

**Installation And Operating Instructions For
Taper Collet With Draw Bolt
E 01.806e**



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RINGSPANN® Clamping Fixtures	Installation And Operating Instructions For Taper Collet With Draw Bolt			E 01.806e	
Last updated: 08.11.2017	Version : 05	Signed: SCHC	Checked: SCHV	Number of pages: 9	Page: 2

IMPORTANT

Please read these instructions carefully before installing and operating the product. Your particular attention is drawn to the notes on safety.

These installation and operating instructions are valid on condition that the product meets the selection criteria for its proper use. Selection and design of the product is not the subject of these installation and operating instructions.

Disregarding or misinterpreting these installation and operating instructions invalidates any product liability or guarantee by RINGSPANN; the same applies if the product is taken apart or changed.

These installation and operating instructions should be kept in a safe place and should accompany the product if it is passed on to others – either on its own or as part of a machine – to make it accessible to the user.

SAFETY NOTICE

- Installation and operation of this product should only be carried out by skilled personnel.
- Repairs may only be carried out by the manufacturer or accredited RINGSPANN agents.
- If a malfunction is indicated, the product or the machine into which it is installed, should be stopped immediately and either RINGSPANN or an accredited RINGSPANN agent should be informed.
- Switch off the power supply before commencing work on electrical components.
- Rotating machine elements must be protected by the purchaser to prevent accidental contact.
- Supplies abroad are subject to the safety laws prevailing in those countries.

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1. General

1.1 General Safety Notices

The following hazard notices and warnings are used in these installation and operating instructions:



Warning!

This symbol indicates a situation where there is a risk of injury or danger for life or physical condition.



Caution!

This symbol indicates risks for the RINGSPANN product described and thus for equipment and machinery.



Note:

This symbol indicates notices, user tips and useful information.

- Use RINGSPANN products in a proper condition only.
- Take notice of all advices on the product.
- Comply with the indicated use.
- Before commissioning, ascertain and document that the machine the RINGSPANN product is to be built into is compliant with the country-specific regulations, rules of safety and standards.
- Perform a risk analysis for all parts and equipment of the machine with which safe operation of the RINGSPANN products is associated.

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1.2 Product-related Safety Notices



Warning!

In the case of design modifications to the workpiece in the area of the clamping point, the clamping fixture must be checked to ensure it is suitable.

Such changes include:

- Changes to the workpiece diameter at the clamping point
- Changes to the workpiece tolerances at the clamping diameter
- Changes to the clamping length at the workpiece



Warning!

The taper collet with draw bolt on the fixture must not be spinning driven by the machine without a clamped component or without a clamped inspection ring.

1.3 Further Applicable Documents

Catalogue 10 with further technical notices in the appendix.



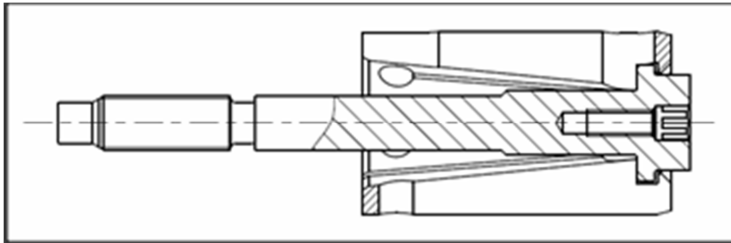
Note:

You will find the current versions of RINGSPANN data sheets and RINGSPANN catalogues at www.ringspann.com

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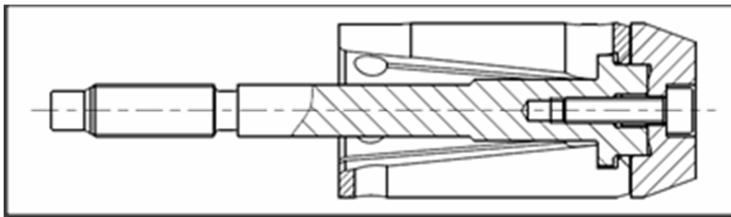
2. Design And Function

2.1 Design



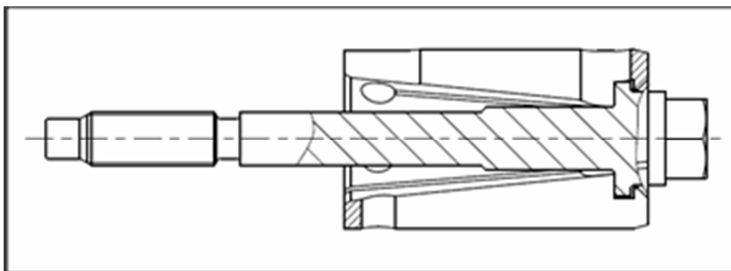
Type BKD

Taper collet with draw bolt



Type BVD

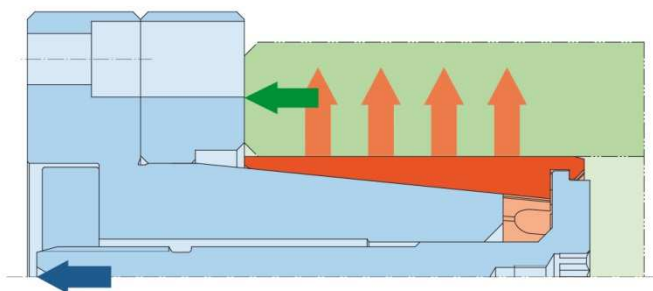
Taper collet with pre-centring



Type BAD

Taper collet with hexagon head

2.2 Clamping Principle



Key:

← Axial actuating force
 ↑ Radial clamping force
 ← Axial pull-back force

For clamping the Taper Collet is pulled against the seating body. The Component is centred, pressed against the backstop and aligned flush.

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The actuation of the drawbolt takes place for the types BKD or BAD either by a power actuation in the machine spindle or by hand actuation. For the hand actuation or for the assembly with the fixture all draw bolts have depending on the type either a socket hexagon or a hexagon head. The type BVD – Taper collet with pre-centring – size 12 and bigger can be actuated with a power actuation only when the pre-centring device is assembled.

3. Intended Use

The taper collet is designed

- for the mechanical processing of components
- for the static inspection (check of dimensions) or dynamic inspection (balancing).
- alignment of components during assembly

Clamping takes place in a pre-processed cylindrical bore hole.

4. Improper Use / Warnings



Warning!

Applications that deviate from those given in Chapter 3. **Intended use**, are not permissible.



Warning!

In the case of design modifications to the workpiece in the area of the clamping point, the clamping fixture must be checked it ensure it is suitable.

Such changes include:

- Changes to the workpiece diameter at the clamping point
- Changes to the workpiece tolerances at the clamping diameter
- Changes to the clamping length at the workpiece

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5. Technical Prerequisites For Safe Operation



Clamping takes place in a pre-processed cylindrical bore hole. The bore diameter must be within an IT7 tolerance over its entire length.

Caution!

Clamping in bore holes with a cylindricity outside an IT7 tolerance is not permissible.



Clamping takes place in a pre-processed cylindrical bore hole. The face of the workpiece is ideally processed with the same clamping as the bore diameter.

Caution!

Clamping may only take place in bore holes with an actual dimension that is within the maximum permissible diameter change ΔD ".
If the diameter change is greater than ΔD , it may be that the workpiece is not clamped and/or the necessary transmissible torque is not reached.



Caution!

When using a pneumatic or hydraulic power clamping fixture, it must be ensured that, during workpiece processing, there is always the necessary actuating pressure for the processing forces/processing moments.



Caution!

During clamping / declamping it must be ensured by practical technical methods that peak forces do not exceed the maximum actuating force.
The maximum actuating force depends on the size of the fixture. You will see the maximum actuating force in the currently valid datasheet which can be found under www.ringspann.com

6. Condition As Delivered

The taper collets type BKD, BVD or BAD are shipped according the ordered size and the ordered clamping range in assembled condition.

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7. Installation And Commissioning



Caution!

The power actuation in the machine spindle must be set to the released position. Ensure that during assembly / disassembly of the taper collet the power actuation can not be moved.

Switch the machine off.



Caution!

No lubricants with friction-reducing additives may be applied to the bore hole of the flexible coupling and to the shaft. The transmissible torque is considerably reduced by such lubricants.

- Screw the draw bolt in together with the taper collet
- Tighten the draw bolt via the hexagon.
- When applicable assemble the pre-centring and bolt it down by the central screw. Tightening torque acc. VDI2230.

In most of the cases the angular position of the taper collet is determined by a pin (size 12 and bigger) or a thin walled key (sizes 6 and 7). This is good for positioning only and is not provided for an additional torque transmission. In the taper collets (size 12 and bigger) is one wider slot. For the sizes 6 and 7 any of the slots can be used during assembly.

8 Maintenance And Repair

8.1 General Notices

The operating and ambient conditions for RINGSPANN clamping fixtures and clamping elements are different for each application. With its geometry, hardness, surface quality and kind of feed, the workpiece itself exerts influences on the clamping fixture. RINGSPANN can therefore not make any indications as to the wear properties of the clamping fixture and can only give general notices on maintenance.

The maintenance and cleaning of the clamping fixture should be carried out when the machine is maintained at the latest. More frequent maintenance intervals may be necessary depending on what is observed during operation and upon regular visual inspection (at the start of a shift for example).

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8.2 Exchanging of The Clamping Element



Caution!

Put the power clamping device in the machine spindle into relaxed position. Ensure that the power clamping fixture cannot be moved during the disassembly/assembly of the clamping fixture.

Switch the machine off.

- When applicable disassemble the pre-centring by untightening the central screw.
- Untighten the draw bolt via the hexagon
- Screw the draw bolt out together with the taper collet

Check all components for damage and wear. Exchange defective components. Assembly is carried out in reverse order. Screw tightening torque in accordance with VDI2230.



Thoroughly clean and lightly oil all components before assembly.

Caution!

No lubricants with friction-reducing additives may be used on the clamping elements and the components in contact with these.

9. Storage

If the clamping fixture is to remain on the machine tool, it is to be put into relaxed position. If put into storage, the clamping fixture is to be lightly oiled with an anti-corrosive oil (not wax) wrapped in anti-corrosive paper. The corrosion protection is to be renewed every 6 months.



Caution!

Taper Collet with draw bolt must not be loaded radially. The taper collet could be permanently deformed and defective.

10. Technical Data

The technical data is dependent on the size. See the data sheet in catalogue 10 – Precision Clamping Fixtures for this.



Note:

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