109-119
Clamping jaws page 109-119
Mors de serrage page 109-119



Bestellbeispiel / ordering example / exemple de commande: PCZ 170 PND 170

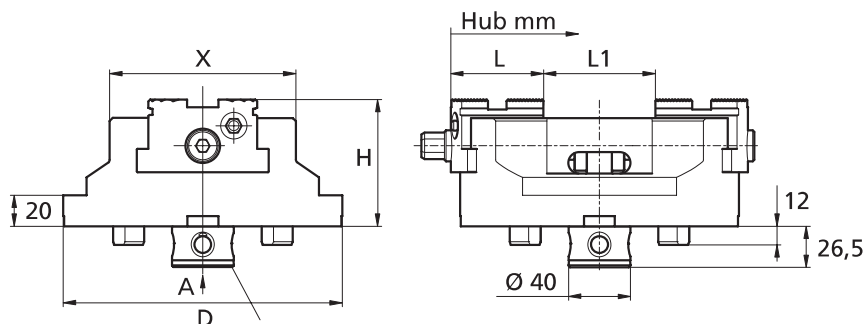
Zentrierspanner mit hohen Spannkräften

Self centering vice for duty clamping

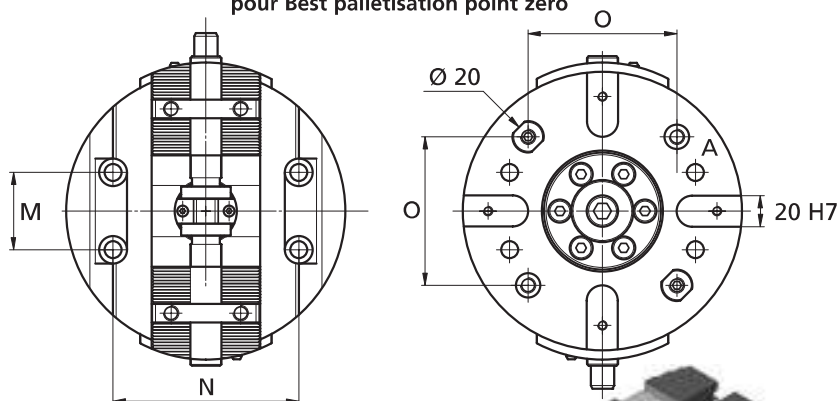
Serrage centreur avec des forces de serrages



powerCLAMP



für Best O-Punkt Spannsystem
for Best zero clamp system
pour Best palletisation point zero



Technische Daten:
Gehäusegrößen von 115 bis 500 mm
Spannweiten bis zu 420 mm
Bis 60 mm Hub / Backe
Spannkraft bis zu 40 kN
Wiederholgenauigkeit im Zentrierbereich von $\pm 0,005$ mm

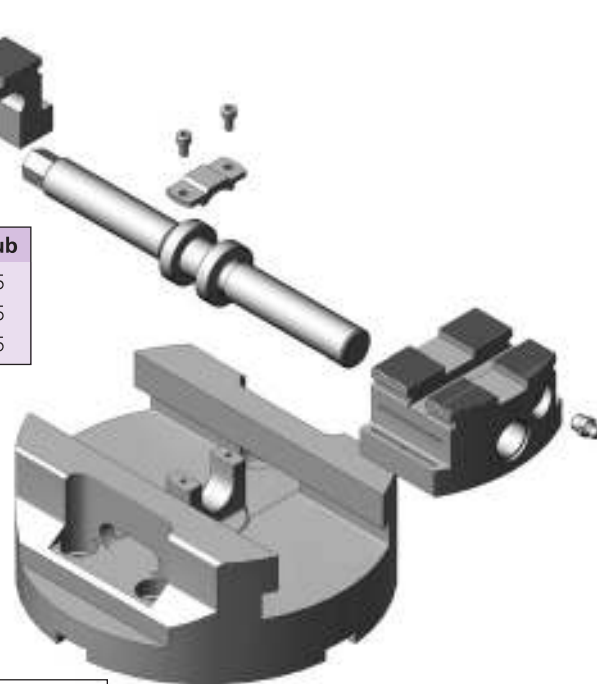
Technical specifications:
Housing sizes 115 to 500 mm
Clamps up to 420 mm
Stroke per jaw up to 60 mm
Clamping force up to 40 kN
Repeatability at the point of clamping $\pm 0,005$ mm

Données techniques:
Grandeur du bâti: de 115 jusqu'à 500 mm.
Distance de serrage jusqu'à 420 mm
Course du mors jusqu'à 60 mm
Force de serrage jusqu'à 40 kN
Précision de répétition du centrage $\pm 0,005$ mm

	X	H	D	L	L1	M	N	O	Hub
PCZ 140 L70 RPC	100	70	140	50	0 - 100	50	100	52	25
PCZ 180 L82 RPC	120	82	180	60	0 - 160	50	120	96	35
PCZ 250 L82 RPC	130	82	190	95	0 - 220	100	150	96	35

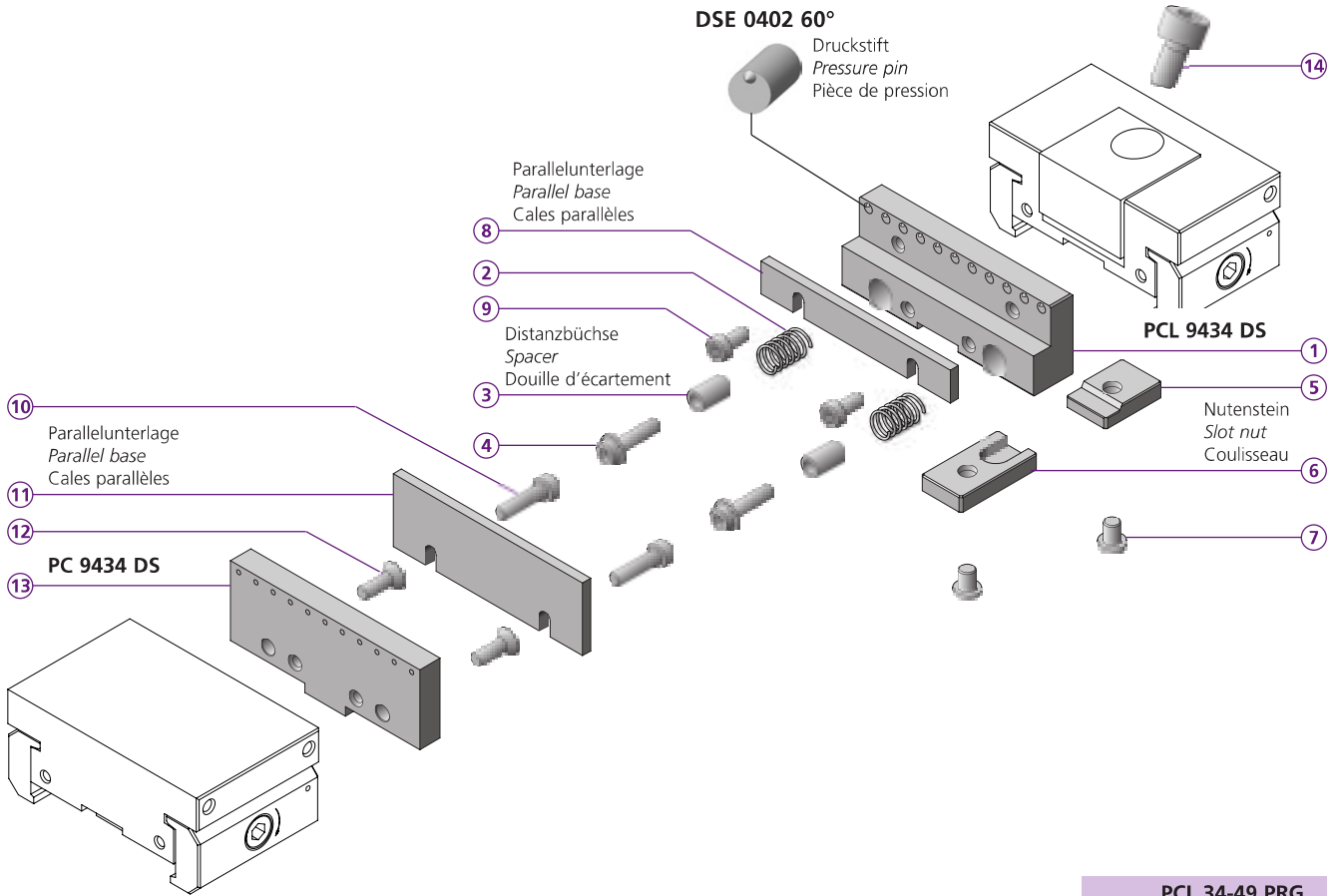
PCZ 250L82 RPC		kg 19,0 max. 250 Nm	
Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage		
10 Nm =	0,25 t	250 daN	
20 Nm =	0,39 t	391 daN	
30 Nm =	0,53 t	533 daN	
40 Nm =	0,67 t	674 daN	
50 Nm =	0,82 t	816 daN	
60 Nm =	0,96 t	957 daN	
70 Nm =	1,10 t	1'099 daN	
80 Nm =	1,24 t	1'241 daN	
90 Nm =	1,38 t	1'382 daN	
100 Nm =	1,52 t	1'524 daN	
110 Nm =	1,67 t	1'665 daN	
120 Nm =	1,81 t	1'807 daN	
130 Nm =	1,95 t	1'948 daN	
140 Nm =	2,09 t	2'090 daN	
150 Nm =	2,23 t	2'231 daN	
160 Nm =	2,37 t	2'373 daN	
170 Nm =	2,51 t	2'514 daN	
180 Nm =	2,66 t	2'656 daN	
190 Nm =	2,80 t	2'797 daN	
200 Nm =	2,94 t	2'939 daN	

PCZ 140L70 RPC PCZ 180L82 RPC		kg 5,6 kg 10,9 max. 120 Nm	
Drehmoment Torque Couple de torsion	Spannkraft Workholding force Force de serrage		
10 Nm =	0,25 t	250 daN	
20 Nm =	0,39 t	391 daN	
30 Nm =	0,53 t	533 daN	
40 Nm =	0,67 t	674 daN	
50 Nm =	0,82 t	816 daN	
60 Nm =	0,96 t	957 daN	
70 Nm =	1,10 t	1'099 daN	
80 Nm =	1,24 t	1'241 daN	
90 Nm =	1,38 t	1'382 daN	
100 Nm =	1,52 t	1'524 daN	
110 Nm =	1,67 t	1'665 daN	
120 Nm =	1,81 t	1'807 daN	



Bestellbeispiel
ordering example
exemple de commande: PCZ 140 L70 RPC

Spannbacken siehe Seite 109-119
Clamping jaws page 109-119
Mors de serrage page 109-119



PCL 34-49 PRG	
①	1x PCL 3449 DS
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
⑧	1x PCU 29033
⑨	2x M5x10 ISO 4762
⑩	2x M5x20 ISO 4762
⑪	1x PCU 46033
⑫	2x M5x16 DIN 7991
⑬	1x PC 3449 DS
⑭	1x M8x20 ISO 4762

Bestellbeispiel / ordering example / exemple de commande: PCL 94-34 PRG

PCL 43-49 PRG	
①	1x PCL 4349 DS
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
⑧	1x PCU 29042
⑨	2x M5x10 ISO 4762
⑩	2x M5x20 ISO 4762
⑪	1x PCU 46042
⑫	2x M5x16 DIN 7991
⑬	1x PC 4349 DS
⑭	1x M8x20 ISO 4762

PCL 48-49 PRG	
①	1x PCL 4849 DS
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
⑧	1x PCU 29047
⑨	2x M5x10 ISO 4762
⑩	2x M5x20 ISO 4762
⑪	1x PCU 46047
⑫	2x M5x16 DIN 7991
⑬	1x PC 4849 DS
⑭	1x M10x22 ISO 4762

PCL 48-34 PRG	
①	1x PCL 4834 DS
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
⑧	1x PCU 14067
⑨	2x M5x10 ISO 4762
⑩	2x M5x20 ISO 4762
⑪	1x PCU 31047
⑫	2x M5x16 DIN 7991
⑬	1x PC 4834 DS
⑭	1x M10x22 ISO 4762

PCL 94-34 PRG	
①	1x PCL 9434 DS
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
⑧	1x PCU 14093
⑨	2x M5x10 ISO 4762
⑩	2x M5x20 ISO 4762
⑪	1x PCU 31093
⑫	2x M5x16 DIN 7991
⑬	1x PC 9434 DS
⑭	1x M10x22 ISO 4762

PCL 94-49 PRG	
①	1x PCL 9449 DS
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
⑧	1x PCU 29093
⑨	2x M5x10 ISO 4762
⑩	2x M5x20 ISO 4762
⑪	1x PCU 46093
⑫	2x M5x16 DIN 7991
⑬	1x PC 9449 DS
⑭	1x M10x22 ISO 4762

Linearset

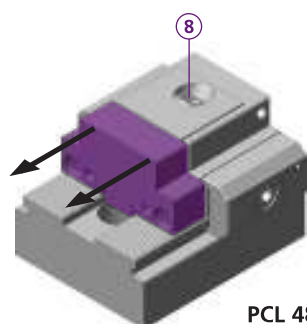
Linearset

Set linéaire

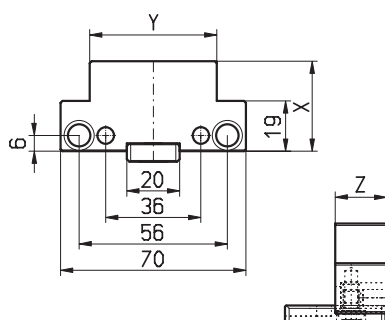


powerCLAMP

Von Niederzug zu Linear!
From pull down jaws to linear stroke!
Mors abaissant et serrage linéaire parallèle!

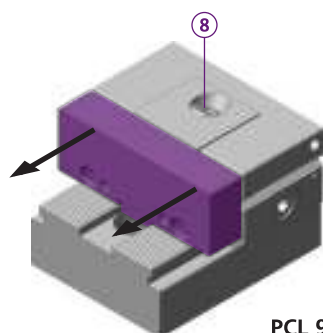
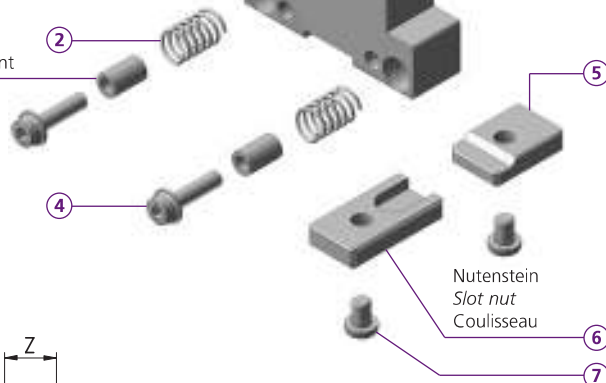


PCL 4834 N

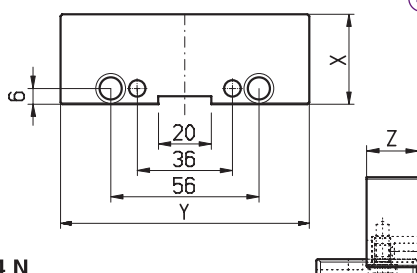


Vorsatzbacke
 Auxiliary Jaw
 Mors additionnel pour serrage linéaire ①

Distanzbüchse
 Spacer
 Douille d'écartement ③



PCL 9434 N



Nutenstein
 Slot nut
 Coulisseau ⑥

PCL 4834 N	
①	1x PCL 4834 N20
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
⑧	1x M10x22
X	34
Y	48
Z	19,5

PCL 4349 N	
①	1x PCL 4349 N20
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
X	49
Y	43
Z	19,5

PCL 9434 N	
①	1x PCL 9434 N20
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
⑧	1x M10x22
X	34
Y	94
Z	19,5

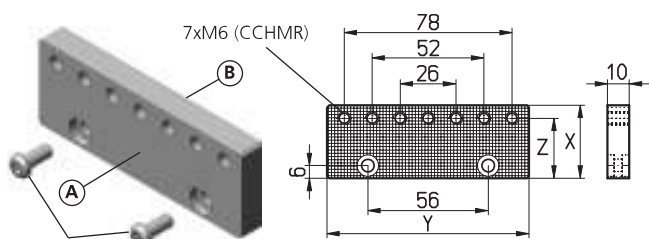
PCL 9449 N	
①	1x PCL 9449 N20
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
X	49
Y	94
Z	19,5

PCL 12549 N	
①	1x PCL 12549 N20
②	2x FED 10175
③	2x PCD 0813
④	2x BN 1392 M5x20
⑤	1x PCGU 2028
⑥	1x PCGU 2030 LB
⑦	2x M6x8 ISO 7380
X	49
Y	94
Z	19,5

Bestellbeispiel / ordering example / exemple de commande: PCL 4834 N

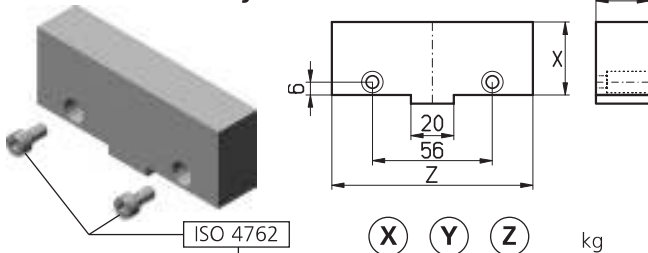


Universalbacke / Universal jaw / Mors universel



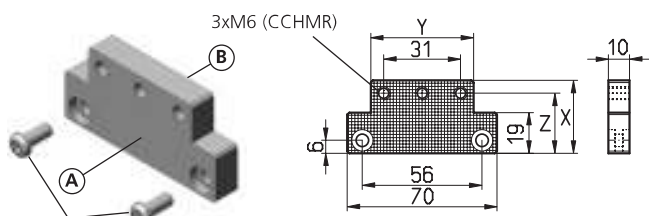
	A	B	X	Y	Z		kg
PC 9434			34	94	28	56 HRC	0,24
PC 9449			49	94	43	56 HRC	0,35
PC 12549			49	125	43	HV 700x0.2	0,47

weiche Backe / soft jaw / mors doux 1.0570

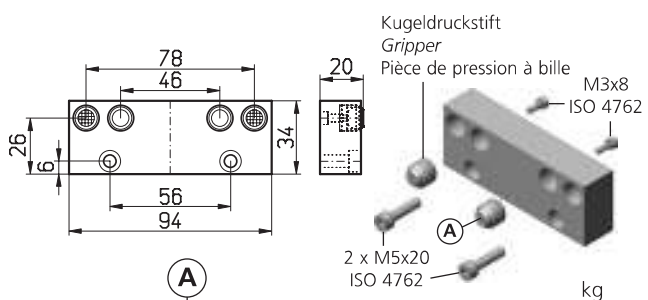


		X	Y	Z	kg
PC 943425W	M5x25	34	25	94	0,62
PC 943430W	M5x30	34	30	94	0,75
PC 944930W	M5x30	49	30	94	1,08
PC 1254930W	M5x30	49	30	125	1,44

**Backe mit 2 Pendeldruckstücken
 Jaw with 2 swiveling balls
 Mors avec deux pièces de pression mobiles**

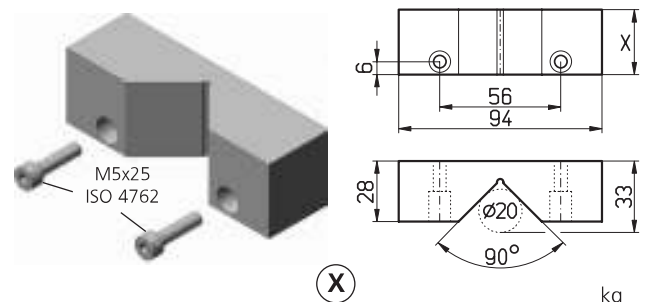


	A	B	X	Y	Z		kg
PC 4349			49	43	43	56 HRC	0,20
PC 4834			34	48	28	56 HRC	0,15



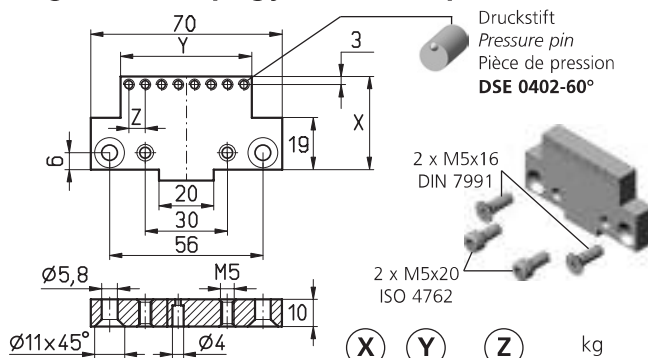
PC 9460							0,45
PC 9460R							

Prismabacke / Prismatic jaw / Mors avec prisme

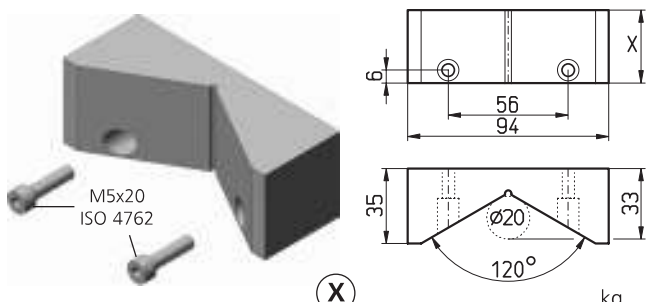


PC 9434 V90°	56HRC	34	min ø 6 max ø 52				0,59
PC 9449 V90°	56HRC	49	min ø 6 max ø 52				0,86

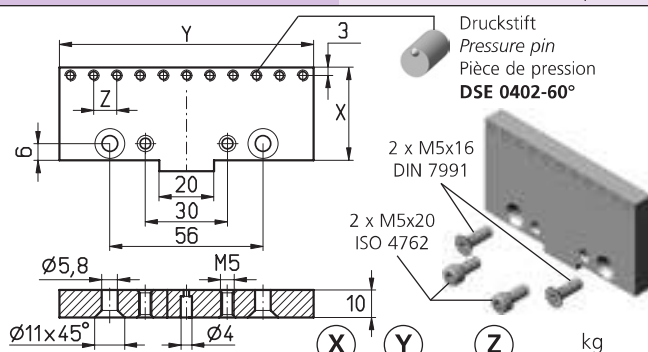
Prägebacke / Stamping jaw / Mors d'impression



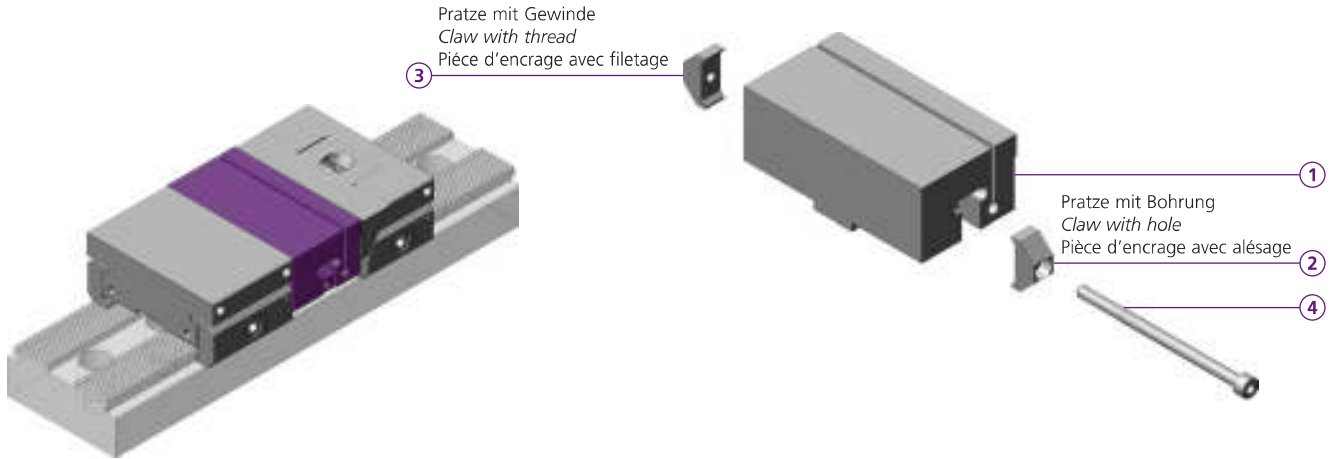
PC 4834 DS		34	48	7x6 = 42			0,16
PC 4349 DS		49	43	6x6 = 36			0,20
PC 4849 DS		49	48	5x8 = 40			0,21



PC 9434 V120°	56HRC	34	min ø 8 max ø 158				0,61
PC 9449 V120°	56HRC	49	min ø 8 max ø 158				0,88



PC 9434 DS		34	94	10x5,8 = 85			0,25
PC 9449 DS		49	94	10x5,8 = 85			0,36
PC 12549 DS		49	125	13x8,5 = 110,5			0,47

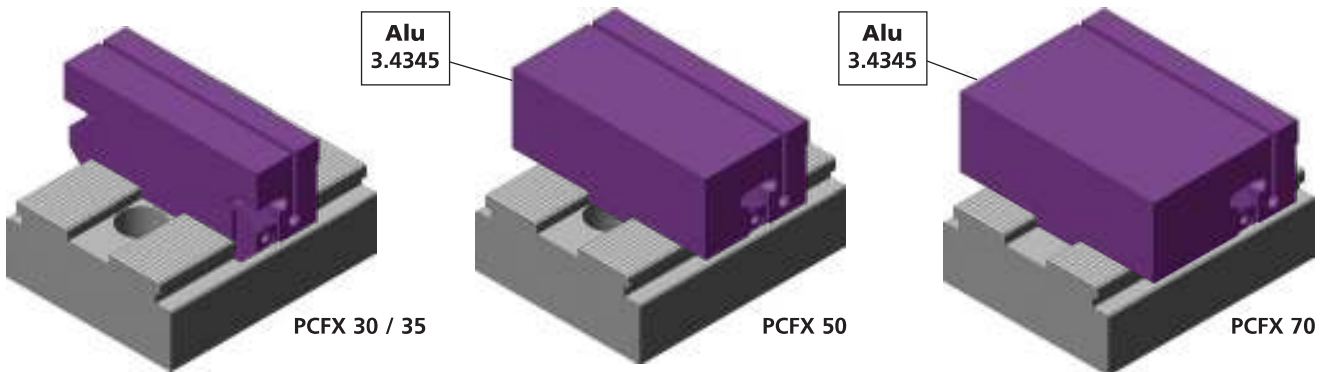


PCFX 30	
①	1x PCFX-30
②	1x PCSP 10B
③	1x PCSP 10G
④	1x M5x85 DIN 912
kg	0,26

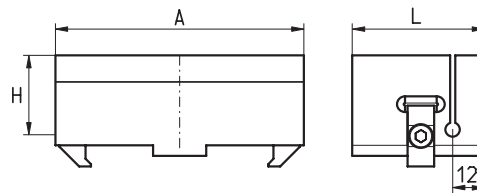
PCFX 35	
①	1x PCFX-35
②	1x PCSP 10B
③	1x PCSP 10G
④	1x M5x85 DIN 912
kg	0,30

PCFX 50	
①	1x PCFX-50
②	1x PCSP 10B
③	1x PCSP 10G
④	1x M5x85 DIN 912
kg	0,44

PCFX 70	
①	1x PCFX-70
②	1x PCSP 10B
③	1x PCSP 10G
④	1x M5x85 DIN 912
kg	0,62

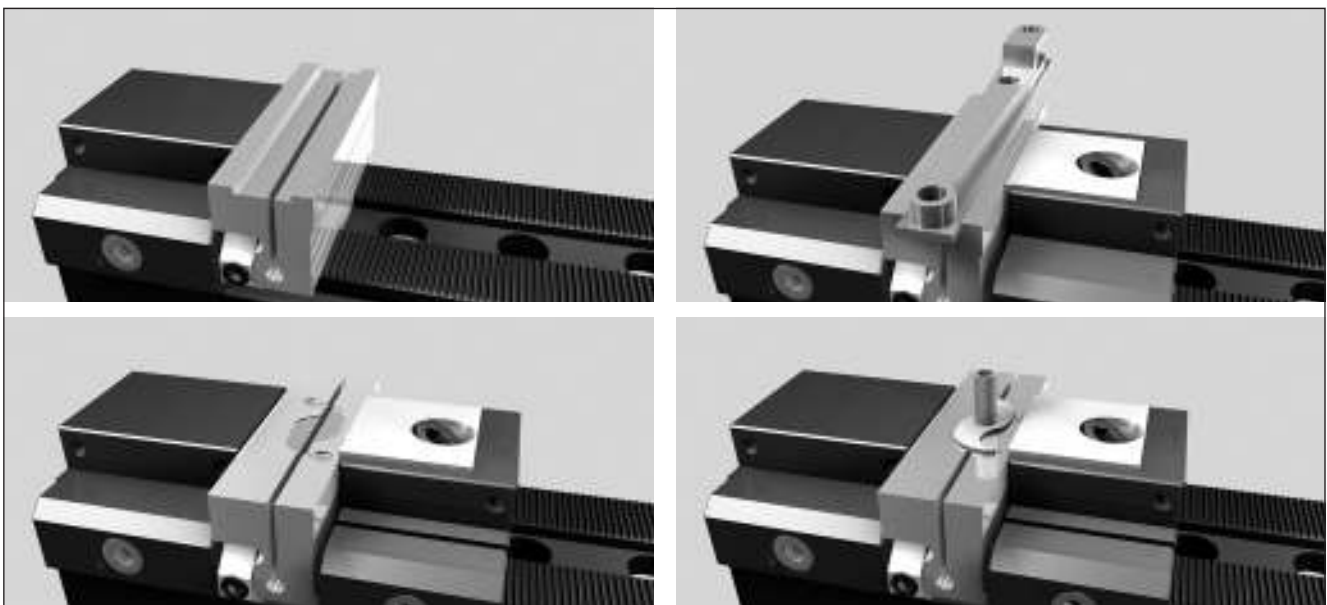


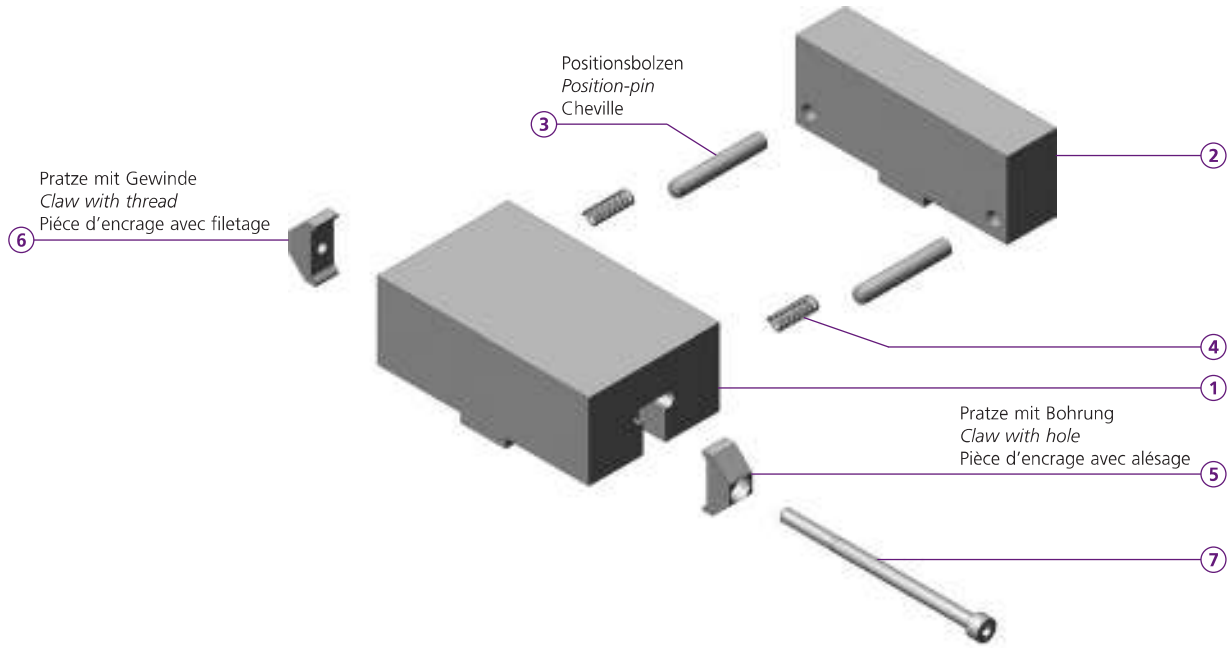
	A	L	H
PCFX 30	94	30	34
PCFX 35	94	35	34
PCFX 50	94	50	34
PCFX 70	94	70	34



auf Anfrage in Stahl
on request also in steel
on demande on acier

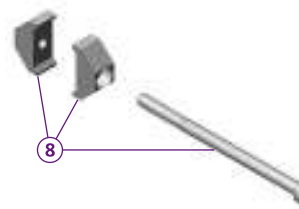
Bestellbeispiel / ordering example / exemple de commande: PCFX 30



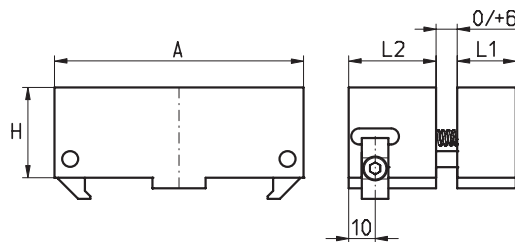


PCFM 33-22	
①	1x PCFM 33
②	1x PCFF 22
③	2x CCBO 0801
④	2x FED 0618
⑤	1x PCSP 10B
⑥	1x PCSP 10G
⑦	1x M5x85 D912
kg	0,52

PCSP10SET	
⑧	1x PCSP10SET



PCFM 58-22	
①	1x PCFM 58
②	1x PCFF 22
③	2x CCBO 0801
④	2x FED 0618
⑤	1x PCSP 10B
⑥	1x PCSP 10G
⑦	1x M5x85 D912
kg	0,74



	PCFM 33-22	A	L1	L2	H
①	1x PCFM 33	94		33	34
②	1x PCFF 22	94	22		34

	PCFM 58-22	A	L1	L2	H
①	1x PCFM 58	94		58	34
②	1x PCFF 22	94	22		34

Bestellbeispiel / ordering example / exemple de commande: PCFM 33-22

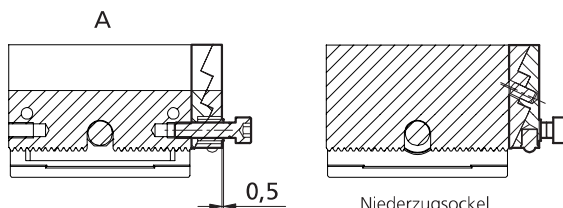
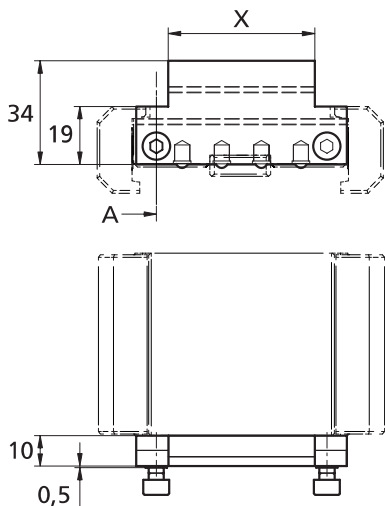
Niederzugbacke für Anschlagseite

Pull down jaws for solid reference face

Mors plaquant sur la face solid

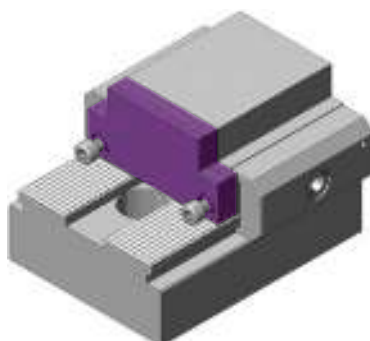
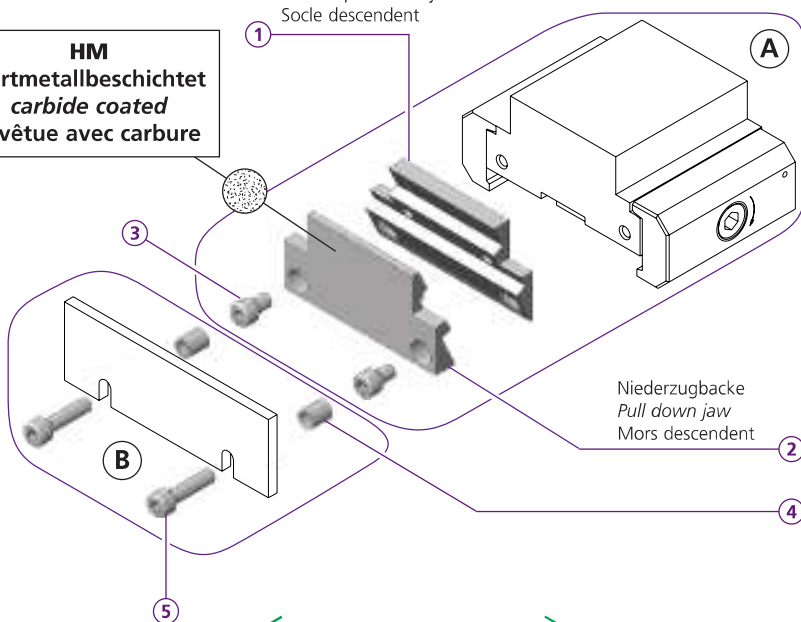


powerCLAMP



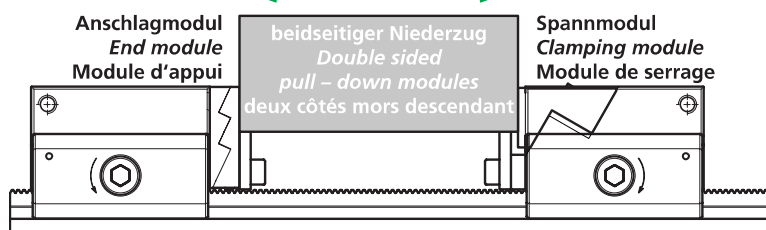
Niederzugssocket
Base to pull down jaw
Socle descendant

HM
Hartmetallbeschichtet
carbide coated
revêtue avec carbure



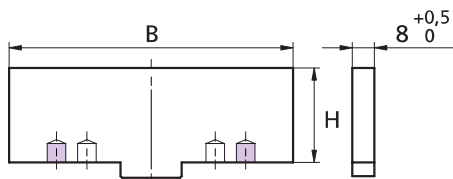
PC 4834 N	
①	1x PC 4834 NSL
②	1x PC 4834 NB1
③	2x M5x8 ISO 4762
④	2x PCD 008
⑤	2x M5x20 ISO 4762
X	48
kg	0,17

PC 9434 N	
①	1x PC 9434 NSL
②	1x PC 9434 NB1
③	2x M5x8 ISO 4762
④	2x PCD 008
⑤	2x M5x20 ISO 4762
X	94
kg	0,22



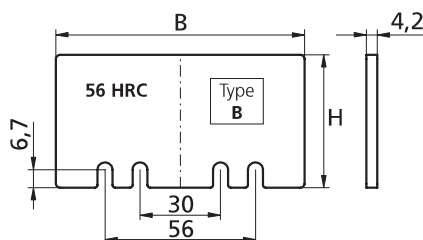
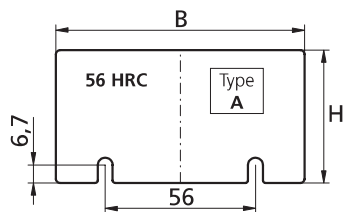
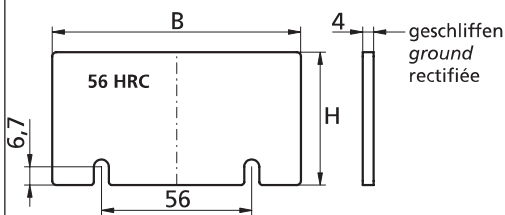
Bestellbeispiel / ordering example / exemple de commande: PC 4834 N

Magnetunterlage
Magnetic base
Cale magnétique



H	PCUM	B	H	PCUM	B
14	PCUM 1409308	93	34	PCUM 3409308	93
20	PCUM 2009308	93	39	PCUM 3909308	93
24	PCUM 2409308	93	44	PCUM 4409308	93
29	PCUM 2909308	93	46	PCUM 4609308	93
31	PCUM 3109308	93			

Anschlagbacke flach
Jaw flat stop
Plaqué d'appui lisse



Unterlagen gehärtet und geschliffen
Parallels hardened and ground
Cales trempés et rectifiées

H	Module 93mm	B
34	PCUD 34093TG	93
49	PCUD 49093TG	93

H	Module 94mm	B	Type
14	PCUD 14093	93	A
20	PCUD 20093	93	A
24	PCUD 24093	93	A
29	PCUD 29093	93	A
31	PCUD 31093	93	B
34	PCUD 34093	93	A
39	PCUD 39093	93	A
44	PCUD 44093	93	A
46	PCUD 46093	93	B
47	PCUD 47093	93	A

Parallelunterlage (Nitriert)

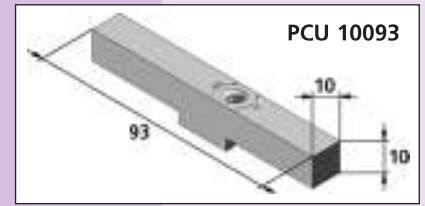
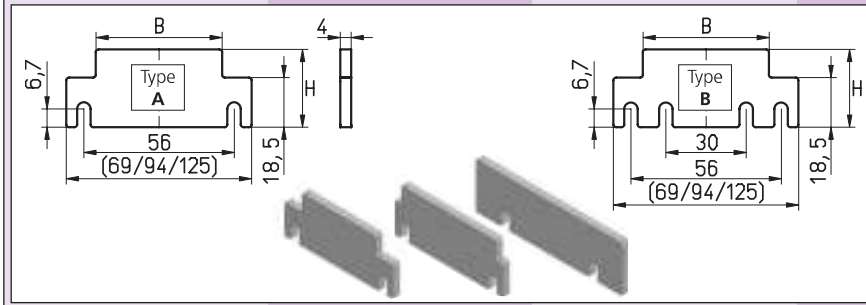
Parallel base (nitrided)

Cales parallèles (nitruré)

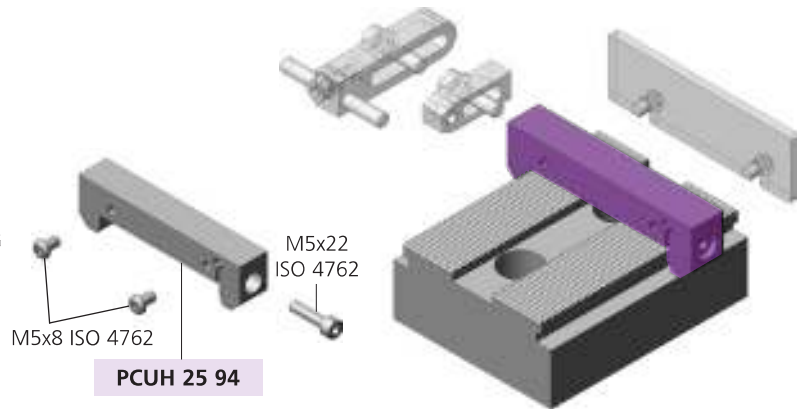
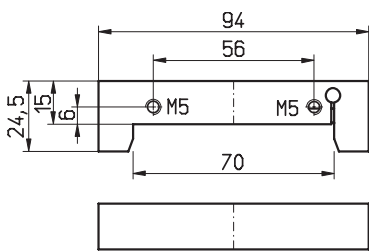


powerCLAMP

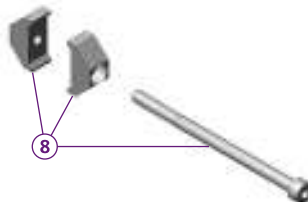
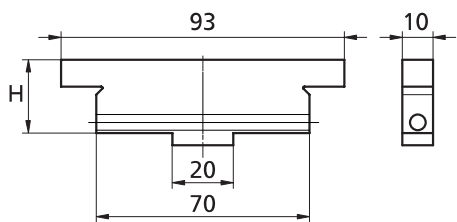
H	Module	B	H	Module	B	H	Module	B	Type	H	Module	B	Type
20	PCU 20018	18	20	PCU 20033	33	20	PCU 20047	47	A	20	PCU 20060	60	A
24	PCU 24018	18	24	PCU 24033	33	24	PCU 24047	47	A	24	PCU 24060	60	A
29	PCU 29018	18	29	PCU 29033	33	29	PCU 29047	47	A	29	PCU 29060	60	A
31	PCU 31018	18	31	PCU 31033	33	31	PCU 31047	47	B	31	PCU 31060	60	A
34	PCU 34018	18	34	PCU 34033	33	34	PCU 34047	47	A	H Module 68mm B			
39	PCU 39018	18	39	PCU 39033	33	39	PCU 39047	47	A	20	PCU 20067	67	A
44	PCU 44018	18	44	PCU 44033	33	44	PCU 44047	47	A	24	PCU 24067	67	A
46,5	PCU 46518	18	46,5	PCU 46533	33	46	PCU 46047	47	B	29	PCU 29067	67	A
H Module 26mm B			H Module 43mm B			H Module 58mm B				31	PCU 31067	67	A
20	PCU 20025	25	20	PCU 20042	42	20	PCU 20057	57		H Module 78mm B			
24	PCU 24025	25	24	PCU 24042	42	24	PCU 24057	57		20	PCU 20077	77	A
29	PCU 29025	25	29	PCU 29042	42	29	PCU 29057	57		24	PCU 24077	77	A
31	PCU 31025	25	31	PCU 31042	42	31	PCU 31057	57		29	PCU 29077	77	A
34	PCU 34025	25	34	PCU 34042	42	34	PCU 31077	77		34	PCU 34077	77	A
39	PCU 39025	25	39	PCU 39042	42	39	PCU 39077	77		39	PCU 39077	77	A
44	PCU 44025	25	44	PCU 44042	42	44	PCU 44077	77		44	PCU 44077	77	A
46,5	PCU 46525	25	46	PCU 46042	42	46				H Module 125mm B			
			47	PCU 47042	42					20	PCU 20124	124	A
										24	PCU 24124	124	A
										29	PCU 29124	124	A
										31	PCU 31124	124	A
										34	PCU 34124	124	A
										39	PCU 39124	124	A
										44	PCU 44124	124	A
										46	PCU 46124	124	A



Unterlagen- und Fräsanschlaghalter Holder for parallels and workpiece stop Cale et support pour butée de fraisage



PCUH 25 94



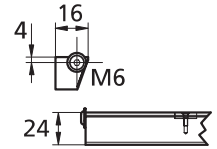
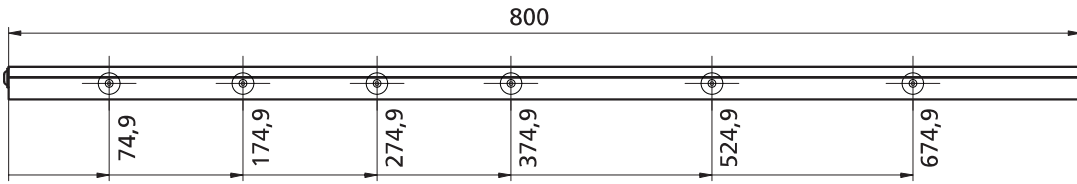
PCSP10SET

8 1x PCSP10SET

weich soft doux	1.5752	hart hardened dur	1.5752
H +0.15 +0.25		H ± 0.005	
PCU 24093B10-W	24	PCU 24093B10	24
PCU 29093B10-W	29	PCU 29093B10	29
PCU 31093B10-W	31	PCU 31093B10	31
PCU 34093B10-W	34	PCU 34093B10	34
PCU 39093B10-W	39	PCU 39093B10	39
PCU 44093B10-W	44	PCU 44093B10	44
PCU 46093B10-W	46	PCU 46093B10	46

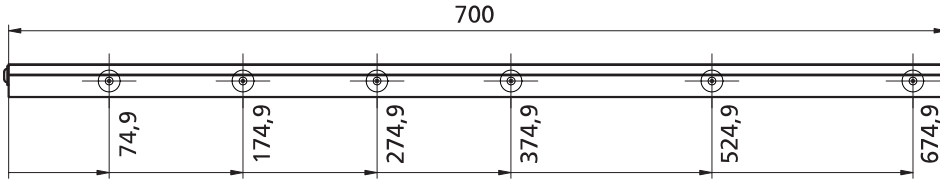
Einstellmasstab
Measuring device
Règle graduée pour le réglage

Zubehör
Accessories
Accessoires

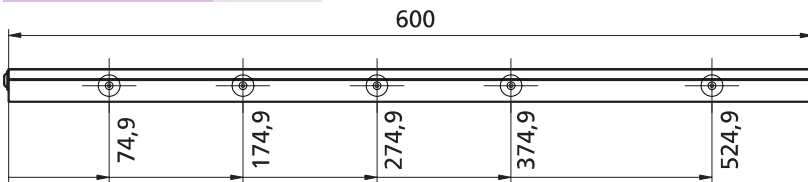


PC MAS 800 ML kg 1,0

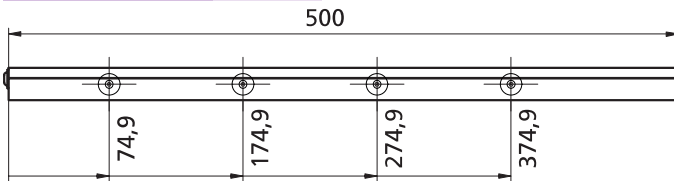
***PC MAS 800 NM** kg 1,0 * Masstab ohne Magnete / scale without magnets / règle sans aimants



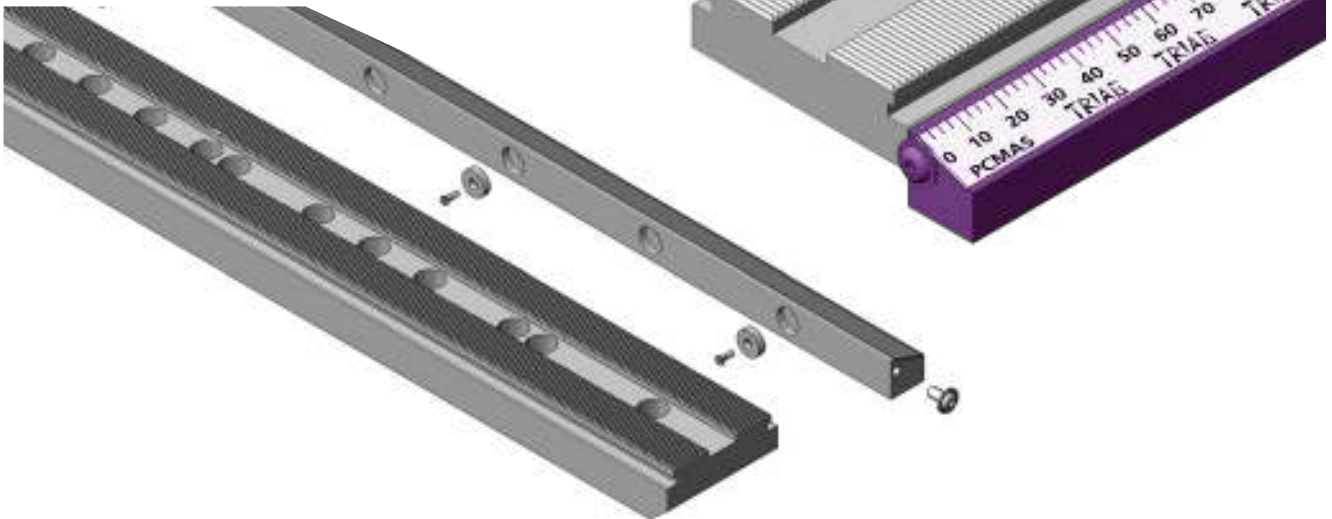
PC MAS 700 ML kg 0,88



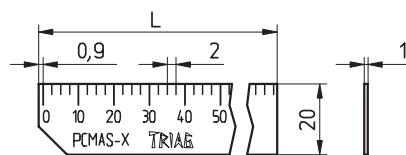
PC MAS 600 ML kg 0,75



PC MAS 500 ML kg 0,63



Bestellbeispiel / ordering example / exemple de commande: PC MAS 800 ML



Magnetmasstab	PC MAS 350
	PC MAS 400
	PC MAS 450
	PC MAS 500
	PC MAS 550
	PC MAS 600
	PC MAS 650
	PC MAS 700
	PC MAS 750
	PC MAS 800
PC MAS	LASER

Bestellbeispiel / ordering example / exemple de commande: PC MAS 350

Magnetanschlag

Magnetic milling buffer

Butée magnétique

Zubehör

Accessories

Accessoires



powerCLAMP



Die einfache Platzierung ermöglicht schnelles Montieren und wieder Entfernen auch auf der 5-Achsen-Maschine!

Easy positioning makes quick mounting and lifting possible also on five axes machines!

Le placement simple, l'ajustement rapide et vite rangée, également sur des machines à 5 axes!

Die 3 Sicherheitsstufen:

Durch seine **rote Farbe** ist der Anschlag besser sichtbar, was das Risiko vermindert, dass er in der Maschine vergessen wird.

Die **Bohrung** dient zum Befestigen einer Schnur am Handgelenk oder ausserhalb der Maschine.

Dank dem **Magnet** ist der Anschlag auf allen magnetischen Materialien auf minimalem Platz einsetzbar, bei Kollision wird er weggedrückt. Es entstehen so keine teuren Werkzeugbrüche oder Maschinendefekte.

The 3 safety levels:

Because of its **red color**, the buffer is better visible. So the risk of forgetting the device in the machine is diminished.

The **drilling** serves to fasten a cord around the wrist or outside the machine.

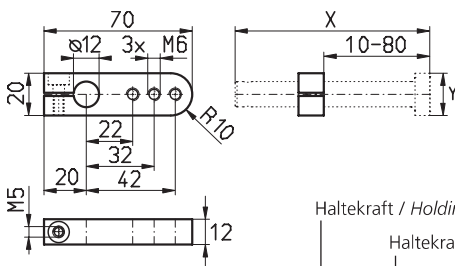
Its **magnet** makes the buffer applicable on all magnetic materials on minimum space, in case of collision it gets pressed away, so there won't be any expensive breaking of tools or machines.

Les 3 points de sécurité:

De **couleur rouge**, la butée est clairement visible. C'est pourquoi le risque de l'oublier dans la machine est diminué.

Le **perçage** sert à fixer une ficelle au poignet ou à l'extérieur de la machine.

Grâce à **l'aimant**, la butée peut être posée rapidement sur toutes les pièces métalliques avec un besoin de place minimum. En cas de collision elle est éjectée. Donc pas de dégâts coûteux à votre machine et à vos outils.



Haltekraft / Holding force / Force de retenue: 45N = 4,5daN (~4,5 kg)

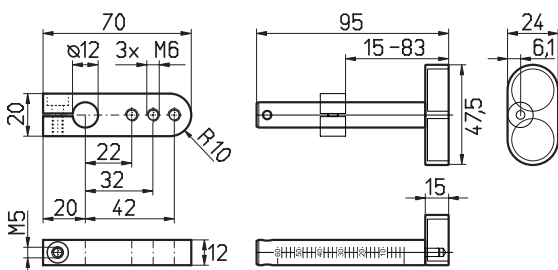
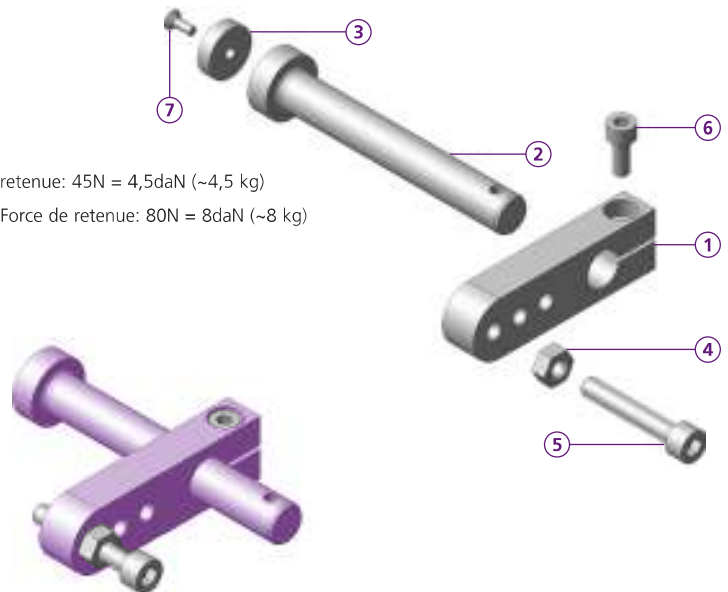
Haltekraft / Holding force / Force de retenue: 80N = 8daN (~8 kg)

FA UM 2070

- ① 1x FA 2070
- ② 1x FAD 2092
- ③ 1x MG 1645
- ④ 1x M6 ISO 4032
- ⑤ 1x M6x35 ISO 4762
- ⑥ 1x M5x14 ISO 4762
- ⑦ 1x M3x8 ISO 10642
- X 92
- Y Ø 20

FA UM 2070 S

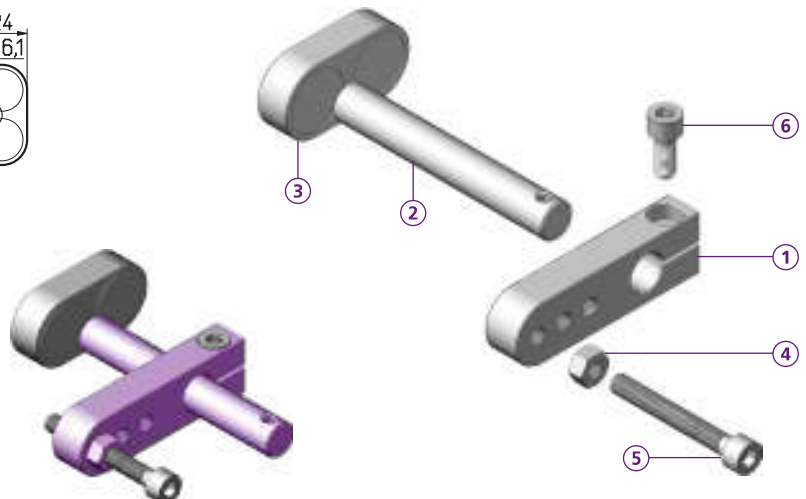
- ① 1x FA 2070
- ② 1x FAD 2092 S
- ③ 1x MG 2570
- ④ 1x M6 ISO 4032
- ⑤ 1x M6x35 ISO 4762
- ⑥ 1x M5x14 ISO 4762
- ⑦ 1x M5x16 ISO 10642
- X 95
- Y Ø 25



FA UM 2070 US

- ① 1x FA 2070
- ② 1x FAD 1280
- ③ 1x FUSSUS
- ④ 1x M6 ISO 4032
- ⑤ 1x M6x35 ISO 4762
- ⑥ 1x M5x14 ISO 4762

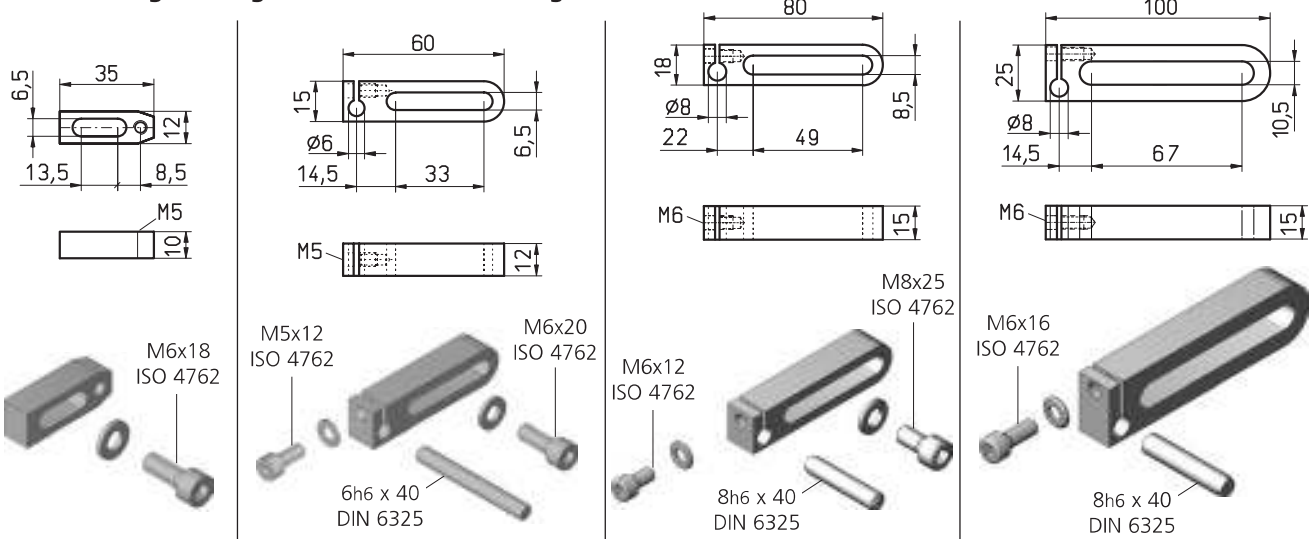
Haltekraft / Holding force / Force de retenue: 120N = 12daN (~12 kg)



Bestellbeispiel
ordering example
exemple de commande: FA UM 2070 US



Fräsanschlag / Milling buffer / Butée de fraisage



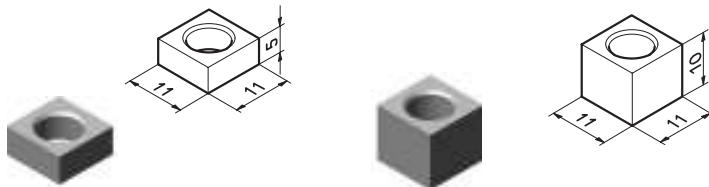
FA 1240

FA 1260

FA 1280

FA 12100

**Distanzbüchse zu Fräsanschlag
Spacers for workpiece stop
Douille d'écartement pour butée de fraisage**



CCD 005

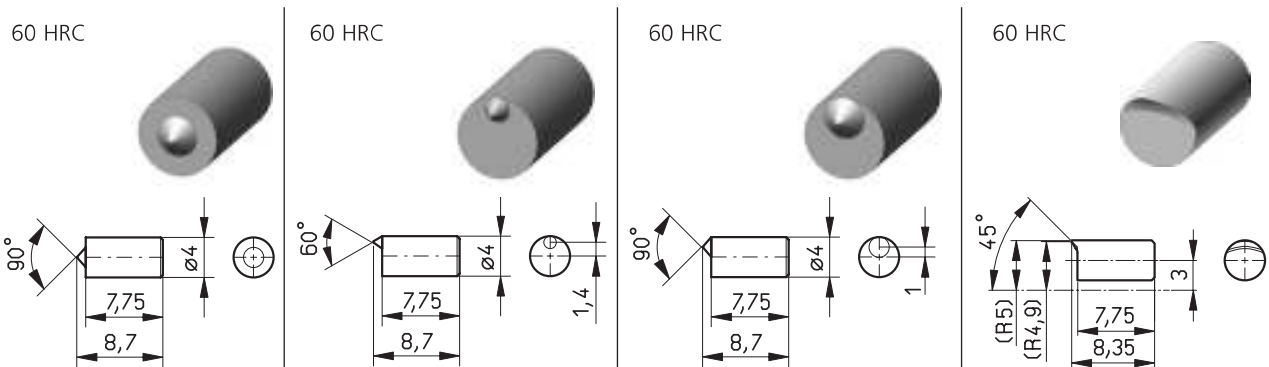
CCD 010

**Positionierstift (spreizbar)
locating pin (expandable)
goupille d'arrêt (extensible)**



CCBX 0802

Druckstift / Gripping pins / Pièce de pression



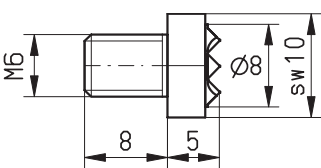
DS 0402-90°

DSE 0402-60°

DSE 0402-90°

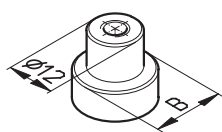
DSE 0402-BS

**Hartmetalldruckstück
Carbide gripper
Pièce de pression en métal dur**



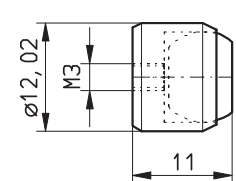
CCHMR

**T-Nutenadapter
T-Slot adapter
T-Adaptateur de rainure**



	B
TW ADAPT 10	10
TW ADAPT 12	12
TW ADAPT 14	14
TW ADAPT 16	16
TW ADAPT 18	18
TW ADAPT 20	20
TW ADAPT 22	22

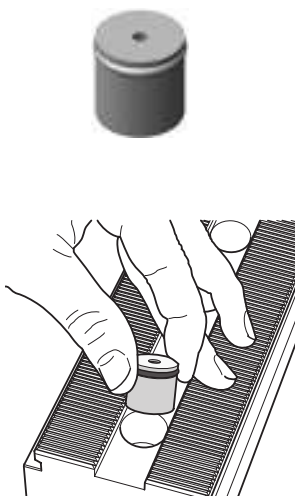
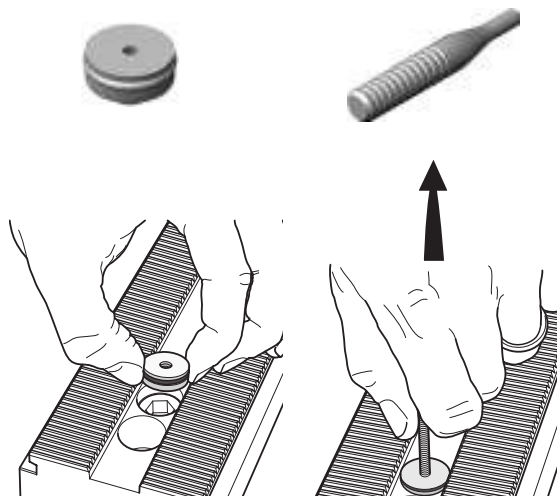
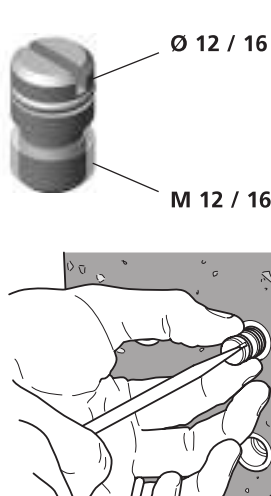
**Kugeldruckstück
Gripper
Pièce de bille de pression**


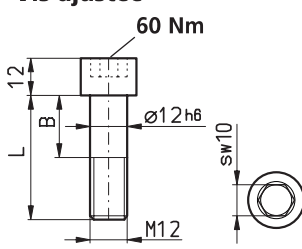
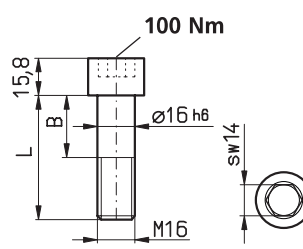


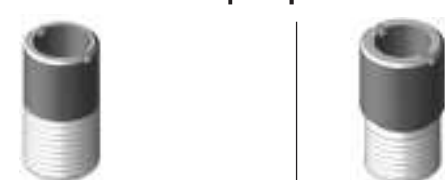

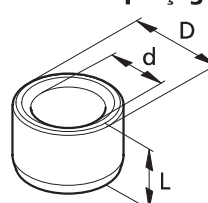
CCPD


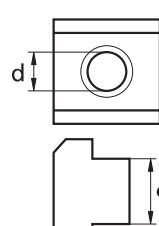
CCPDR



<p>Schutzkappe <i>Shut plug</i> Bouchon de protection</p> 	<p>Auszieher <i>Extractor</i> Extracteur</p> 	<p>Verschlusspfropfen <i>Shut plug</i> Bouchon d'étanchéité</p>  <p>Ø 12 / 16 M 12 / 16</p>	
PCPF 16L18 Alu	PCPF 16L6 Alu	PCAZ M3	CCPF 12 Alu / CCPF 16 Alu

<p>Spannschraube (Nitriert) <i>Clamping screw</i> (nitrided) Vis de serrage (nituré)</p> 	<p>Passschraube <i>Fitting screw</i> Vis ajustée</p> <p>M12</p>  <p>60 Nm</p> <p>12 L B ø12 h6 M12 sw10</p>	<p>M16</p>  <p>100 Nm</p> <p>15,8 L B ø16 h6 M16 sw14</p>	
M8x20 ISO 4762 NQ M10x20 ISO 4762 NQ	TW PAS 1240 TW PAS 1232 TW PAS 1227	L B 40 20 32 19 27 14	TW PAS 16055 L B 55 30

<p>Reduktionshülse für Rasterplatte <i>Reduction sleeve for grid plate</i> Douille de réduction pour plateau avec réseau</p> 	<p>Bohrbüchse <i>Position case</i> Guide de perçage fixe</p>   <p>D d L</p> <table border="1"> <thead> <tr> <th></th> <th>L</th> <th>D</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>CC BUE 12 18 12</td> <td>12</td> <td>18,0</td> <td>12,0</td> </tr> <tr> <td>CC BUE 12 185 12</td> <td>12</td> <td>18,5</td> <td>12,0</td> </tr> <tr> <td>CC BUE 12 19 12</td> <td>12</td> <td>19,0</td> <td>12,0</td> </tr> <tr> <td>CC BUE 16 26 16</td> <td>16</td> <td>26,0</td> <td>16,0</td> </tr> </tbody> </table>		L	D	d	CC BUE 12 18 12	12	18,0	12,0	CC BUE 12 185 12	12	18,5	12,0	CC BUE 12 19 12	12	19,0	12,0	CC BUE 16 26 16	16	26,0	16,0
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CC BUE 16 26 16	16	26,0	16,0																		
RD16 M1612 M12	RD18 M1612 M12																				

<p>T-Nuten Steine <i>T-nuts</i> Tasseau à T</p>   <p>d α</p>	<table border="1"> <thead> <tr> <th></th> <th>d</th> <th>α</th> <th></th> <th>d</th> <th>α</th> </tr> </thead> <tbody> <tr> <td>SM1135</td> <td>M06 x 08</td> <td></td> <td>SM1135</td> <td>M12 x 22</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M06 x 10</td> <td></td> <td>SM1135</td> <td>M14 x 16</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M08 x 10</td> <td></td> <td>SM1135</td> <td>M14 x 18</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M08 x 12</td> <td></td> <td>SM1135</td> <td>M16 x 18</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M08 x 14</td> <td></td> <td>SM1135</td> <td>M16 x 20</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M10 x 12</td> <td></td> <td>SM1135</td> <td>M18 x 20</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M10 x 14</td> <td></td> <td>SM1135</td> <td>M18 x 22</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M12 x 14</td> <td></td> <td>SM1135</td> <td>M20 x 22</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M12 x 16</td> <td></td> <td>SM1135</td> <td>M20 x 24</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M12 x 18</td> <td></td> <td>SM1135</td> <td>M24 x 28</td> <td></td> </tr> <tr> <td>SM1135</td> <td>M12 x 20</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		d	α		d	α	SM1135	M06 x 08		SM1135	M12 x 22		SM1135	M06 x 10		SM1135	M14 x 16		SM1135	M08 x 10		SM1135	M14 x 18		SM1135	M08 x 12		SM1135	M16 x 18		SM1135	M08 x 14		SM1135	M16 x 20		SM1135	M10 x 12		SM1135	M18 x 20		SM1135	M10 x 14		SM1135	M18 x 22		SM1135	M12 x 14		SM1135	M20 x 22		SM1135	M12 x 16		SM1135	M20 x 24		SM1135	M12 x 18		SM1135	M24 x 28		SM1135	M12 x 20				
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Pneumatikschrauber Set
Pneumatic screwdrivers set
Set tournevis pneumatique



Drehmomenttabelle Torque table Table de couple	Druck Compression Pression	Nm
(Schlauchdurchmesser 8 mm Luftverbrauch 2,5 L Sek)	6	50
	5,5	45
(Hose diameters 8 mm Air consumption 2,5 L sec)	5	40
	4,5	35
	4	30
(Diamètre du tuyau 8 mm Consommation d'air 2,5 sec)	3,5	25
	3	20

RP9431 SET	
①	1x P1H-200-M3QG
②	1x 10 300 3152 (SERIE 300) 1/4"
③	1x 19 958 9977 (5x8mm, 300, 2 m)
④	1x RP9431

Spannschlüssel
Clamping wrench
Clé de serrage



- 026 - 13160 - 4
- 026 - 13164 - 5
- 026 - 13168 - 6
- 026 - 13172 - 8
- 026 - 13176 - 10

Drehmomentschlüssel
Torque wrench
Clé dynamométrique

SL0	4-20 Nm (1/4")	TX 30E14
SL1	8-50 Nm (3/8")	
(L) lang (L) long (L) long	(LK) lang mit Kugelkopf (LK) long with ball head (LK) long avec tête sphérique	für / for / pour PCZ 100L50
Nuss 1/4"	4 mm 5 mm 6 mm 8 mm	Torx T
Nuss 3/8"	5 mm / L / LK 6 mm / L / LK 8 mm / L / LK 10 mm / L / LK	Nuss 3/8" 30

Messingdrahtbürste
Brass wire brush
Brosse en fil de laiton



PCMB 4