

	KTR Kupplungstechnik GmbH D-48407 Rheine	CLAMPEX® KTR 401 mounting instructions	KTR-N 40819 E
			sheet: 1
			edition: 2

The **CLAMPEX®** clamping set is a frictionally engaged, detachable shaft - hub connection for cylindrical shafts and bores without feather key.

General Hints

Please read through these mounting instructions carefully before assembling the clamping set.

Please pay special attention to the safety instructions!

The mounting instructions are part of your product. Please keep them carefully and close to the clamping set.

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Safety and Advice Hints



DANGER !

Danger of injury to persons.



CAUTION !

Damages on the machine possible.



ATTENTION !

Pointing to important items.

General Hints to Danger



DANGER !

With assembly and disassembly of the clamping set it has to be made sure that the entire drive train is protected against unintentional engagement. You can be seriously hurt by rotating parts. Please make absolutely sure to read through and observe the following safety instructions.

- All operations on and with the clamping set have to be performed taking into account "safety first".
- Please make sure to disengage the power pack before you perform your work at the clamping set.
- Protect the power pack against unintentional engagement, e. g. by providing hints at the place of engagement or removing the fuse for current supply.
- Do not touch the operation area of the machine as long as it is in operation.
- Please protect the rotating drive parts against unintentional touch. Please provide for the necessary protection devices and caps.

Proper Use

You may only assemble and disassemble the clamping set if you

- have carefully read through the mounting instructions and understood them
- and if you are authorized and have proper skills

The clamping set may only be used in accordance with the technical data (see table 2).

Unauthorized modifications on the clamping set are not admissible. We do not take any warranty for resulting damages. To further develop the product we reserve the right for technical modifications.

The **CLAMPEX®** clamping set described in here corresponds to the technical status at the time of printing of these mounting instructions.

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The clamping set is generally delivered in assembled condition.

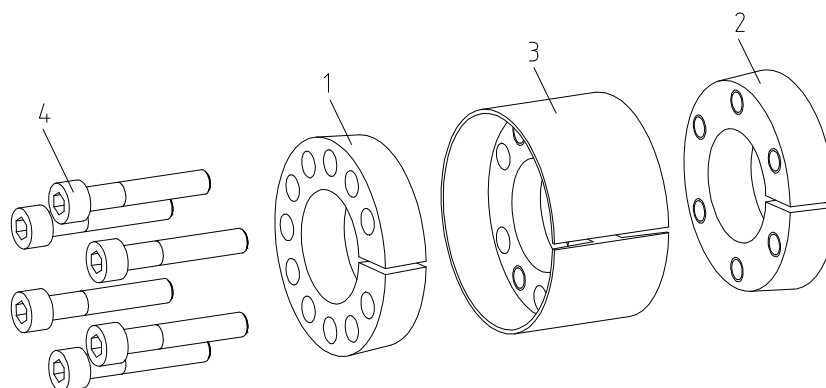
Tolerances, surfaces

A good rotating process is sufficient:
Rz £ 16mm

Highest permissible tolerance:
d = h8/H8 - shaft/hub

Components of CLAMPEX® KTR 401

component	quantity	designation
1	1	front pressure ring (slotted)
2	1	back pressure ring (slotted)
3	1	external ring (slotted)
4	see table 2	cap screw DIN 912



picture 1: CLAMPEX® KTR 401



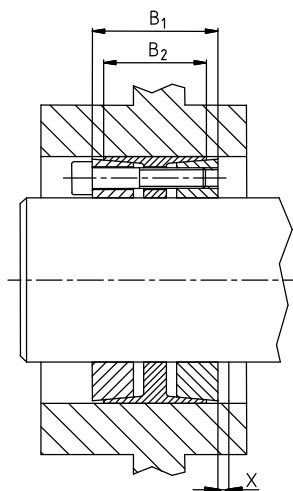
CAUTION !

Check the clamping set before the assembly, so that the slots of component 1, 2 and 3 are flush with each other.



ATTENTION !

Plan a free space between the pressure ring in the back and the hub/shaft for a later disassembly.



picture 2: free space for the disassembly

Formula for calculation of the free space x for the disassembly:

$$x = \frac{(B_1 - B_2)}{2}$$

Dimensions for B₁ and B₂ see table 2.



ATTENTION !

Dirty or used clamping sets must be disassembled, cleaned and afterwards oiled with thin-bodied oil (e. g. Castrol 4 in 1 or Klüber Quitsch Ex) before the assembly.



Assembly

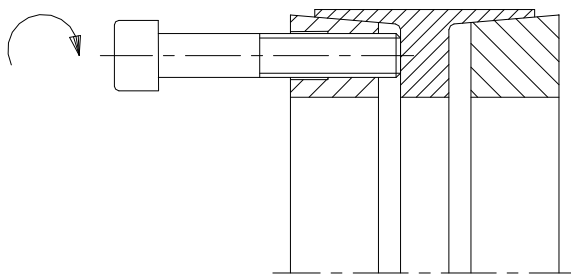
- Check the position of shaft and hub regarding the stipulated tolerance (h8/H8).
- Clean the hub bore and the shaft and afterwards oil them with thin-bodied oil (e. g. Castrol 4 in 1 or Klüber Quitsch Ex).



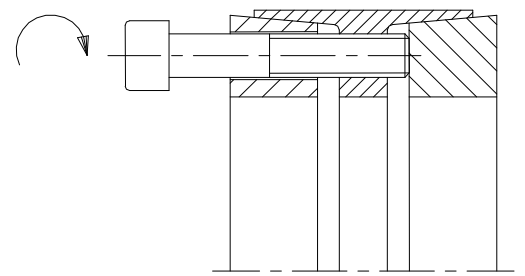
CAUTION !

Do not use oils and greases with molybdenum disulphide or high pressure additions as well as slide grease pastes.

- Detach the screws slightly. To make the assembly easier, fix the pressure rings in the front and in the back via the respective forcing thread by 2 clamping screws (see picture 3 and 4). Insert clamping set KTR 401 between shaft and hub.



picture 3: fixing of the front pressure ring



picture 4: fixing of the back pressure ring

- Remove the clamping screws used for the fixing and screw them into the threads of the back pressure ring.
- Slightly tighten the clamping screws manually and align the clamping set with hub part.
- At KTR 401 please make sure that the pressure rings are parallel to each other and in an angle of 90° to the shaft/hub.
- Tighten the clamping screws evenly and crosswise. Increase the tightening torque step by step. This procedure must be repeated until the tightening torque indicated in table 1 is reached with all clamping screws.

Table 1:

type of clamping set	401					
screw size M	M10	M12	M14	M16	M20	M22
tightening torque T_A [Nm]	83	145	230	355	690	930



ATTENTION !

During the assembly there can be slight axial displacement of the hub opposite to the shaft.



Disassembly

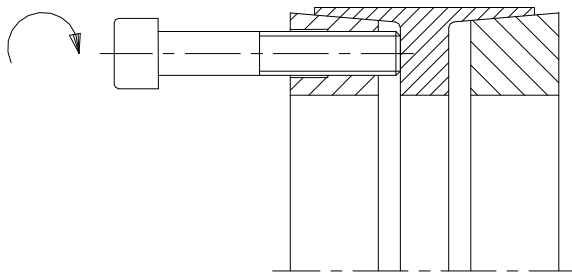


DANGER !

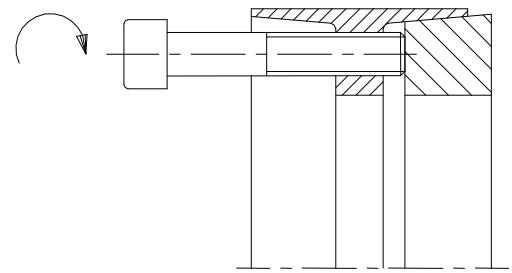
Loosened or falling drive parts can cause injuries to persons or damages to the machines.

Safe the drive parts before the disassembly.

- Loose all clamping screws evenly one after the other and unscrew them.
- Screw the clamping screws into the forcing threads of the front pressure ring (component 1) (see picture 5).
- Tighten the clamping screws evenly and crosswise. Increase the impression torque step by step until the front pressure ring (component 1) and the external ring (component 3) are separated.
- Screw the clamping screws into the forcing threads of the external ring (component 3) (see picture 6).
- Tighten the clamping screws evenly and crosswise. Increase the impression torque step by step until the back pressure ring (component 2) and the external ring (component 3) are separated.
- Remove the unscrewed clamping set between shaft and hub.



picture 5: disassembly of the front pressure ring



picture 6: disassembly of the back pressure ring



CAUTION !

In case of non-observance of these hints or in case of non-considerance of the operating conditions regarding the selection of the clamping set, the function of the clamping set can be influenced.

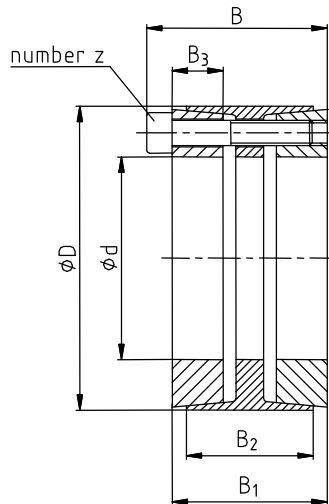
Disposal of waste:

Defective clamping sets must be cleaned and scrapped.

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Technical Data



picture 7: dimensions

Table 2:

dimensions [mm]					clamping screws DIN 912-12.9 $\mu_{ges}=0,14$			transmittable torque or axial force		surface pressure between clamping set [N/mm ²]		weight ~ kg
d x D	B	B ₁	B ₂	B ₃	M	number z	T _A [Nm] ¹⁾	T [Nm]	F _{ax} [KN]	shaft P _w	hub P _N	
70 x 110	71	61	50	20	M10	8	83	6703	192	191	97	2,15
75 x 115	71	61	50	20	M10	8	83	7182	192	178	93	2,27
80 x 120	71	61	50	20	M10	10	83	9576	239	209	111	2,39
85 x 125	71	61	50	20	M10	10	83	10174	239	197	107	2,51
90 x 130	71	61	50	20	M10	11	83	11850	263	204	113	2,63
95 x 135	71	61	50	20	M10	11	83	12508	263	193	109	2,75
100 x 145	83	71	60	24	M12	10	145	17427	349	203	112	3,96
110 x 155	83	71	60	24	M12	10	145	19170	349	184	105	4,28
120 x 165	83	71	60	24	M12	11	145	23004	383	186	108	4,60
130 x 180	93	81	65	27	M12	14	145	31718	488	194	116	6,30
140 x 190	93	81	65	27	M12	15	145	36598	523	193	118	6,71
150 x 200	93	81	65	27	M12	15	145	39212	523	180	112	7,12
160 x 210	93	81	65	27	M12	16	145	44614	558	180	114	7,52
170 x 225	106	92	78	32	M14	15	230	60976	717	184	114	9,74
180 x 235	106	92	78	32	M14	15	230	64563	717	174	109	10,20
190 x 250	118	104	88	38	M14	16	230	72693	765	148	97	13,90
200 x 260	118	104	88	38	M14	18	230	86084	861	158	105	14,50
220 x 285	126	110	96	41	M16	15	355	109672	997	154	102	19,20
240 x 305	126	110	96	41	M16	20	355	159522	1329	189	127	20,80
260 x 325	126	110	96	41	M16	21	355	181456	1396	183	125	22,30
280 x 355	132	112	96	41	M20	15	690	217884	1556	189	128	34,30
300 x 375	132	112	96	41	M20	15	690	233447	1556	177	121	36,30
320 x 405	156	136	124	48	M20	20	690	332014	2075	189	115	49,80
340 x 425	156	136	124	48	M20	20	690	352765	2075	178	110	52,50
360 x 455	182	160	140	60	M22	20	930	464949	2583	167	113	69,50
380 x 475	182	160	140	60	M22	20	930	490779	2583	158	108	72,70
400 x 495	182	160	140	60	M22	22	930	568271	2841	165	114	76,30
420 x 515	182	160	140	60	M22	24	930	650928	3100	172	120	79,90
440 x 535	182	160	140	60	M22	24	930	681925	3100	164	116	83,10
460 x 555	182	160	140	60	M22	24	930	712922	3100	157	111	86,40
480 x 575	182	160	140	60	M22	25	930	774915	3229	157	112	89,80
500 x 595	182	160	140	60	M22	25	930	807203	3229	150	108	93,10
520 x 615	182	160	140	60	M22	28	930	940230	3616	162	117	96,80
540 x 635	182	160	140	60	M22	28	930	976392	3616	156	114	100,10
560 x 655	182	160	140	60	M22	30	930	1084881	3875	161	118	103,60
580 x 675	182	160	140	60	M22	30	930	1123626	3875	155	114	106,90
600 x 695	182	160	140	60	M22	30	930	1162372	3875	150	111	110,15

1) These are the maximum screw tightening torques. They can be reduced by up to 60% of the aforementioned values, whereby T, F_{ax} and P_w, P_N are reduced proportionally then.