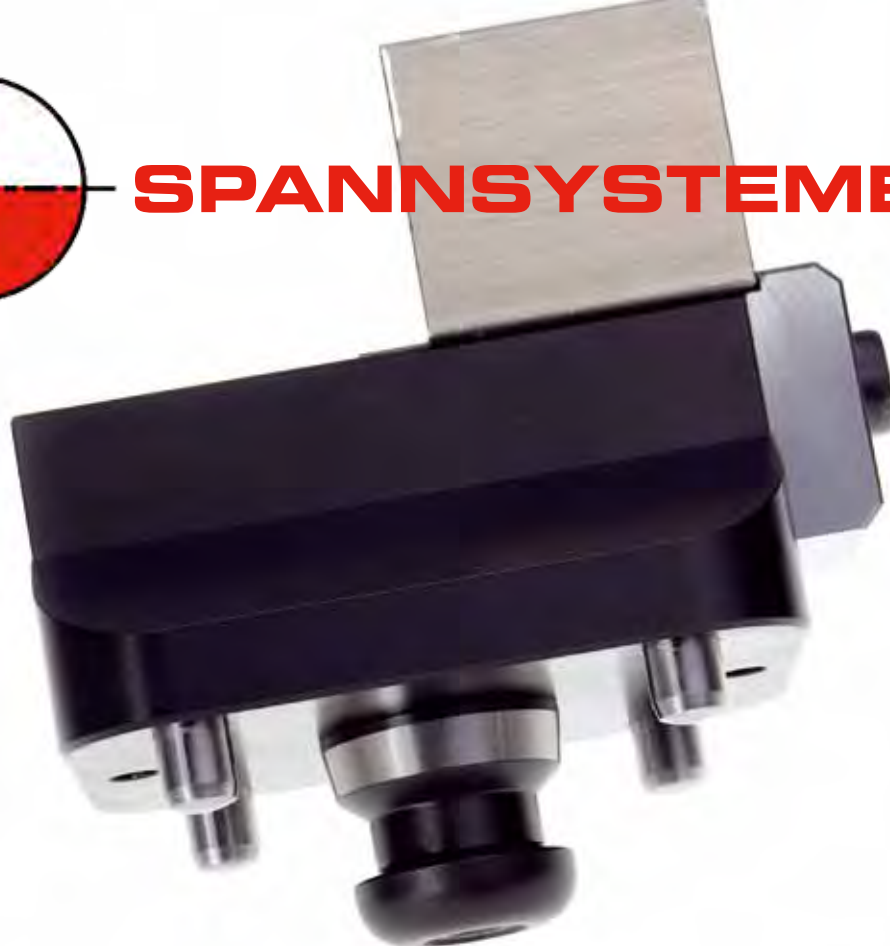


# SPANNSYSTEME



Zeropoint clamping

Clamping towers

Clamping stations

Clamping pallets

Magnet clamping

Vacuum clamping

Mechanical clamping



# innotool® austria



ESTD. 1996  
by innotool austria

# Preface

*„Our focus is the development of new technologies  
and the manufacturing of highest quality solutions  
to support your precision.“ (Johann Supanz, CEO)*

innotool austria has formed over the years to specialize in solutions for manufacturing process. Core competences are construction and development of new products. The following focal points are important for us:

- Innovative solutions in order to optimize your production
- High quality products at economic prices
- Development, construction, production and testing done in-house
- Flexible manufacturing capabilities, modern machines and strong partners guarantee high quality in  $\mu$ -machining
- Time savings during production because of zero point clamping systems, sophisticated applications and pallet systems

All innotool austria products are assembled, tested and shipped from our headquarter in Altsch which guarantees continuous quality assurance.

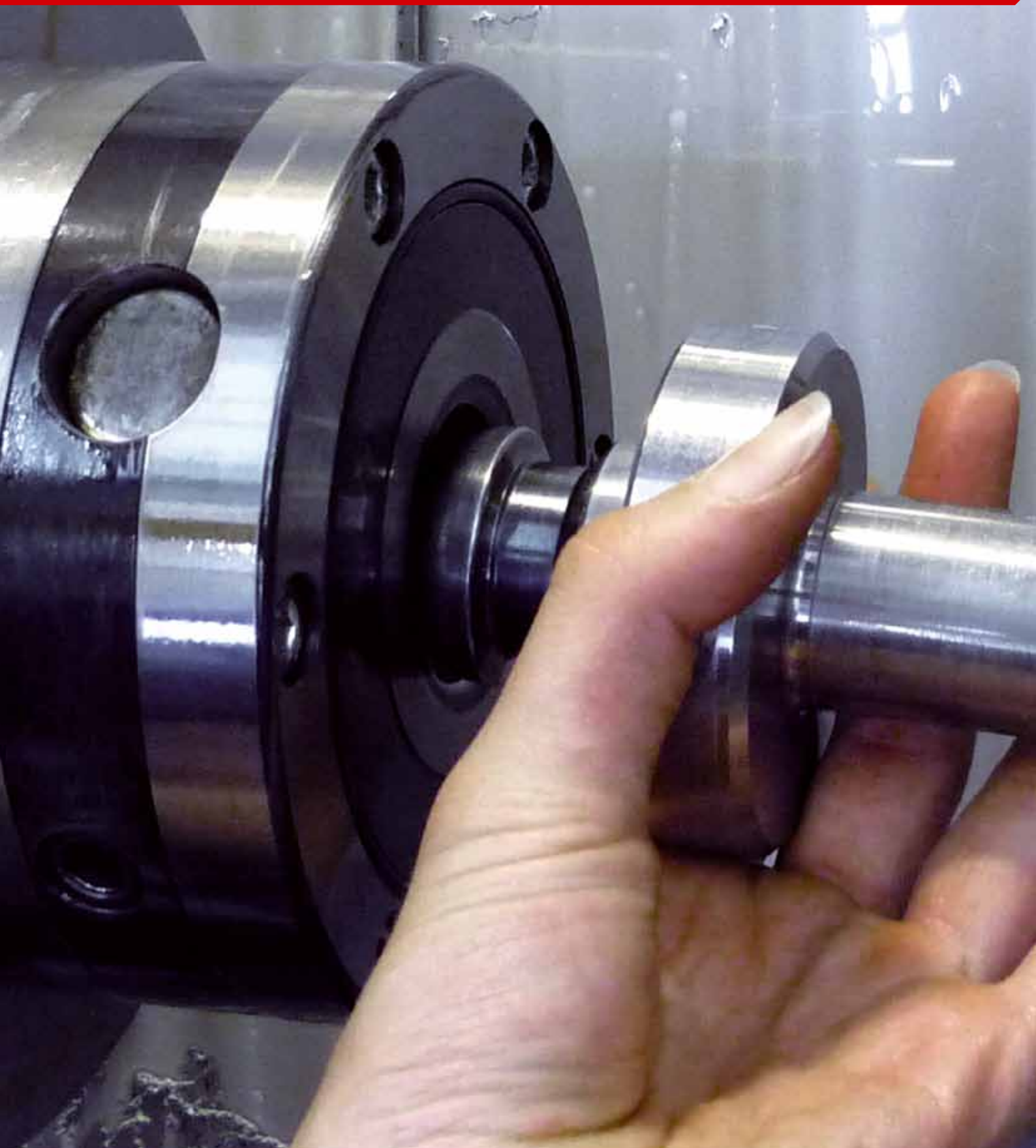
## FOR YOUR PRECISION



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# Clamping knobs





The background image shows a close-up of a clamping mechanism. A black rectangular block with two circular openings is mounted on a silver metal plate. To the left, a yellow and black clamping knob is visible. The text is overlaid on a semi-transparent grey box on the left side of the image.

Function of Clamping knobs

Structure and positioning

Clamping knob types

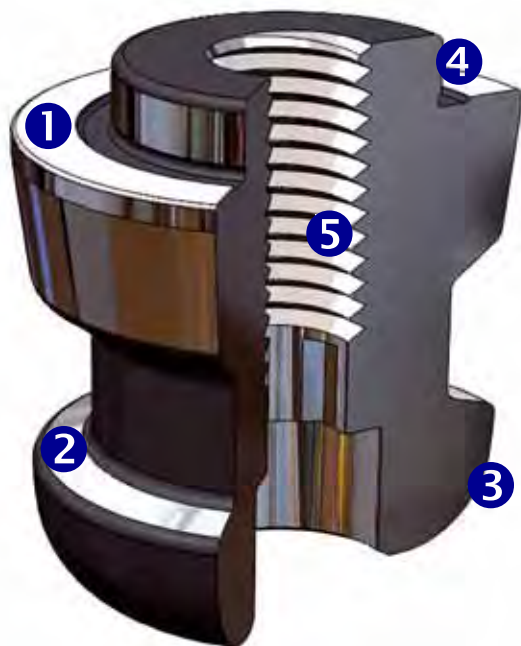
Mounting variations

Pass screws



## Powerful Operation. High Repeatability.

### UNILOCK Clamping knob



#### 1 Taper planar support

A large, high-precision taper planar contact surface provides high power transmission and low-wear at the point where the Clamping knob contacts the Clamping chuck. This high taper-to-taper contact ratio will provide high repeatable accuracies of  $<0.005\text{mm}$  over long term utilization. (By matching the Clamping knob fit, repeatability accuracies of  $<0.001\text{mm}$  can be achieved).

#### 2 Locking surface

A massive contact surface provides high power transmissions for pulling the Clamping knob into position and holding it in place. The  $15^\circ$  clamping surface ensures an involuntary opening of the clamping system by self-locking.

#### 3 Insertion radius

The sizable entry radius facilitates manual loading operations and assists in centering the Clamping knob in the taper.

#### 4 Locating Boss

A standard feature is the large 25 mm diameter by 5 mm tall boss. Positive position and lock is achieved when attaching the Clamping knob. Special diameters and lengths are available on request.

#### 5 Fixation

Standard fixation: M12 internal thread and a back side counterbore for an M10 cap screw. Additional internal thread sizes include M16 and M20. A through hole can also be provided for thru mounting of M12 and M16 cap screws.

A hexagon form is included in the cap screw bore to allow the Clamping knob to be rotated.

„UNILOCK Clamping knobs supporting the Installation Clamping chuck HSM 196 (page 20) as the UNILOCK Automation Clamping rings (page 49) also operating on the same principles. These forms differ to match their respective applications and the Clamping chuck form.“

# Highest Precision. Outstanding Stability.

## Power and Safety

The UNILOCK Clamping knob provides commonality and interchangeability between all the Standard Clamping chucks. Due to the high proportion in the centering taper and a thick-wall, low-profile construction, these clamping knobs perfectly suit heavy-duty machining. Outstanding performance is achieved by the backlash-free short taper centering and self-locking clamping contour.





## Structure UNILOCK Clamping knobs

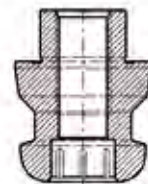
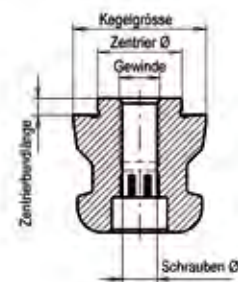
For an individual, flexible as well as precise use of UNILOCK Clamping knobs, different Clamping knob types are offered.



### UNILOCK Standard Clamping knob

Due to different centering collar length of 5mm, 10mm and 15mm, individual applications can be realised. A Standard centering diameter of 25mm is available for thread sizes M12, M16 and M20. For existing centering holes, Clamping knobs has been developed with different centering diameters of 16mm, 18mm and 20mm using a standard centering collar length of 5mm.

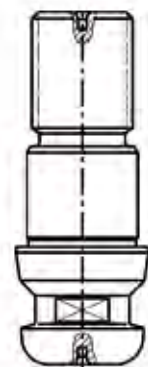
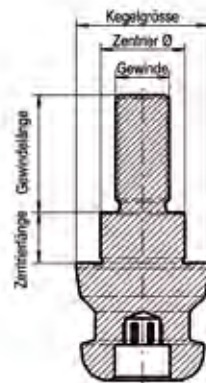
Mounting possibility: with norm screw from device or Clamping knob side.



### UNILOCK Clamping knob with integrated thread

Especially for heavy machining operations, two special Clamping knobs are developed. Firstly with centering diameter 25mm, centering collar length 15mm and integrated outside thread M16. Secondly with centering diameter 32mm, centering collar length 30mm and integrated outside thread M24.

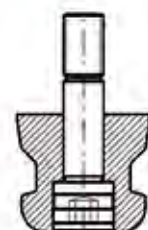
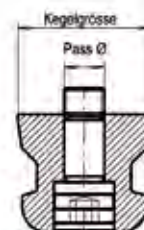
Mounting possibility: directly with integrated thread knob.



### UNILOCK Clamping knob with centering hole

For direct mounting into the work piece or on grid plates, these Clamping knobs can be fixed precisely.

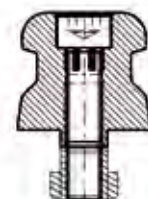
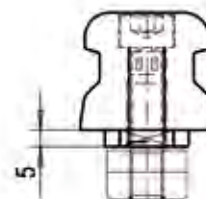
Mounting possibility: depends on each application, assembling with different pass screws.



### UNILOCK Clamping knobs for T-Slot-Installation

For an easy fixation of Clamping knobs on current T-Slot machine tables, special Clamping knobs are offered for Nuts 14, 18 and 22.

Mounting possibility: directly with slot nuts and mounting screws (included in scope of delivery).



Nutengröße H6



## Positioning UNILOCK Clamping knob types

UNILOCK Clamping knobs are produced in types A, B and C. Their difference guarantees accuracy by using more than one UNILOCK Clamping chuck.



type A

type C

type B

**Centering clamping knob type A:** ensures position accuracy at the requested tolerance.

**Balanced clamping knob type B:** established orientation about the type A knob (Diamond pin).

**Clamping knob type C:** clamps without centering at the requested clearance.

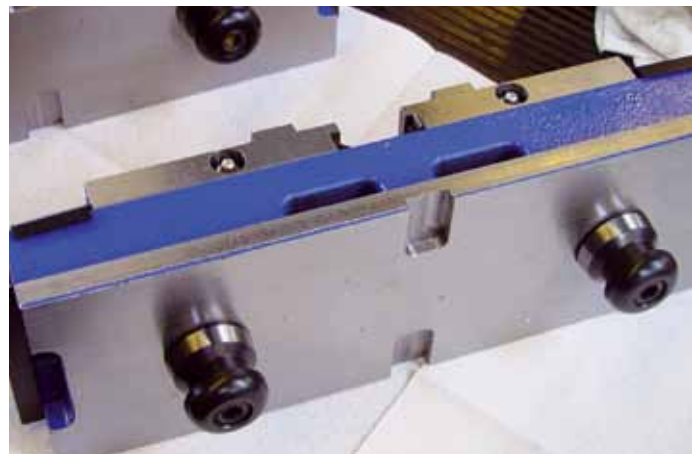
Beside picture shows, how the single Clamping knob types can be positioned for an optimal result.

## Fields of application

The massive UNILOCK Standard Clamping knobs are produced out of steel with collar, hardened and  $\mu$ -precise grinded for every installation matter. For ultra precise use, also very high tolerated versions are available on request.

Some UNILOCK Clamping knobs are developed specially for the use of their UNILOCK chucks. One example are the UNILOCK HSK 196 chucks.

These chucks with a thru hole of 60mm need special Clamping knobs with the same diameter but for different applications.



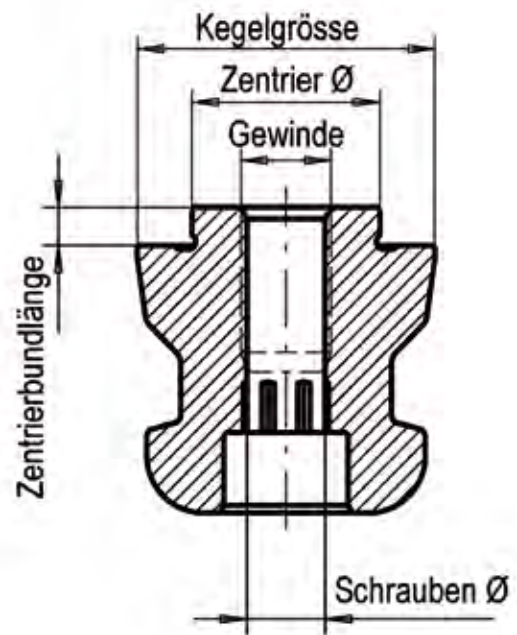
## Clamping knobs ,The Connection‘

Each assistant is unique in itself, however they all deliver high gripping forces, unmatched stability and operational security.

UNILOCK Standard Clamping knobs are the most secure in all of zero-point clamping technology. They have been the industry leader in their unchanged form since their inception in 1996.



Item No.	Description	Type	Cone length	Centering-diameter	Collar length	Thread
UL500.113	SBA 40-25-5-12	A	40	25h6	5	12
UL500.114	SBB 40-25-5-12	B	40	25h6	5	12
UL500.115	SBC 40-25-5-12	C	40	25h6	5	12
UL500.116	SBA 40-25-5-16	A	40	25h6	5	16
UL500.117	SBB 40-25-5-16	B	40	25h6	5	16
UL500.118	SBC 40-25-5-16	C	40	25h6	5	16
UL500.119	SBA 40-25-5-20	A	40	25h6	5	20
UL500.120	SBB 40-25-5-20	B	40	25h6	5	20
UL500.121	SBC 40-25-5-20	C	40	25h6	5	20
UL500.122	SBA 40-25-10-12	A	40	25h6	10	12
UL500.123	SBB 40-25-10-12	B	40	25h6	10	12
UL500.124	SBC 40-25-10-12	C	40	25h6	10	12
UL500.125	SBA 40-25-10-16	A	40	25h6	10	16
UL500.126	SBB 40-25-10-16	B	40	25h6	10	16
UL500.127	SBC 40-25-10-16	C	40	25h6	10	16
UL500.128	SBA 40-25-10-20	A	40	25h6	10	20
UL500.129	SBB 40-25-10-20	B	40	25h6	10	20
UL500.130	SBC 40-25-10-20	C	40	25h6	10	20
UL500.131	SBA 40-25-15-12	A	40	25h6	15	12
UL500.132	SBB 40-25-15-12	B	40	25h6	15	12
UL500.133	SBC 40-25-15-12	C	40	25h6	15	12





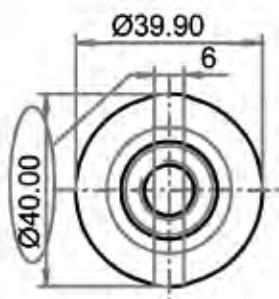
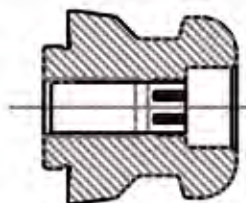


## Clamping knob types with different Centering collar lenth's / -diameters



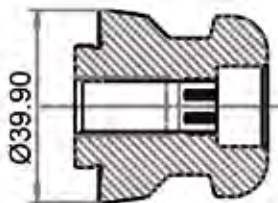
**Typ B**

Ausgleichspannbolzen



**Typ C**

Spielspannbolzen



Item No.	Description	Type	Cone length	Centering-diameter	Collar length	Thread
UL500.134	SBA 40-25-15-16	A	40	25h6	15	16
UL500.135	SBB 40-25-15-16	B	40	25h6	15	16
UL500.136	SBC 40-25-15-16	C	40	25h6	15	16

UL500.137	SBA 40-25-15-20	A	40	25h6	15	20
UL500.138	SBB 40-25-15-20	B	40	25h6	15	20
UL500.139	SBC 40-25-15-20	C	40	25h6	15	20

UL500.140	SBA 40-25-20-12	A	40	25h6	20	12
UL500.141	SBB 40-25-20-12	B	40	25h6	20	12
UL500.142	SBC 40-25-20-12	C	40	25h6	20	12

UL500.143	SBA 40-25-20-16	A	40	25h6	20	16
UL500.144	SBB 40-25-20-16	B	40	25h6	20	16
UL500.145	SBC 40-25-20-16	C	40	25h6	20	16

UL500.146	SBA 40-25-20-20	A	40	25h6	20	20
UL500.147	SBB 40-25-20-20	B	40	25h6	20	20
UL500.148	SBC 40-25-20-20	C	40	25h6	20	20

UL500.759	SBA 40-24-5-16	A	40	24h6	5	16
UL500.760	SBB 40-24-5-16	B	40	24h6	5	16
UL500.761	SBC 40-24-5-16	C	40	24h6	5	16

UL500.763	SBA 40-16-5-12	A	40	16h6	5	12
UL500.764	SBB 40-16-5-12	B	40	16h6	5	12
UL500.765	SBC 40-16-5-12	C	40	16h6	5	12

UL500.766	SBA 40-18-5-12	A	40	18h6	5	12
UL500.767	SBB 40-18-5-12	B	40	18h6	5	12
UL500.768	SBC 40-18-5-12	C	40	18h6	5	12

UL500.769	SBA 40-20-5-12	A	40	20h6	5	12
UL500.770	SBB 40-20-5-12	B	40	20h6	5	12
UL500.771	SBC 40-20-5-12	C	40	20h6	5	12

### Scope of delivery

UNILOCK Clamping knobs are going to be delivered without mounting screws.

### STAINLESS

All UNILOCK Clamping knobs are also available in stainless steel, on request.

Please note for safety reasons, the load forces for stainless steel knob applications need to be reduced by approximately 30%.

## Clamping knobs for univeral mounting possibilities

### UNILOCK Clamping knob with integrated thread

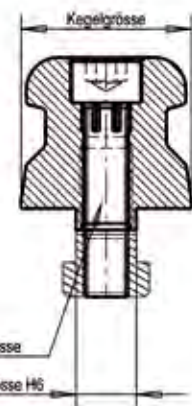
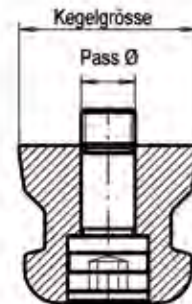
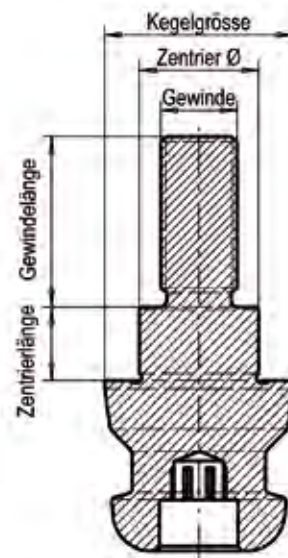
Item No.	Description	Type	Cone length	Centering-diameter	Collar length	Thread
UL500.751	SBA 40-25-15-16	A	40	25h6	15	16
UL500.752	SBB 40-25-15-16	B	40	25h6	15	16
UL500.753	SBC 40-25-15-16	C	40	25h6	15	16
UL500.755	SBA 40-32-15-12	A	40	32H6	30	24
UL500.756	SBB 40-32-15-12	B	40	32H6	30	24
UL500.757	SBC 40-32-15-12	C	40	32H6	30	24

### UNILOCK Clamping knob with centering hole

Item No.	Description	Type	Cone length	Pass-diameter	Collar length	Thread
UL800.153	SBA 40-12-x-x	A	40	12G6	-	-
UL800.152	SBA 40-16-x-x	A	40	16G6	-	-

### UNILOCK Clamping knobs for T-Slot-Installation

Item No.	Description	Type	Cone length	Notch collar	Collar length	Screw
UL800.154	SBA 40-14-5-10	A	40	14h6	5	10
UL800.155	SBC 40-14-5-10	C	40	14h6	5	10
UL800.156	SBA 40-18-5-12	A	40	18h6	5	12
UL800.157	SBC 40-18-5-12	C	40	18h6	5	12
UL800.158	SBA 40-22-5-12	A	40	22h6	5	12
UL800.159	SBC 40-22-5-12	C	40	22h6	5	12





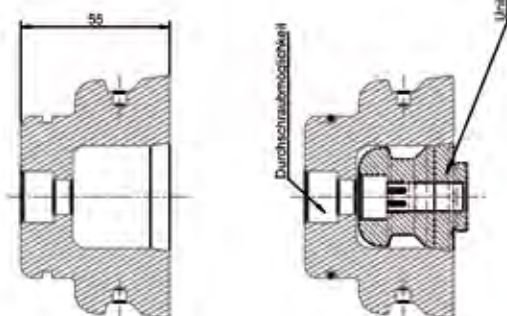
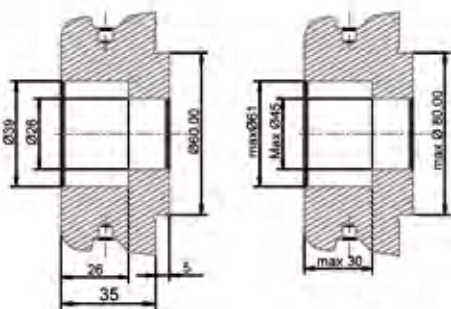


## Clamping knobs for HSM 196 chucks

For the HSM 196 (p. 20) had been developed special, big Clamping knobs in 3 different versions.

Clamping knob type HSF 90 has been designed for chuck flange and Clamping knob type HSI 90 for socket screws M24/1".

If devices in combination with UNILOCK Standard Clamping knobs want to be used on the HSM 196, a reduction adaptor HSK 90 is available which connects both Clamping knob types.



Item No.	Description	Type	Cone length	Centering-diameter	Collar length	Thread
UL500.153	HSF 90	A	90	76h6	5	74*2
UL500.154	HSI 90	A	90	60h6	5	24
UL500.155	HSI 90	B	90	60h6	5	24
UL500.156	HSI 90	C	90	60h6	5	24
UL500.157	HSR 90	A	90	25h6	-	12



## Mounting variations for UNILOCK Clamping knobs

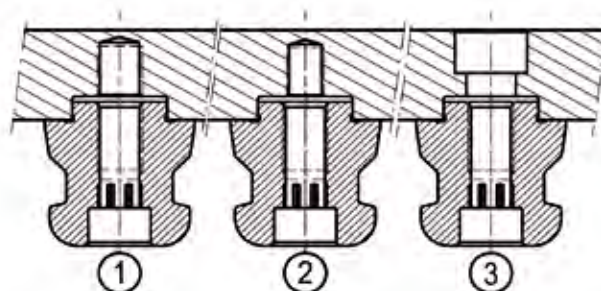
There are many mounting possibilities for different applications. UNILOCK Standard Clamping knobs are assembled with norm screws and for UNILOCK Clamping knobs with centering hole UNILOCK Pass screws in different sizes are provided.



### UNILOCK Standard Clamping knobs

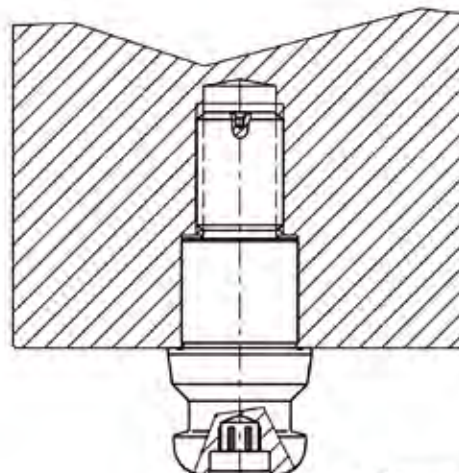
UNILOCK Standard Clamping knobs can be fixed in three different possibilities by using norm screws.

1. Assembling with grub screw DIN 913
2. Assembling with screw DIN 912, through the Clamping knob
3. Assembling with screw DIN 912 through devices or work pieces



### UNILOCK Clamping knob with integrated thread

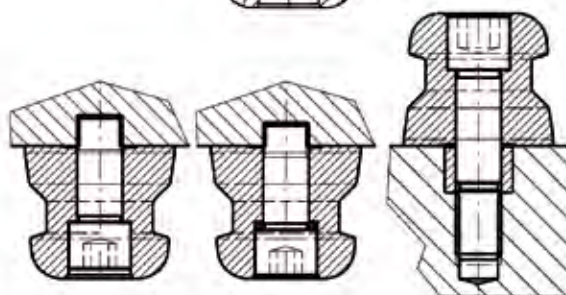
For mounting possibilities with the Clamping knob itself, special sizes of the centering and the thread are available on request.



### UNILOCK Clamping knob with centering hole

These Clamping knobs can be assembled by using various UNILOCK pass screws. They are mounted through the Clamping knob and centered over a precision thread or a precision-pass diameter. UNILOCK pass screws are available for many different applications.

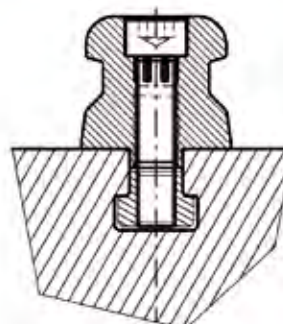
We support the Clamping knob UL800.153 with pass screws having a pass diameter of 12mm und the Clamping knob UL800.152 with pass screws having a pass diameter of 16mm.



### UNILOCK Clamping knobs for T-Slot-Installation

UNILOCK Clamping knobs for T-Slot-Installation have a central pass-surface for assembling and orientation in T-Slot tables.

They are available in standard sizes 14, 18 and 22. Special sizes can be supported on request.







## Pass screws

All UNILOCK pass screws are produced out of a high-strength material and hardened, for centering in a high precise thread. Length L 4 types are centering over the pass diameter.

To have the possibility to adjust the depth of the thread, insert rings are available.

Item No.	Pass-diameter	Head-diameter	Weight (metric)	Length 1 (mm)	Length 2 (mm)	Length 3 (mm)	Length 4 (mm)
UL800.201	16	20,9	16*2	55	25	35	10
UL800.240	16	20,9	16*2	43,5	24	23,5	-
UL800.222	16	20,9	16*2	28	-	8	-
UL800.221	16	20,9	16*1,5	28	-	8	-
UL800.220	16	20,9	16*1,25	28	-	8	-

UL800.241	16	20,9	14*2	40,5	21	20,5	-
UL800.225	16	20,9	14*2	28	-	8	-
UL800.224	16	20,9	14*1,5	28	-	8	-
UL800.223	16	20,8	14*1,25	28	-	8	-

UL800.242	16	20,9	12*1,75	37,5	18	17,5	-
UL800.228	16	20,9	12*1,75	28	-	8	-
UL800.227	16	20,9	12*1,5	28	-	8	-
UL800.226	16	20,8	12*1,25	28	-	8	-

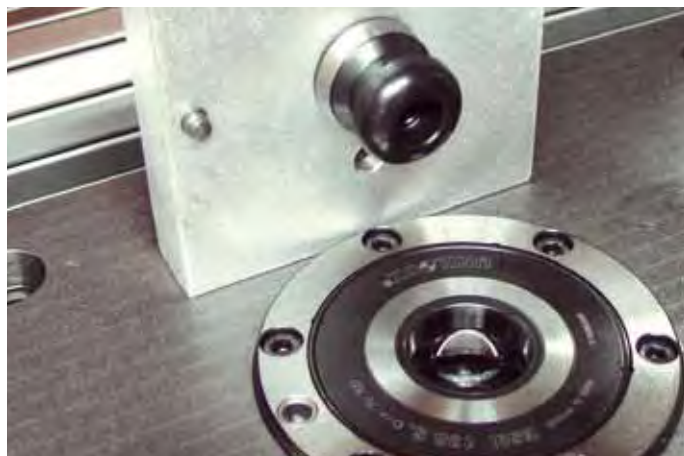
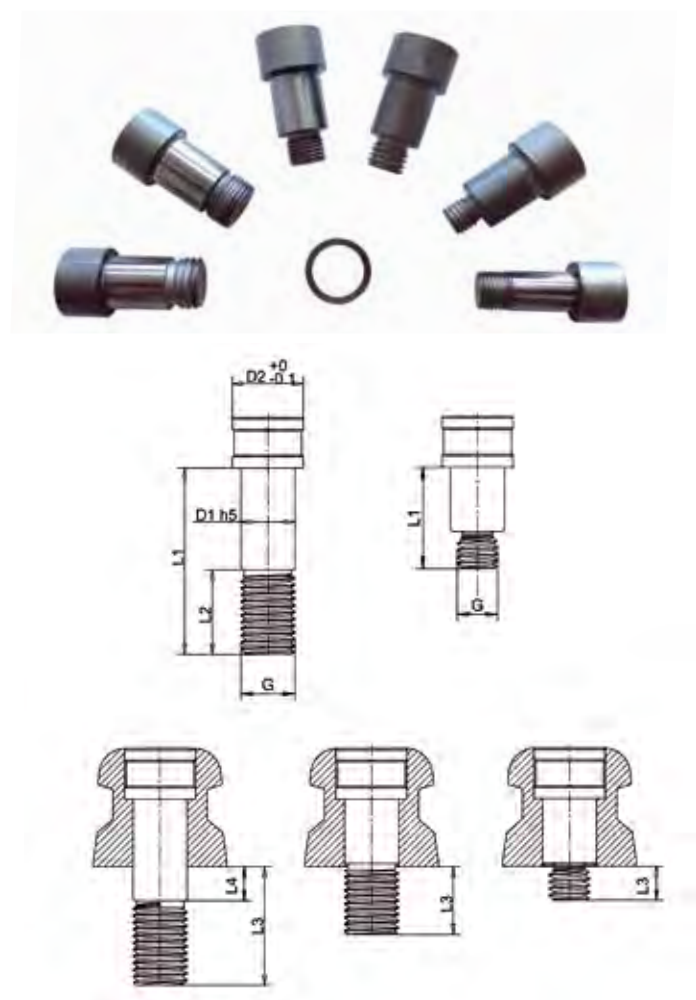
UL800.230	16	20,9	10*1,5	28	-	8	-
UL800.229	16	20,9	10*1,25	28	-	8	-

UL800.202	12	18	12*1,75	50	22	30	8
UL800.200	12	18	12*1,75	55	22	35	13
UL800.235	12	18	12*1,75	28	-	8	-
UL800.236	12	18	12*1,5	28	-	8	-
UL800.237	12	18	12*1,25	28	-	8	-

UL800.243	12	18	10*1,5	34,5	15	14,5	-
UL800.238	12	18	10*1,5	28	-	8	-
UL800.239	12	18	10*1,25	28	-	8	-

### Scope of delivery

UNILOCK pass screws incl. insert ring only for pass screws with length L 3=8mm.





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