

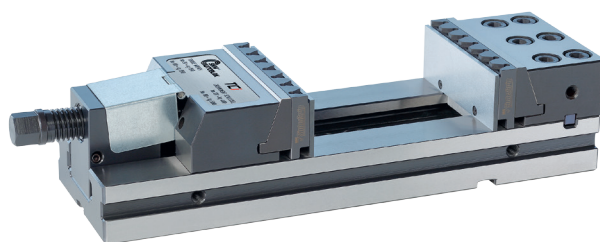


COPY OF THE ORIGINAL

INSTRUCTION MANUAL

PRECISION BENCH VICE

Type TCI

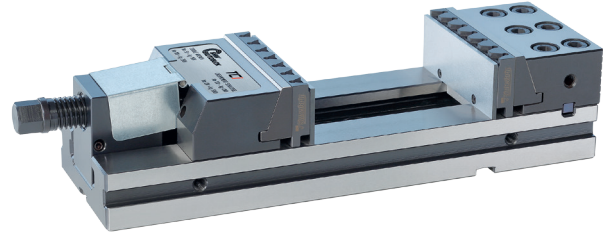


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Language: English (English)



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INSTRUCTION MANUAL

Precision Bench Vice

Type TCI

Thank you for purchasing an Original-SMW-AUTOBLOK precision bench vices type TCI.

This **instruction manual** contains the installation, the use and the maintenance instructions of the work holding „TCI“.

SMW-AUTOBLOK reserves the right to make **changes without notice**.

This **instruction manual is a part of the work holding** and must be passed to the new owner in case of sale.

This **instruction manual may not be** -in whole or in part- **copied** without our written agreement.



Please read the instruction manual carefully before installation and use and always follow the regulations.

Please note especially the sections which are marked with the following signs:



- Danger of injury or danger to life if instructions are not followed.
- Danger of damage to the work holding, the machine or the components.



Declaration of incorporation for an incomplete machine Machinery Directive 2006/42/EC, Annex II, B

The manufacturer: SMW-AUTOBLOK Spannsysteme GmbH
Wiesentalstrasse 28
88074 Meckenbeuren
Deutschland / Germany

herby declares, that the following product:

Product description: Precision Bench Vice
Application range: Installation in machine tool
Type: TCI

is intended to be installed into a completed machine. It must not be put into service until the final machine into which the partly completed machinery it is to be incorporated has been declared in conformity with the provisions of the EU machine directive (2006/42/EC) Annex II, B.

Applied harmonized norms:

- DIN EN 1550 (2008)
- DIN ISO 13857 (2008)

The following basic requirements of Annex I, 2006/42/EC are complied with:

- No. 1, 1.1, 1.1.1, 1.1.2, 1.1.3
- No. 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.3.8
- No. 1.5, 1.6.1
- No. 1.7.1, 1.7.3, 1.7.4













The special technical documents have been created in accordance with Annex VII, Part B. These documents will be made available electronically on a reasoned request by the national authorities.

Responsible for documentation: Schilling Rainer
Chief designer

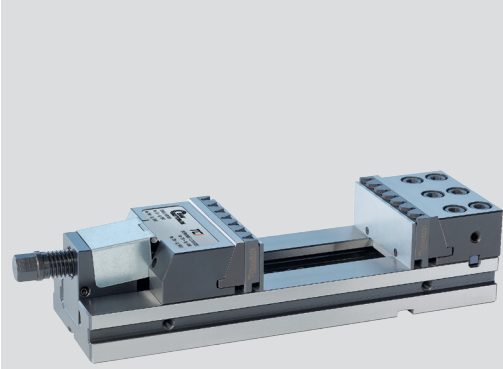
Place: Meckenbeuren (Germany)
Date: 08.06.2016



Eckhard Maurer
President

-  **1. Correct use**
SMW-AUTOBLOK clamping systems work safely and troublefree, if they are used according to their specification i.e. to clamp components on machine tools.
Any other use can cause hazards.
For any damages resulting herefrom SMW-AUTOBLOK is not responsible.
-  **2. Demands on operators**
This SMW-AUTOBLOK product must be installed, operated and maintained only by qualified and regularly trained personnel.
-  **3. Visual inspection**
Please check the product for visible damage prior to use!
-  **4. Transport**
Please use suitable lifting gear for product heavier than 16 kg!
-  **5. Safety precautions**
- Maintenance and actuation must be carried out at stopped machine only.
 - Maintenance and set up work must be carried out in safe areas only.
 - During installing, connecting, adjusting, runoff and testing, it must be ensured, that no accidental actuation of the clamping unit can be carried out by the worker or any other persons.
-  **6. Max. speed**
The clamping unit is intended for stationary use only, and must not be used under rotation!
-  **7. Danger of injury**
- Danger of injury because of missing accessories.
 - When actuating the clamping system there is increased crushing hazard due to the stroke of the moving components of the clamping system.
 - Never reach for the clamping system while the spindle is rotating.
 - Prior to working at the clamping system, make sure, that the spindle cannot be started.
 - Work pieces that are clamped with too low clamping pressure, can be ejected!
 - Excessive clamping pressure can cause damage or breakage of the individual components of the clamping system. Work pieces can be released.
-  **8. Clamping force**
The clamping force of the clamping system can vary, depending on its condition (lubrication and contamination).
The clamping forces have to be verified in regular intervals. Use suitable static grip force gages.
-  **9. Maintenance**
The stationary clamping system has to be maintained in regular intervals. Check the condition by measuring the grip force with a grip force gage. Maintenance must be carried out at stopped machine only.
Replace damaged parts with original SMW-AUTOBLOK spare parts only.
Maintenance must be carried out at stopped machine only!
Insufficient and improper maintenance voids any warranty from SMW-AUTOBLOK.
-  **11. Environment protection**
Danger for environment when handling incorrect!
Incorrect handling of environment hazardous materials, especially the disposal, may result in environmental damage.
- Always follow below instructions.
 - In case environmentally hazardous material polluted the environment always take suitable actions immediately. If in doubt, inform the local authority about the pollution.
- The following hazardous materials are used: Lubricants such as oil and grease can contain poisonous agents. They must not pollute the environment. The disposal must be carried out by a suitable waste management company.
For a proper function of the work holding, use original SMW-AUTOBLOK lubricant only.
-  **For any problems or questions please contact SMW-AUTOBLOK directly or one of our authorized offices.**
-  **ALL REGULATIONS ACCORDING TO THE PREVIOUS POINTS MUST BE OBSERVED. THE USE ON MACHINE TOOLS HOWEVER, ALWAYS CAUSES SOME RESIDUAL RISKS, THAT HAVE TO BE ELIMINATED BY THE USER BY SUITABLE SAFETY ACTIONS.**

- Quick positioning for the jaw
- Pull-down jaws with SinterGrip



Application/customer benefits

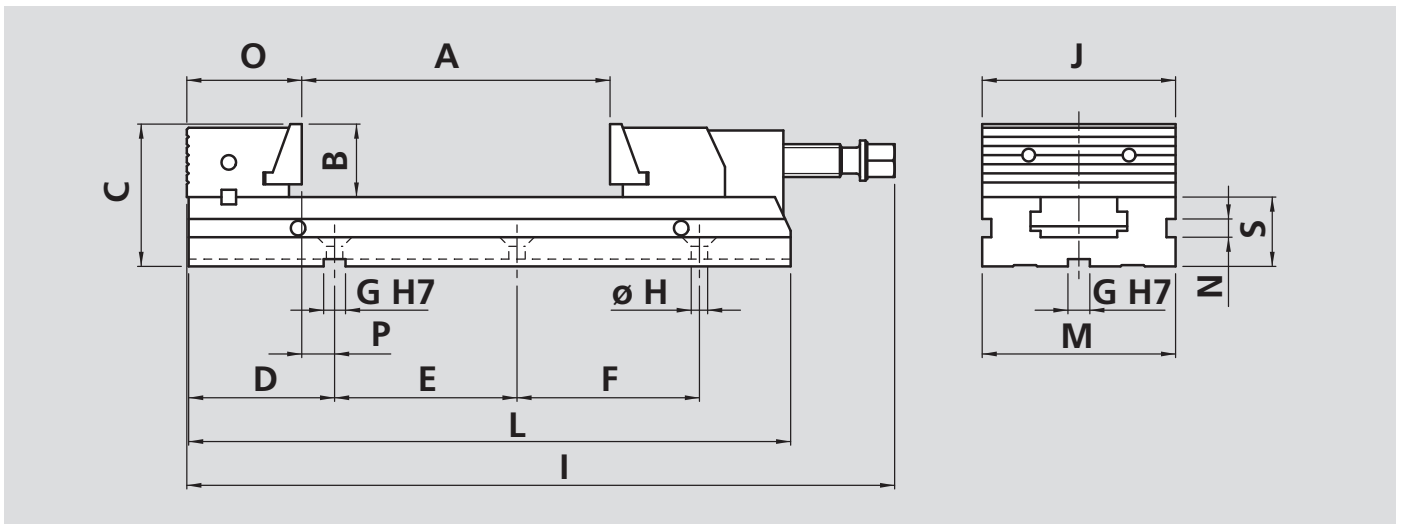
- High precision bench vice
- Quick positioning for the movable jaw
- Pull-down jaws including the possibility to use them without pull down effect for OP 10 operations
- Easy and quick cleaning possible
- Maximum flexibility due to the wide range of accessories

Technical features

- 3 different jaw sizes
- Pull-down jaws (0.2 mm), 180° turned with serrated clamping side for OP 10
- Parallel stripes with quick change „CLAK-System“
- Optional: interface for zero point clamping system APS 140 (on request)

Standard equipment

TCi precision bench vice with clamping wrench, pull-down jaws, jaws for SinterGrip clamping inserts, workstop, protection cover for spindle, parallels with quick change „CLAK-System“, floating slide-ways, transport box



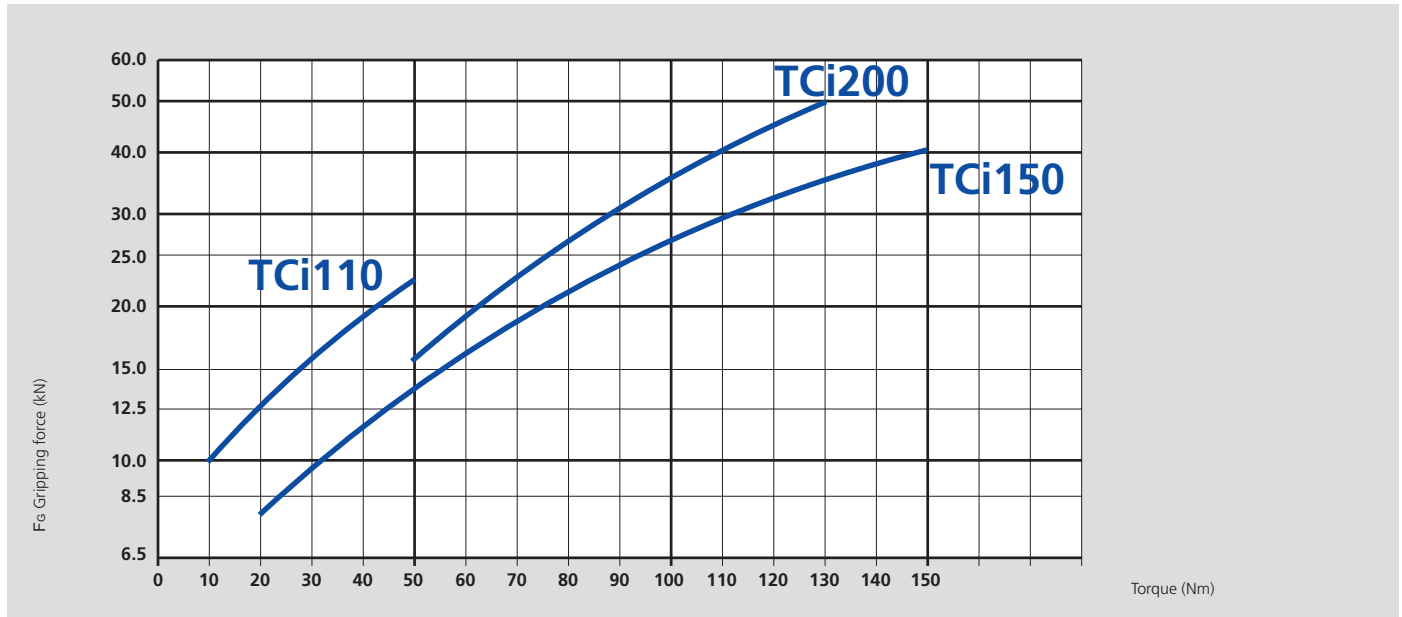
Order review

Type	Id. No.	A	B	C	D	E	F	G	H	I	J	L	M	N	O	P	S	Weight kg
TCi 110x100	465000	100	40	78	80	150	-	12	9	338	110	280	110	10	63	18	38	11.5
TCi 110x150	465001	150	40	78	80	100	100	12	9	388	110	330	110	10	63	18	38	12.5
TCi 150x200	465002	200	50	98	114	200	-	18	12.5	481	150	413	150	13	85	30	48	27
TCi 150x250	465003	250	50	98	114	100	150	18	12.5	531	150	463	150	13	85	30	48	29
TCi 150x300	465004	300	50	98	114	100	100	18	12.5	588	150	520	150	13	85	30	48	31.5
TCi 200x300	465005	300	70	138	149	200	200	18	12.5	697	200	610	200	15.5	123	27	68	78
TCi 200x400	465006	400	70	138	149	150	150	18	12.5	797	200	710	200	15.5	123	27	68	86

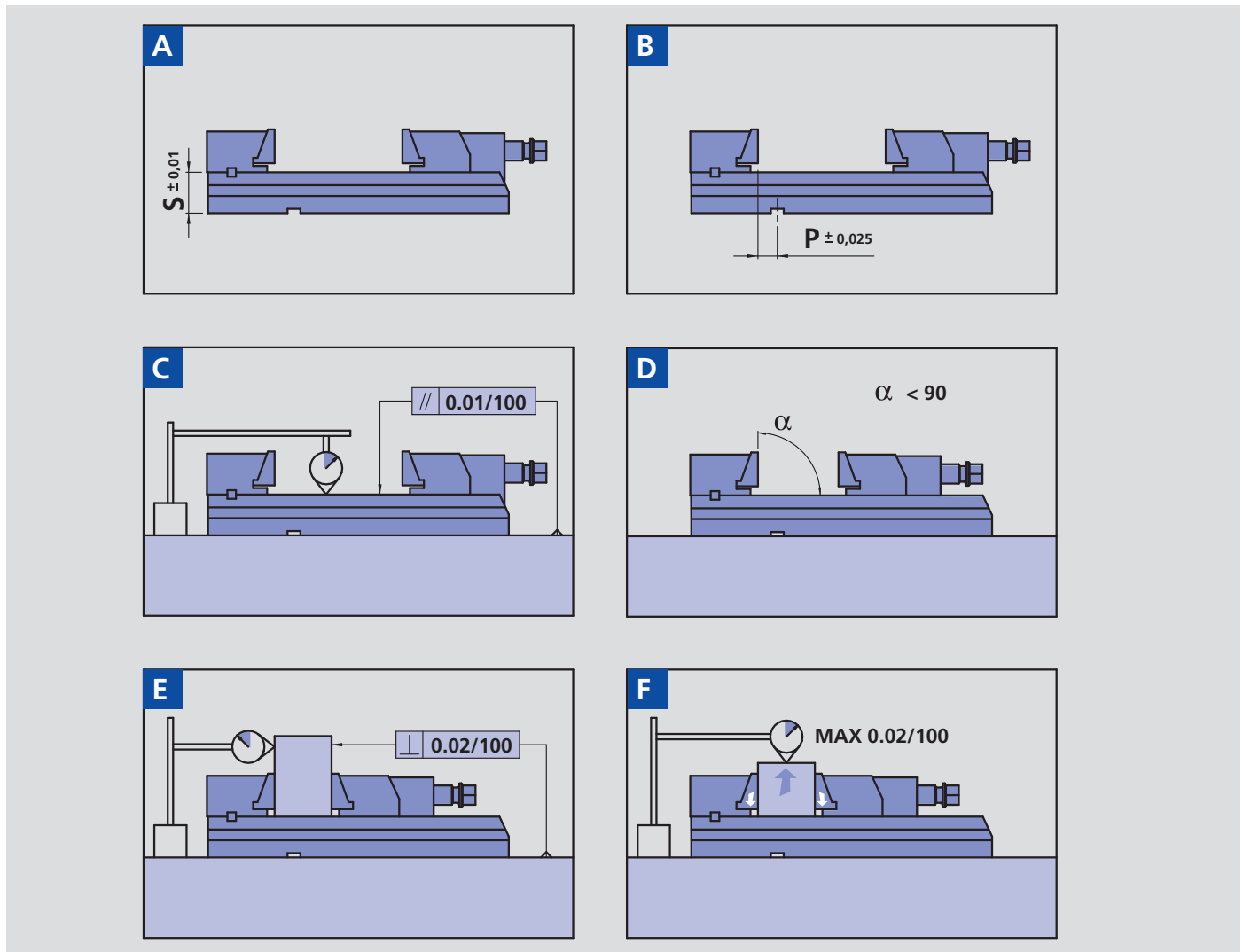
Special sizes on request.

- Quick positioning for the jaw
- Modular system

Clamping force diagram

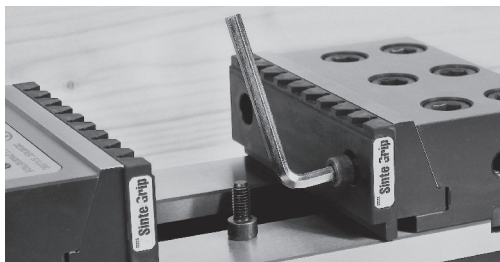


Form-, position- and dimensional tolerances for clamping vices TCI



- Accessories
- Jaws

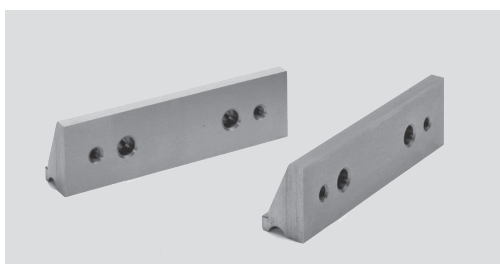
TCi jaws for SinterGrip clamping inserts



Type	Id. No.
TCi 110	465010
TCi 150	465011
TCi 200	465012

consisting of
2 pieces jaws

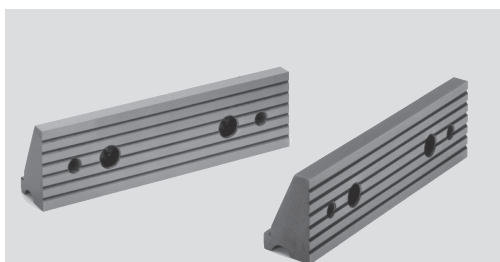
TCi Pull-down jaws smooth



Type	Id. No.
TCi 110	465013
TCi 150	465014
TCi 200	465015

consisting of
2 pieces jaws

TCi Pull-down jaws serrated



Type	Id. No.
TCi 110	465016
TCi 150	465017
TCi 200	465018

consisting of
2 pieces jaws

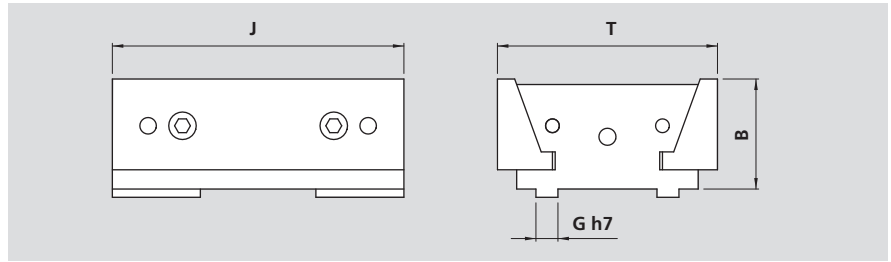
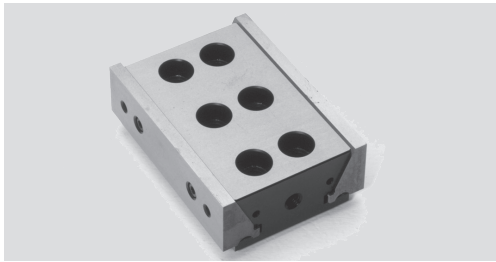
TCi torque wrench



Type	Id. No.
TCi 110	465019
TCi 150	465020
TCi 200	465021

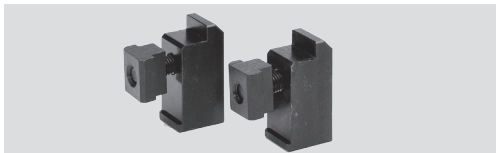
- Accessories
- Mounting

TCi Fixed jaw carrier for double clamping (extension)



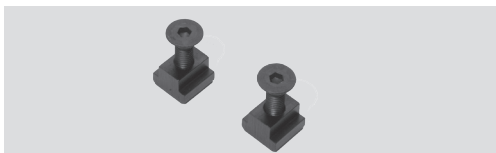
Type	Id. No	B mm	G mm	J mm	T mm	Weight kg
TCi 110	465022	40	8	110	80	2.2
TCi 150	465023	50	12	150	108	5
TCi 200	465024	70	14	200	194	11.6

Clamping claws (1 pair) incl. screw and T-nut



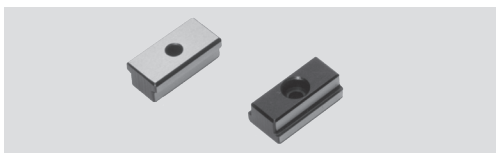
Type	Id. No. / Groove width					
	12 mm	14 mm	16 mm	18 mm	20 mm	22 mm
TCi 110	465025	465026	465027	465028	465029	465030
TCi 150	465031	465032	465033	465034	465035	465036
TCi 200	465037	465038	465039	465040	465041	465042

T-nuts (1 pair) incl. screw



Type	Id. No. / Groove width					
	12 mm	14 mm	16 mm	18 mm	20 mm	22 mm
TCi 110	465043	465044	465045	465046	465047	465048
TCi 150	465049	465050	465051	465052	465053	465054
TCi 200	465055	465056	465057	465058	465059	465060

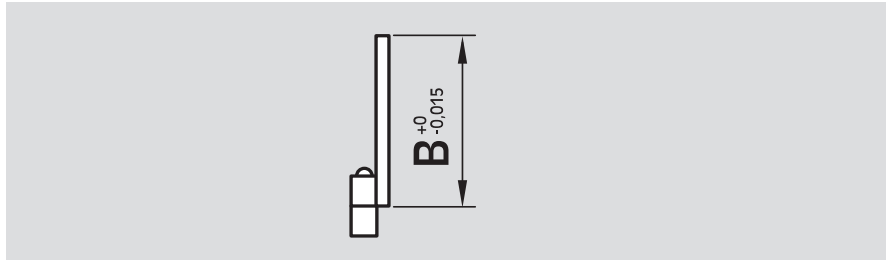
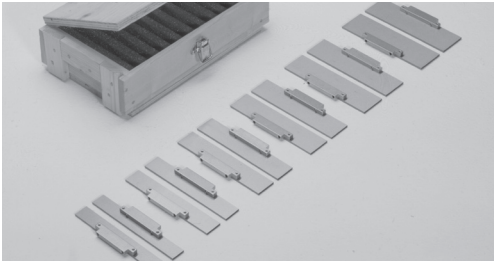
T-nuts (1 pair)



Type	Id. No. / Groove width					
	12h6 mm	14h6 mm	16h6 mm	18h6 mm	20h6 mm	22h6 mm
TCi 110	-	465061	465062	465063	465064	465065
TCi 150	465066	465067	465068	-	465070	465071
TCi 200	465072	465073	465074	-	465076	465077

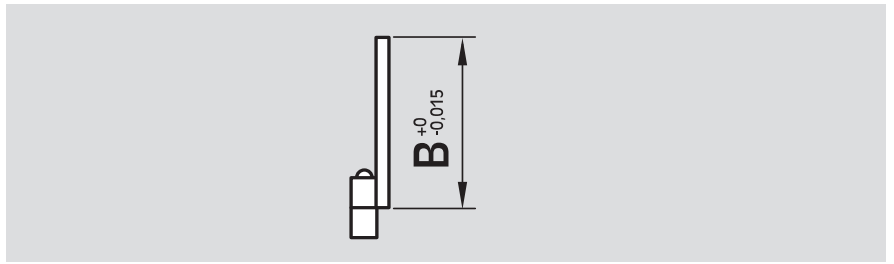
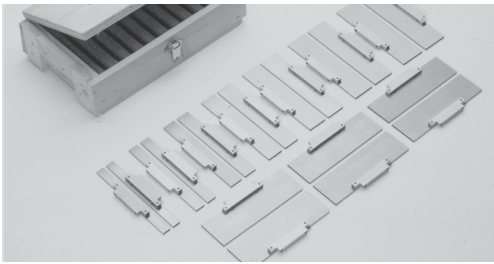
- Accessories
- Parallels for quick change CLAK-System

Set 6 pair of parallels for quick change CLAK-System



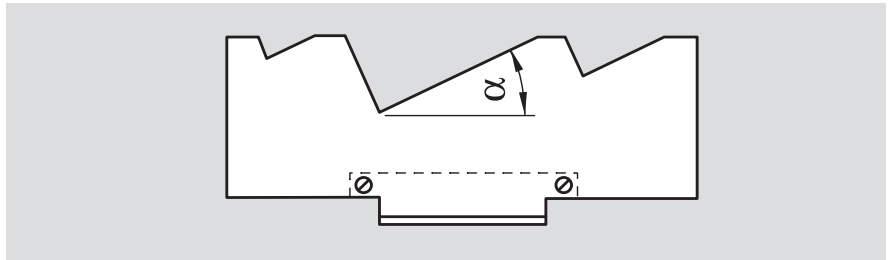
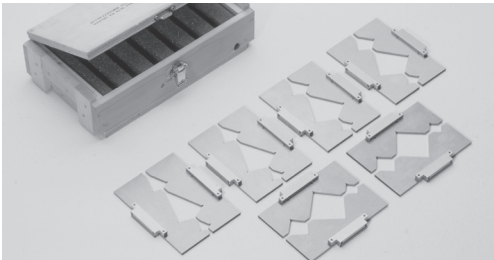
Type	Id. No.	B					
		mm	mm	mm	mm	mm	mm
TCi 110	465080	10	15	20	25	30	35
TCi 150	465081	20	25	30	35	40	45
TCi 200	465082	20	30	40	50	60	65

Set 10 pair parallels for quick change CLAK-System



Type	Id. No.	B										
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
TCi 110	465083	10	12	15	20	25	28	30	33	35	37	
TCi 150	465084	12	15	20	25	30	35	40	43	45	47	
TCi 200	465085	20	25	30	35	40	45	50	55	60	65	

Set 6 pair prisms parallels for quick change CLAK-System

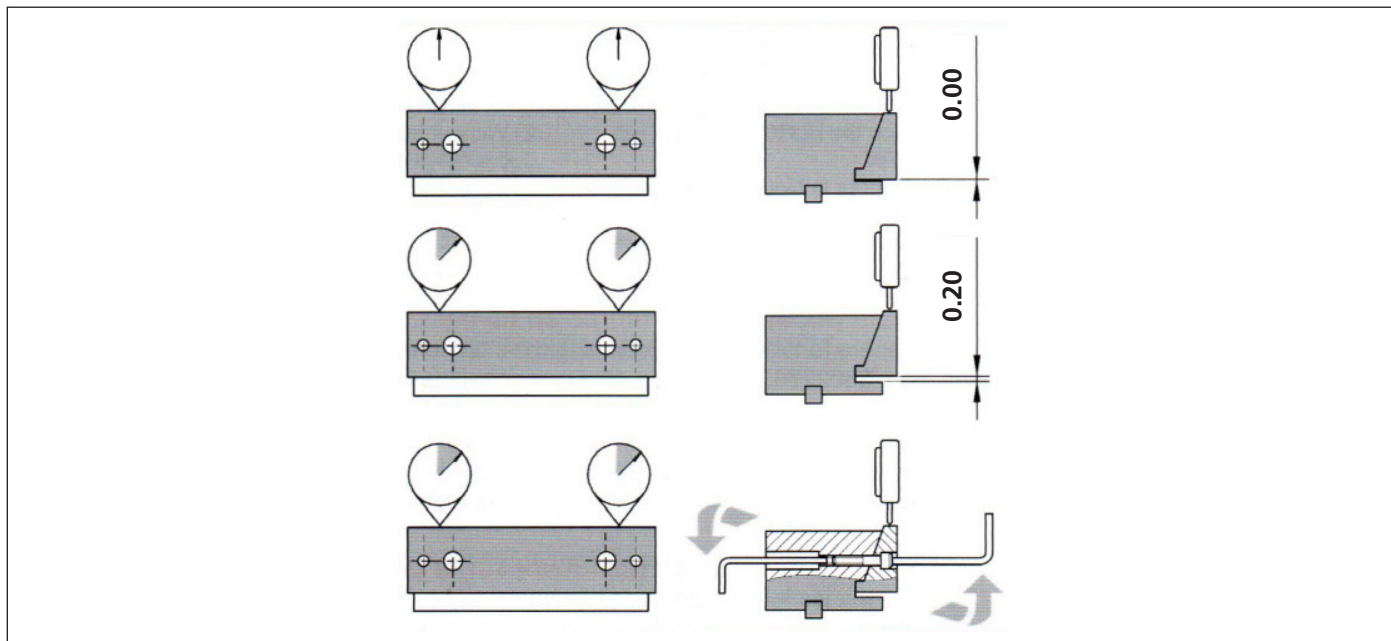


Type	Id. No.	α					
		mm	mm	mm	mm	mm	mm
TCi 110	465086	20°	25°	30°	35°	40°	45°
TCi 150	465087	20°	25°	30°	35°	40°	45°
TCi 200	465088	20°	25°	30°	35°	40°	45°

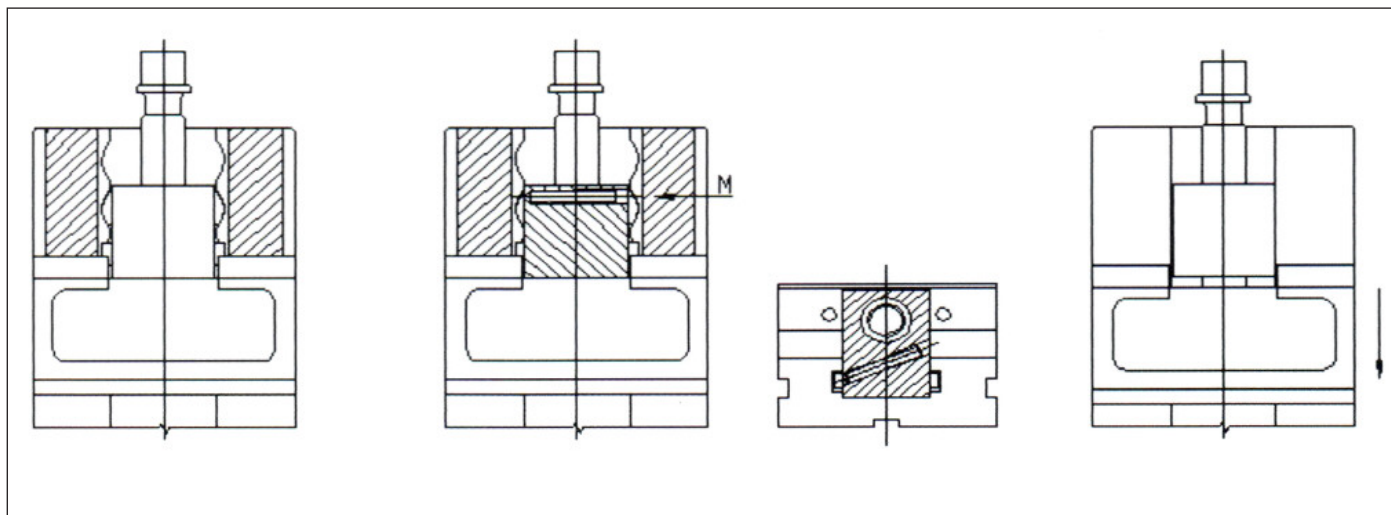
Jaws alignment

When replacing the jaws to ensure good descent movement, proceed as follows:

- Make sure the jaws are fully secured to the support.
- Slacken the adjustment screws until the base is backed off by about 0.2 mm.
- Tighten the lock nuts, located on the back side of the support, in the opposite direction to the adjustment screws.



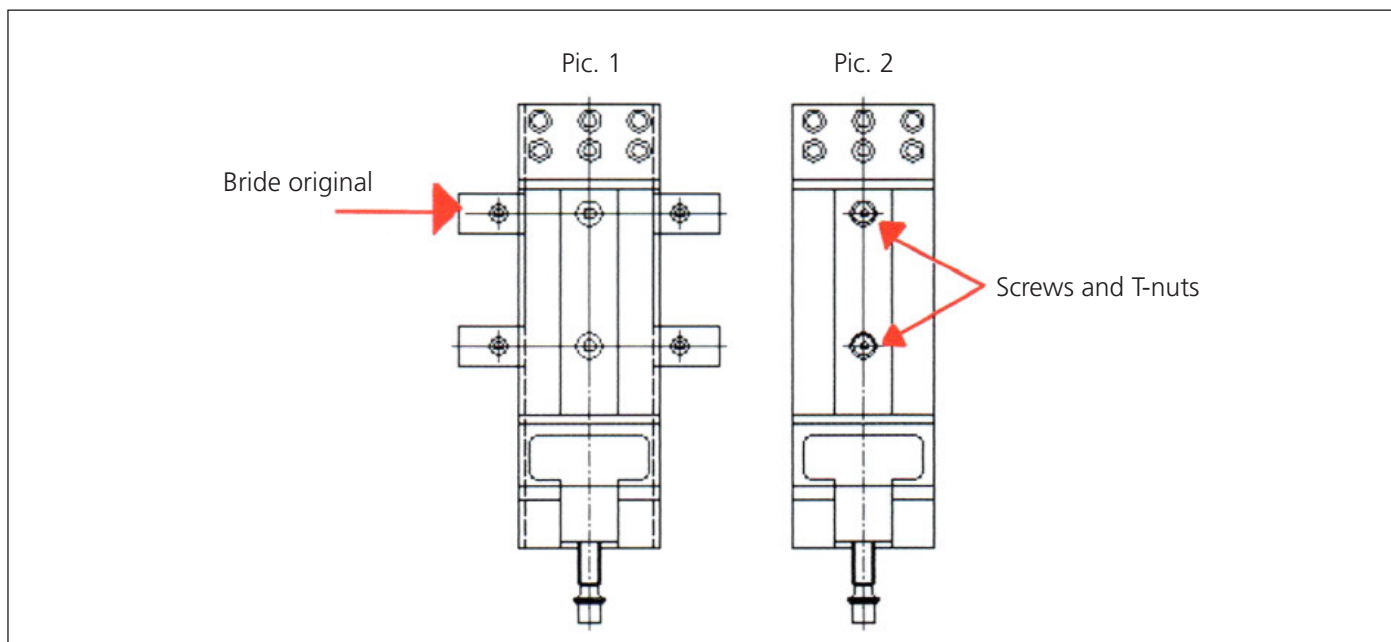
Instruction for the vertical use of the precision bench vice



- 1) Position the block with the screw.
- 2) Without leaving the block screw down the set screw (M) clockwise.
- 3) Clamp the workpiece.

Instruction for the clamping of the vices on the table of the machine-tools:

In order to obtain the best clamping tolerances it's necessary to clamp the precision bench vice or with the original SMW-Autoblok clamps (ex. cod. 462645, pic. 1) or in the middle with the screws and T-nuts (ex. cod. 465052, pic. 2).

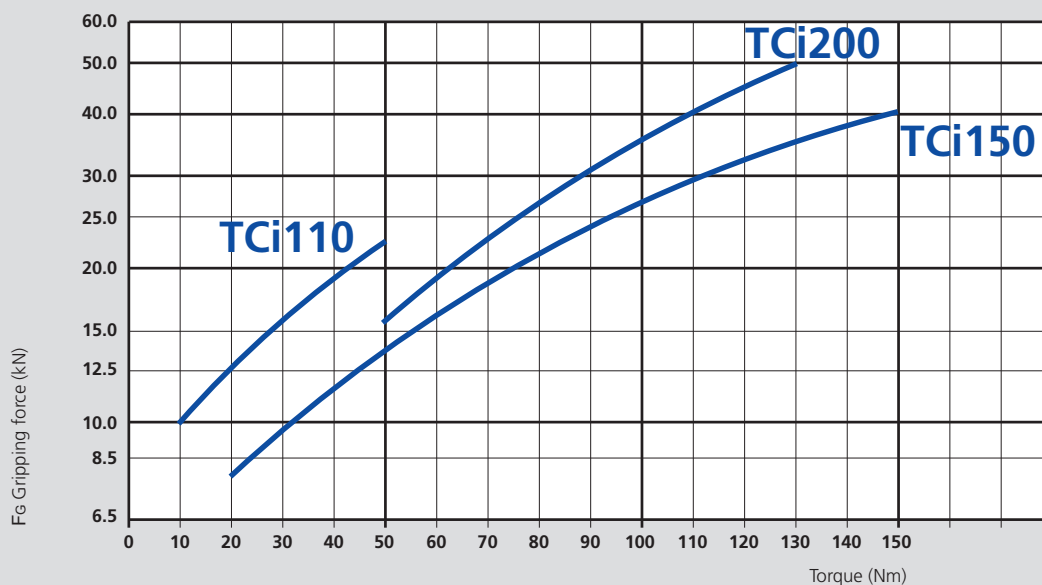


Clamping the workpiece

For controlled clamping and the best repeatability use of a torque wrench is recommended:

- 1) Clamp the workpiece with the torque wrench at the necessary clamping force in accordance with the following diagram.
- 2) Zero set on the workpiece.
- 3) Machine the first workpiece.
- 4) Clamp the other workpieces at the same clamping force.

Clamping force diagram



12 months warranty

Product: Precision Bench Vice

SMW-AUTOBLOK provides a warranty on the purchased product for 12 months from the date of purchase as stipulated in our General Terms of Sale in the following cases:

- The defect was not known to the customer at the time of purchase.
- The defect is not due to wear as a result of use.
- The customer has not been negligent by improperly operating or incorrectly maintaining of our product. Refer to the enclosed instruction manual for operation and maintenance information.
- It is not a wear part such as seals, rollers or valves.
- Especially work piece touching parts such as jaws, locators, inserts, rollers and face drivers are excluded from warranty.
- Only original SMW-Autoblok parts have been used such as spare parts, seals, rollers, valves, jaws, locators, inserts and face drivers.
- There is evidence that the maintenance intervals in the operating instructions have been followed. The customer must provide maintenance documentation for this purpose. The maintenance performed must be documented in the maintenance section of the operating instructions and signed by a properly authorized person.

Please note that, if the above requirements are not met, the warranty is only invalid if the defect already existed at the time of transfer of risk, which is usually upon delivery of the product, unless the customer was aware of the defect at the time of transfer of risk.

24-months warranty -optional-

Product: Precision Bench Vice

Against additional fee, SMW-AUTOBLOK offers a warranty on the purchased product for 24 months from date of purchase as a modification to the 12-month limitation period stipulated in our General Terms of Sale if the following conditions are met:

- An extension of the warranty from 12 to 24 months has been agreed upon in writing with SMW-AUTOBLOK.
- There is no defect due to wear as a result of use.
- The defect was not known to the customer at the time of purchase.
- The customer has not been negligent by improperly operating or incorrectly maintaining of our product. Refer to the enclosed instruction manual for operation and maintenance information.
- It is not a wear part such as seals, rollers or valves.
- Especially work piece touching parts such as jaws, locators, inserts, rollers and face drivers are excluded from warranty.
- Only original SMW-Autoblok parts have been used such as spare parts, seals, rollers, valves, jaws, locators, inserts and face drivers.
- There is evidence that the maintenance intervals in the operating instructions have been followed. The customer must provide maintenance documentation for this purpose. The maintenance performed must be documented in the maintenance section of the operating instructions and signed by a properly authorized person.
- Paid inspection by or at SMW-AUTOBLOK is mandatory.
Minimum interval with maintenance documentation by SMW-AUTOBLOK.


Single shift operation	once in 24 months
2- and 3-shift operation	once in 12 months

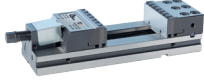
The customer is responsible for having inspections performed on time.

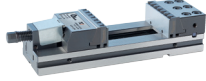
- The delivery location and machine location are within Germany.


Product: _____

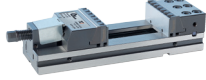
Serialno.: _____

 Regular and documented maintenance conserves the value of your work holding, and ensures warranty!

Maintained according to instruction manual	YES <input type="checkbox"/>	
Operating hours		
Name		
Date		
Signature		
Remarks		


Maintained according to instruction manual	YES <input type="checkbox"/>	
Operating hours		
Name		
Date		
Signature		
Remarks		


Maintained according to instruction manual	YES <input type="checkbox"/>	
Operating hours		
Name		
Date		
Signature		
Remarks		

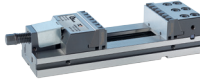
Maintained according to instruction manual	YES <input type="checkbox"/>	
Operating hours		
Name		
Date		
Signature		
Remarks		

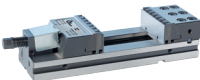
Product: _____

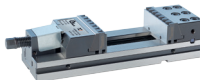
Serialno.: _____

 Regular and documented maintenance conserves the value of your work holding, and ensures warranty!

Maintained according to instruction manual	YES <input type="checkbox"/>	
Operating hours		
Name		
Date		
Signature		
Remarks		

Maintained according to instruction manual	YES <input type="checkbox"/>	
Operating hours		
Name		
Date		
Signature		
Remarks		

Maintained according to instruction manual	YES <input type="checkbox"/>	
Operating hours		
Name		
Date		
Signature		
Remarks		

Maintained according to instruction manual	YES <input type="checkbox"/>	
Operating hours		
Name		
Date		
Signature		
Remarks		

Empfangsbestätigung für die Betriebsanleitung Confirmation of receipt of the instruction manual



Hiermit bestätigt die vom Betreiber/ Anwender beauftragte Person

This certifies the operator assigned by the operating company

Herr / Frau

Mr. / Mrs.

den Erhalt der Betriebsanleitung sowie deren Inhalte, insbesondere das Kapitel Sicherheit gelesen und verstanden zu haben.

hereby confirms to have received the instruction manual and to have read and understood the content, especially the chapters concerning safety.

Bediener

Datum

Operator

Date

Betreiber / Sachbeauftragter

Datum

Operating Company /
Authorised person

Date

Id.Nr. / Id. No.

:

Artikelbez. / Item

:

Gewicht / Weight

:

Seriennr. / Serialno.

:

Bitte ausgefüllt zurückschicken an:

Please send the filled in form back to:

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**China**

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 Fax +86 21 - 5810 - 6395
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