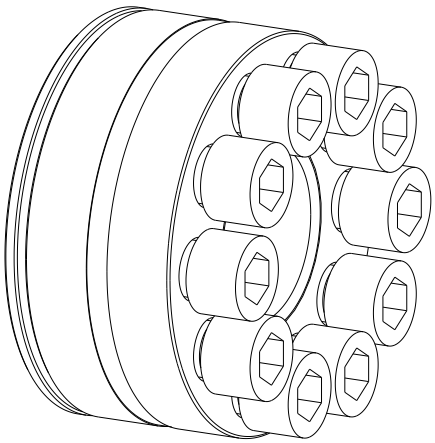
KTR clamping nut



The **KTR clamping nut** generates a big screw preload force by tightening the pressure screws at a relatively small tightening torque.

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1 Technical data

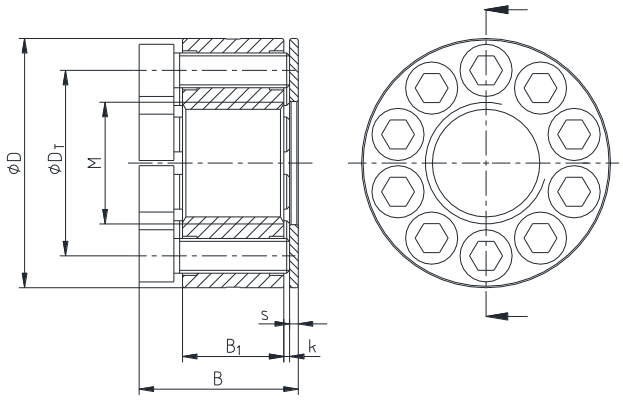

Illustration 1: Dimensions

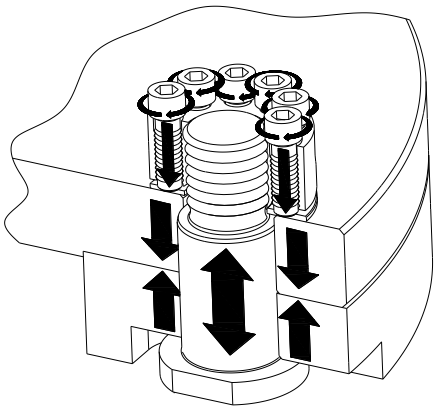

Illustration 2: Operating principle

Table 1: Dimensions

Size [1]	Dimensions [mm]						Pressure screw Component 1.3 [2]	
	D	D_T	B	B_1	s	k	DIN EN ISO 4762 – 12.9	Quantity
M24	52	39	36	20	3	1 – 2	M8	8
M27	57	42	41	25	3	1 – 2	M8	9
M30	65	48	43	25	3	1 – 2	M10	8
M33	68	51	48	30	3	1 – 2	M10	9
M36	80	58	50	30	3	1 – 2	M12	8
M42	86	64	55	35	3	1 – 2	M12	10
M48	90	72	60	40	3	1 – 2	M12	11
M52	100	79	66.5	42	4.5	1 – 2	M12	13
M56	108	83	75.5	45	4.5	1 – 2	M16	9
M60	112	86	80.5	48	4.5	1 – 2	M16	10
M64	120	92	84	52	8	1 – 2	M16	11
M72	142	107	98	58	8	1 – 2	M20	10
M80	164	122	103	64	8	1 – 2	M20	12

[1] Coarse and fine threads
[2] Description of components following chapter 4.1.

2 Advice

2.1 General advice

Please read through these operating/assembly instructions carefully before you start up the power pack with the clamping nut installed. Please pay special attention to the safety instructions!
The operating/assembly instructions are part of your product. Please store them carefully and close to the clamping nut. The copyright for these operating/assembly instructions remains with KTR.

2 Advice

2.2 Safety and advice symbols

	**Warning of personal injury**	This symbol indicates notes which may contribute to preventing bodily injuries or serious bodily injuries that may result in death.
	**Warning of product damages**	This symbol indicates notes which may contribute to preventing material or machine damage.
	**General advice**	This symbol indicates notes which may contribute to preventing adverse results or conditions.

2.3 General hazard warnings

With assembly and disassembly and maintenance of the clamping nut it has to be made sure that the entire power pack is secured against accidental switch-on. You may be seriously hurt by rotating parts or parts falling down. Please make absolutely sure to read through and observe the following safety indications.

- All operations on and with the clamping nut have to be performed taking into account "safety first".
- Please make sure to switch off the power pack which the clamping nuts are mounted on before you perform your work.
- Secure the power pack against accidental switch-on, e. g. by providing warning signs at the place of switch-on or removing the fuse for current supply.
- Do not reach into the operating area of rotating parts as long as they are in operation.
- Please secure rotating parts against accidental contact. Please provide for the necessary protection devices and covers.
- Components falling down may cause injury to persons or damage on the machine. Secure the components with assembly or disassembly.

2.4 Intended use

You may only assemble, disassemble and maintain the clamping nut if you

- have carefully read through the operating/assembly instructions and understood them
- had technical training
- are authorized by your company

The clamping nut may be used in accordance with the technical data only (see table 1 and 2). Unauthorized modifications on the clamping nut are not admissible. We will not assume liability for any damage that may arise. In the interest of further development we reserve the right for technical modifications.
The **KTR clamping nut** described in here corresponds to the technical status at the time of printing of these operating/assembly instructions.

3 Storage, transport and packaging

3.1 Storage

The clamping nuts are supplied in preserved condition and can be stored at a roofed and dry place for 6 - 9 months.

Humid storage rooms are not suitable.
Please make sure that condensation is not generated.

3.2 Transport and packaging

In order to avoid any injuries and any kind of damage please always make use of proper transport and lifting equipment.

The clamping nuts are packed differently each depending on size, quantity and kind of transport. Unless otherwise contractually agreed, packaging will follow the in-house packaging specifications of KTR.

4 Assembly

4.1 Components of the KTR clamping nut

Components of the KTR clamping nut

Component	Quantity	Description
1	1	KTR clamping nut
1.1	1	Nut
1.2	1	Washer
1.3	1)	Pressure screw
2	2)	Screw

1) Quantity depends on the size of clamping nut (table 1).
2) Optionally available with dowel screw or dowel pin.

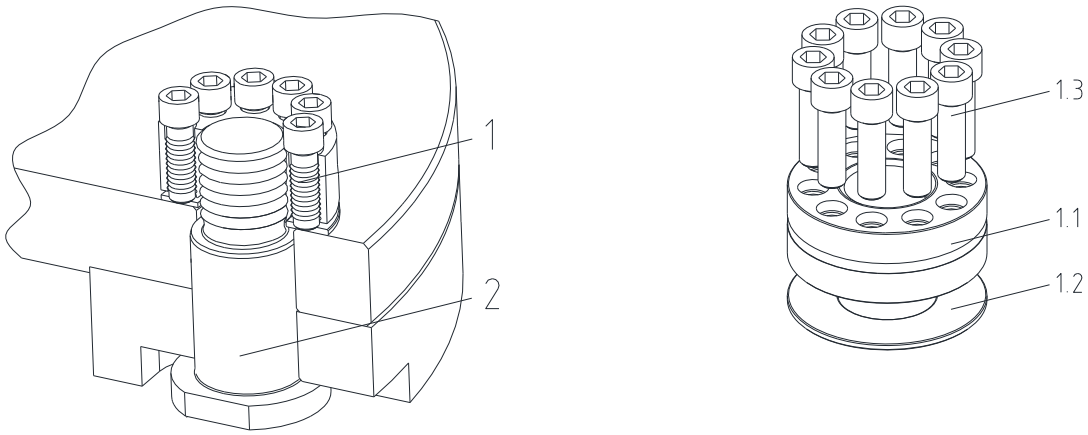

Illustration 3: Components of the KTR clamping nut

4 Assembly

4.2 Assembly of the clamping nut

- Clean and degrease the thread of the clamping nut and screws (component 1.3 and 2).

☞ **If the components are mounted with several clamping nuts (e. g. flange connections), each of the following steps on all clamping nuts must be completed before the next step follows.**

- The clamping screws (component 1.3) in the clamping nut must not jut out the pressure side (illustration 4).
- Shift the washer (component 1.2) onto the screw (component 2) up to the contact surface of the adjacent component. Afterwards screw on the nut (component 1.1) and hand-tighten it (see illustration 4).

⚠ **All components must be superimposed without any gap (illustration 4).**

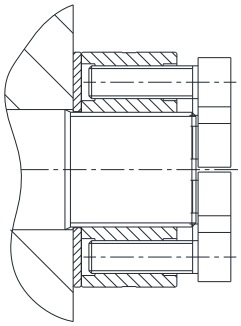

Illustration 4:

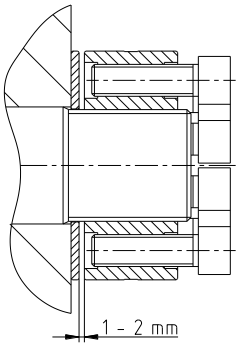

Illustration 5:

- Afterwards turn back the nut (component 1.1) until there is a gap of 1 - 2 mm (illustration 5).
- Hand-tighten the pressure screws marked in illustration 6.
- Tighten these screws (illustration 6) at half the tightening torque according to table 2 and afterwards at the full tightening torque according to table 2.
- Now tighten all pressure screws one after another and with several revolutions until all screws have achieved the full tightening torque.

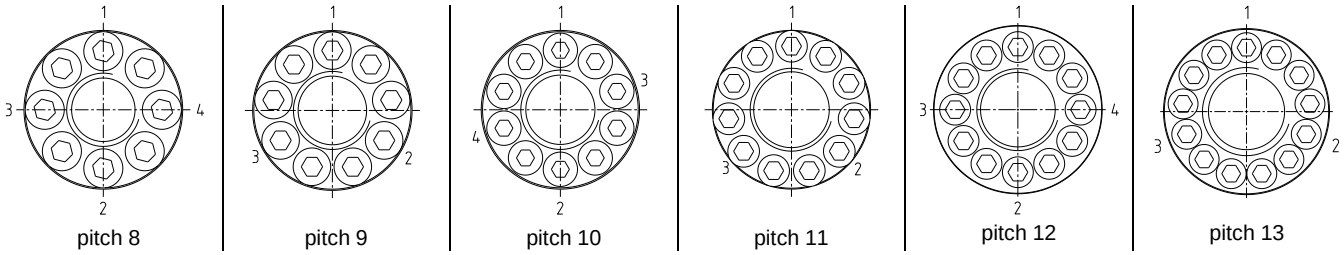

Illustration 6: Tightening of pressure screws

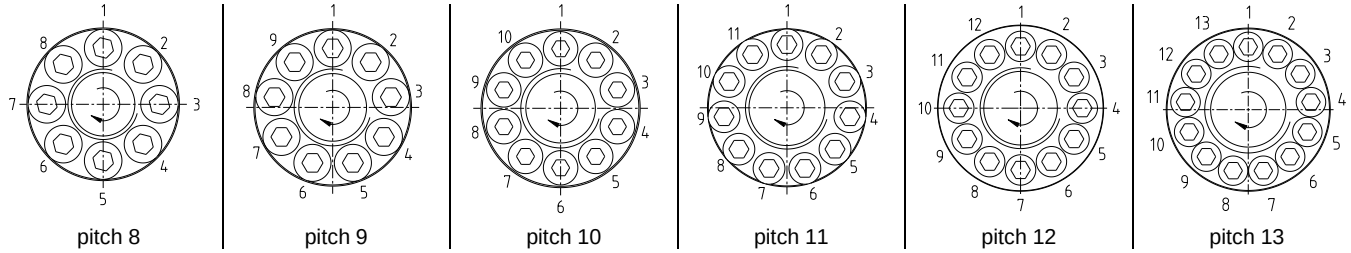

Illustration 7: Tightening of pressure screws (one after another)

4 Assembly

4.2 Assembly of the clamping nut

The pressure screws must <u>not</u> bear on the heads after assembly (see illustration 8).

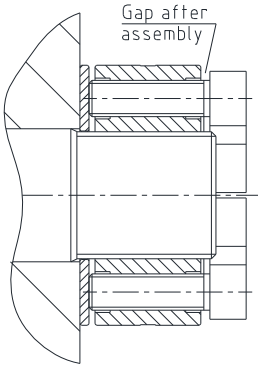

Illustration 8

Table 2: Tightening torques and screw pre-load

Size	Property class 8.8 [1] Screw (component 2)		Property class 10.9 [1] Screw (component 2)	
	Tightening torque T_A [Nm] Per pressure screw Component 1.3	Screw pre-load [kN]	Tightening torque T_A [Nm] Per pressure screw Component 1.3	Screw pre-load [kN]
M24	21	174	30	249
M27	24	224	30	280
M30	41	274	60	401
M33	45	338	60	451
M36	71	396	105	586
M42	78	544	105	732
M48	94	721	105	806
M52	95	862	105	952
M56	210	1001	250	1192
M60	215	1139	250	1325
M64	225	1311	250	1457
M72	400	1696	490	2077
M80	420	2137	490	2493

1) same or higher

4.3 Disassembly of clamping nut

- Untighten the pressure screws of the clamping nut with several revolutions by a quarter revolution until all screws are released from tension.

If components with several clamping nuts are disassembled (e. g. flange connections), each revolution (see above) must be performed one after the other on every clamping nut before the next revolution is started with.
The clamping nuts must not be disassembled individually.

Do not relieve and unscrew individual pressure screws completely in any case.

- Unscrew the clamping nut and remove the washer.

4 Assembly

4.4 Maintenance and service

The KTR clamping nuts have to be inspected after 500 hours of operation for the first time and afterwards **at least once a year**. Please pay special attention to the condition of the screwing.

After start-up of the machine the tightening torques of the clamping nuts' pressure screws have to be inspected during usual maintenance intervals.

5 Disposal

In respect of environmental protection we would ask you to dispose of the packaging or products on termination of their service life in accordance with the legal regulations and standards that apply, respectively.
All components of the clamping nut consist of metal. Any metal components have to be cleaned and disposed of by scrap metal.

6 Spares inventory, customer service addresses

A basic requirement to ensure the readiness for use of the drive components is a stock of some clamping nuts on site.

Contact addresses of the KTR partners for spare parts and orders can be obtained from the KTR homepage at www.ktr.com.

KTR does not assume any liability or warranty for the use of spare parts and accessories which are not provided by KTR and for the damages which may incur as a result.