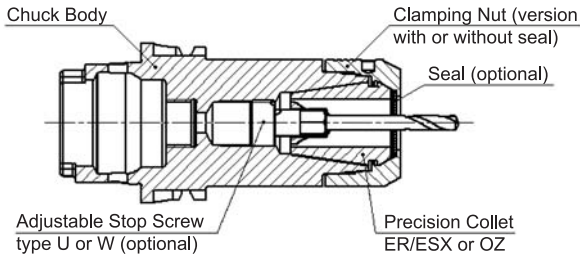


Operating Instructions

Precision Collet Chucks **CENTROJP®**

Please pay attention to the fact that **CENTROJP®** is a precision collet chuck system, and constructed to clamp nominal diameters only, in order to achieve highest possible system accuracy and optimum stability!

1. Design



2. General information

In order to guarantee the system accuracy of 3µm resp. 6µm, original FAHRION Precision Collets DIN ISO 15488 (ER/ESX) GER-HP /-HPD/-HPDD or DIN ISO 10897 (OZ) form B must be used, since they are perfectly matched to the chuck.

Please note that we have new and old versions of the OZ Collet Chuck types, where the collets are not interchangeable, i.e. the Collets 444E/450E are only fitting the old types CP225/CP432 and the Collets 462E/467E are only fitting the new types CP225DG/CP432DG.

Clamping of shanks with H10 tolerance without loss of accuracy and clamping force is provided.

Taps can be clamped in standard collets as well as in FAHRION tap collets GER-GBD. Tap collets GER-GB (old versions or collets from other manufacturers) can only be used in the tapping chuck SYNCHROJT with minimum length compensation.

The clamping nuts are available in two versions:

- Version without seal – the collet face is flush to the face of the clamping nut, i.e. the cutting tool can be clamped shorter and is therefore more stable
- Version with seal – for inner coolant supply as well as to avoid ingress of dirt and swarf into the chuck.

3. Tool length pre-setting

Tool length pre-setting is possible from the front as well as from the rear through the chuck body. In order to clamp the cutting tool in the optimum position (i.e. as short as possible, but as long as necessary), we offer two types of adjustable stops as options:

- type U, for long tool shanks that go through the collet into the collet chuck and
- type W, when the tool shank ends in the collet.

4. Coolant supply

CENTROJP® with adaptor DIN69871, MAS/BT and CAT are supplied in form AD or AD/ B. In the case of AD/B the delivery condition is form AD (centrally through the pull stud). If form B (coolant supply through the collar) is required, the two grub screws at the Vee flange must be screwed out, however, they must still remain in the chuck body.

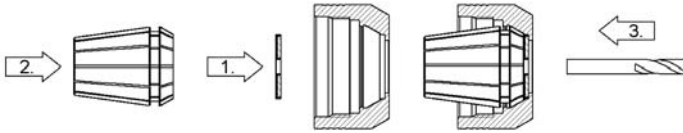
In some AD/B versions the grub screws have to be screwed out completely for form B.

Operating Instructions CENTROIP®

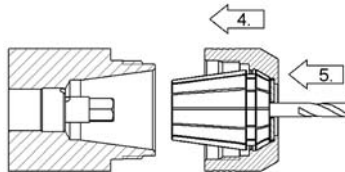
5. Clamping of the cutting tool

The clamping nut and the seal should be checked and if necessary cleaned before inserting. The utmost cleanliness must be ensured in order to guarantee high concentricity.

- If necessary, insert the seal (the vulcanised side must locate against the collet face).
- Press the collet axially into the clamping nut until the collet head clips into the extraction groove (note: no eccentric).



- Position the cutting tool into the collet. The shank of the cutting tool must be clamped by at least 3/4 of its length (full length in the case of smaller diameters), as otherwise there may be problems with concentricity or the clamping of the clamping nut.
- Length pre-setting from the front with screw driver/socket wrench if a stop screw is used.
- Screw on the clamping nut **by hand** loose on the chuck body.



- Insert the cutting tool to the correct length or until it reaches the stop. In the case of short chucks, make sure that the cutting tool does not contact the chuck at the rear, as otherwise the concentricity will be impaired.
- Alternatively length pre-set from the rear with T-handle hex wrenches (only if a stop screw is used).

6. Clamping of the cutting tool

We recommend the use of a torque wrench with the corresponding roller bearing head for clamping to achieve the optimum clamping force, particularly for milling.

Chuck type	Fitting Wrenches		Fitting Collets
	Wrenches	Heads for Torque Setting Wrenches	
CP8M	ROD10	–	GER8-HP
CP11M	RO16	DRO16 (9x12 mm)	GER11-HP
CP16M Ø 22 mm	RO22	DRO22 (9x12 mm)	GER16-HP/-HPD/-GBD
CP16M CPC16	RO24	DRO24 (9x12 mm)	
CP16	RO30	DRO30 (9x12 mm)	
CP20	RO32	DRO32 (9x12 mm)	GER20-HP/-HPD/-GBD
CP25	RO40	DRO40 (14x18 mm)	GER25-HP/-HPD/-HPDD/-GBD
CP32 CP225DG	RO50	DRO50 (14x18 mm)	GER32-HP/-HPD/-HPDD/-GBD
			FM25DG-HP
CP40 CP432DG	RO63	DRO63 (14x18 mm)	GER40-HP/-HPD/-GBD
			FM32DG

The maximum torques can be read below and on the clamping nuts. Please note, however, the smaller the diameter to be clamped, the smaller the clamping torque required. In the case of finishing operations we recommend tightening the clamping nut to 50-70% of the maximum tightening torque in order to achieve the optimum machining results by means of higher cushioning; otherwise, the following maximum tightening torques – referenced to the diameter to be clamped – can be used.

Clamping torques (M_a) for clamping nuts CENTRO|P®

Type	Ø	max. M_a	Ø	max. M_a	Ø	max. M_a	Ø	max. M_a
CP8M	1,0-2,5*	5Nm	3,0-5,0	8Nm	-	-	-	-
CP11M	1,0-2,5*	7Nm	3,0-7,0	10Nm	-	-	-	-
CP16M	1,0*	10Nm	1,5-3,5*	15-20Nm	4,0-10,0	25-30Nm	-	-
CPC16	1,0*	10Nm	1,5-3,5*	25-30Nm	4,0-10,0	50-55Nm	-	-
CP16	1,0*	10Nm	1,5-3,5*	25-30Nm	4,0-10,0	50-55Nm	-	-
CP20	1,0-3,0*	15-20Nm	3,0-5,5*	30-35Nm	6,0-9,0	50-55Nm	9,5-13,0	70-75Nm
CP25	1,0-3,0*	25-30Nm	3,5-6,5*	35-40Nm	7,0-10,0	55-60Nm	10,5-16,0	80-90Nm
CP32	2,0-3,0*	30-35Nm	3,5-6,5*	55-60Nm	7,0-15,5	110-120Nm	16,0-20,0	130-140Nm
CP40	3,0-7,0*	60-70Nm	8,0-11,0	100-110Nm	12,0-17,0	140-150Nm	18,0-26,0	190-200Nm
CP225DG	2,0-3,0*	30-35Nm	4,0-6,0*	55-60Nm	7,0-15,0	110-120Nm	16,0-25,0	130-140Nm
CP432DG	4,0-7,0*	100-120Nm	8,0-11,0*	140-150Nm	12,0-19,0	170-180Nm	20,0-32,0	250-260Nm

The diameters marked with an asterisk * are clamping diameters with a short bore. The remaining diameters have a through bore.

7. Balancing

Most CENTRO|P® chucks are balanced as standard to G2.5 at 25,000 rpm or $U \leq 1$ gmm. For higher demands in the case of long and thin chucks (dynamic balancing only necessary if $n > 20,000$ rpm and dimension $A > 2xD$ outer diameter of the adaptor) we recommend our system Balance, which can be rebalanced in two levels.

8. Changing the cutting tool

A roller wrench with a handle should be used to open the clamping nut. It is not recommended to open the clamping nut with a torque wrench.

It must be ensured that there is no swarf or dirt on the surfaces of the collet, which could negatively influence the system accuracy and damage the collet.

9. Changing the collet

When loosening the clamping nut the collet is extracted out of the chuck body. Having removed the cutting tool from the collet, lateral pressure to the collet will aid removal from the clamping nut.

10. Safety

Be aware of the safety instructions of the machine or other tools used! **Never work with open machine door**, especially at high speed or when using HSK tapers. Collisions at high speed could result in breakage of the cutting tool or collet chuck causing serious injury.

In cases where the balancing quality is relevant to safety or is prescribed by the machine manufacturer, the complete clamping system including the cutting tool must be checked for unbalance and rebalanced if necessary.

11. How to solve possible faults?

Fault	Causes	Elimination
unacceptable tool runout	dirt/swarf in chuck body, clamping sleeve, clamping nut or at the tool shank	clean all parts intensively and care for absolute cleanness
	cutting tool itself inaccurate, for example long drills	check cutting tool accuracy
	tool shank is not clamped sufficiently, minimum 3/4 (at small Ø completely) of the clamping length of the collet	tool shank to be inserted the whole length of the collet
	tool shank contacts the chuck (possible especially with short chucks)	pull the cutting tool out a little
	a worn, damaged or third party collet is in use	always use new original FAHRION precision collets
	bearing in the pre-setter or in the accuracy check machine is not o.k.	
unacceptable tool runout after automatic tool change	bearing problem in the machine	check the concentricity in the collet closing taper (without collet)
	internal cone of the machine is worn or there is dirt/swarf	
	automatic tool changer is not aligned to the machine spindle	clamp chuck by hand to check
coolant is escaping through the clamping nut	wrong seal is inserted – shank Ø is smaller than the Ø to be sealed	replace seal for correct size
	aggressive coolant	replace seal for new one
	tool is inserted with the cutting edge through the seal	replace seal if damaged and reposition tool
no coolant comes through the tool	coolant bores in the chuck, stop screw or the coolant supply of the machine are impaired.	clean the coolant bores with a cleaning medium (not acidic, because of the rust)