

**Verwendung:**

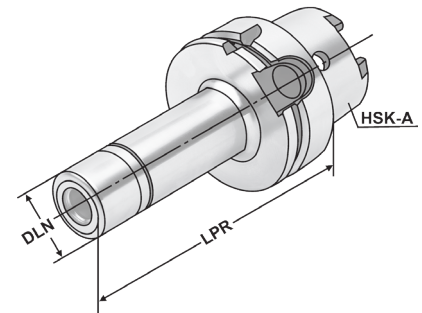
Zur Aufnahme von Werkzeugen mit Zylinderschaft in Spannzangen.
Für Anwendungen im HSC-Bereich und für hochpräzise Bearbeitungsergebnisse.

Application:

For mounting straight-shank tools in collets.
To use for high speed cutting and high precision milling.

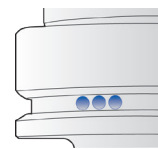
Utilisation:

Pour la fixation d'outils à queue cylindrique dans les pinces de serrage. Pour l'UGV (Usinage à Grande Vitesse) et pour des résultats d'usinage de haute précision.



Bestell-Nr. Order no. Référence	HSK	DCONWS Spannbereich Capacity Capacité	Typ	LPR	DLN	THID
A40.03.10	HSK-A 40	1 - 10	490EK KPS 10	75	27,5	M12 x 1,75
A40.03.16	HSK-A 40	4 - 16	496EK KPS 16	80	40,0	M18 x 1,50
A50.03.10	HSK-A 50	1 - 10	490EK KPS 10	60	27,5	M12 x 1,75
A50.03.16	HSK-A 50	4 - 16	496EK KPS 16	80	40,0	M18 x 1,50
A63.03.10	HSK-A 63	1 - 10	490EK KPS 10	100	27,5	M12 x 1,75
A63.03.10.2	HSK-A 63	1 - 10	490EK KPS 10	160	27,5	M12 x 1,75
A63.03.16	HSK-A 63	4 - 16	496EK KPS 16	120	40,0	M18 x 1,50
A63.03.16.2	HSK-A 63	4 - 16	496EK KPS 16	160	40,0	M18 x 1,50

Lieferumfang: Mit gewuchteter Spannmutter
Delivery: With balanced clamping nut
Livraison: Avec écrou de serrage équilibré

Gewuchtete Ausführung**Balanced type
Type équilibré**

Bestell-Nr. Order no. Référence	Abmessung Size Dimension
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**Wuchten auf G 2,5 von vorgewuchteten
Kemmler-Werkzeugen**

Balancing at G 2.5 of pre-balanced Kemmler-tools
Équilibrage sur G 2,5 d'outils Kemmler pré-équilibrés

W25

Ohne Wuchtprotokoll
Without balancing report
Sans protocole d'équilibrage

W25.2

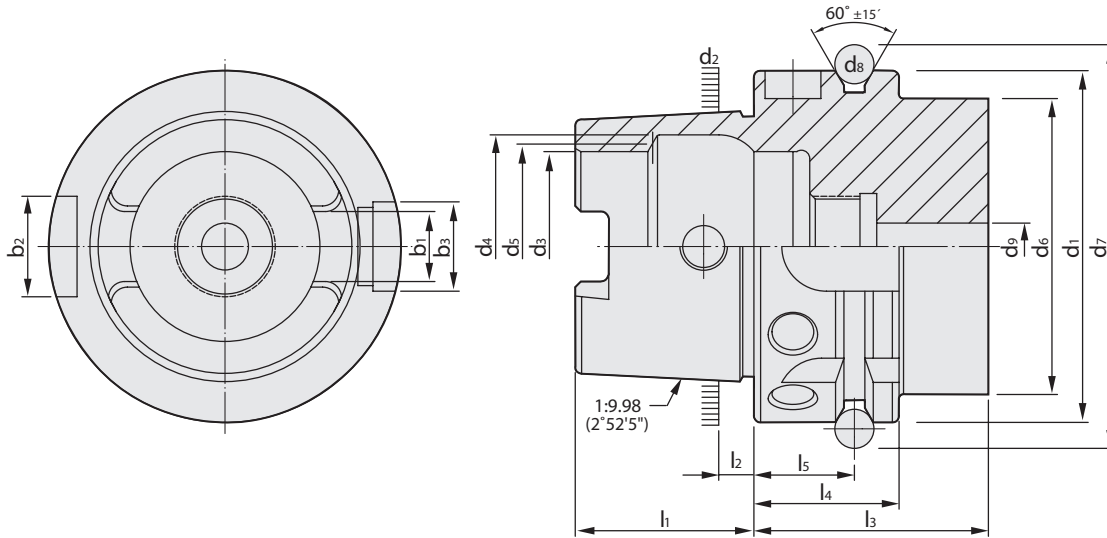
Mit Wuchtprotokoll
With balancing report
Avec protocole d'équilibrage

**Wuchten von nicht vorgewuchteten Werkzeugen
Balancing of unbalanced tools
Équilibrage d'outils non-équilibrés**

W25.1

Ohne Wuchtprotokoll
Without balancing report
Sans protocole d'équilibrage





5

HSK	d ₁	d ₂	d ₃	d ₄	d ₅	d ₆	d ₇	d ₈	d ₉	l ₁	l ₂	l ₃	l ₄	l ₅	b ₁	b ₂	b ₃
	h10		H10	H11		max	⁰ _{-0,1}		max	⁰ _{-0,2}		min	⁰ _{-0,1}	±0,1	±0,04	H10	H10
25	25	19,006	14	16,4	15	20	28,5	3	3	13	2,5	20	10	4,5	6,05	6	7
32	32	24,007	17	20,5	19	26	37	4	4,2	16	3,2	35	20	16	7,05	7	9
40	40	30,007	21	25,5	23	34	45	4	5	20	4	35	20	16	8,05	9	11
50	50	38,009	26	32	29	42	59,3	7	6,8	25	5	42	26	18	10,54	12	14
63	63	48,010	34	40	37	53	72,3	7	8,4	32	6,3	42	26	18	12,54	16	18
80	80	60,012	42	50	46	68	88,8	7	10,2	40	8	42	26	18	16,04	18	20
100	100	75,013	53	63	58	88	109,75	7	12	50	10	45	29	20	20,02	20	22
125	125	95,016	67	80	73	111	134,75	7	14	63	12,5	45	29	20	25,02	25	28

Vorgewuchtet G 6,3 15.000 min-1
 Pre-balanced G 6,3 15.000 min-1
 Pré-équilibré G 6,3 15.000 min-1

G 2,5 Feinwuchten gegen Aufpreis
 G 2.5 Fine balancing at extra charge
 G 2,5 Equilibrage fin contre un supplément

Werkstoff: Legierter Einsatzstahl mit einer Zugfestigkeit im Kern von min. 950 N / mm². Einsatzgehärtet HRC 60 ± 2 (HV 700 ± 50), Härtetiefe 0,8 mm ± 0,2 mm, brüniert und präzisionsgeschliffen.

Material: Alloyed case-hardened steel, tensile core strength of min. 950 N / mm². Case hardened HRC 60 ± 2 (HV 700 ± 50), hardening depth 0.8 mm ± 0.2 mm, black-finished and precisely grinded.

Matière: Acier de cémentation allié. Résistance à la traction dans le noyau de min 950 N / mm². Cémentation à HRC 60 ± 2 (HV 700 ± 50), profondeur de cémentation 0,8 mm ± 0,2 mm, bruni et rectifié précisément.

Normative Verweise:

ISO 12164-1:2001-12
 Hohlkegelschnittstelle mit Plananlage
 - Teil 1: Schäfte; Maße

Normative references:

ISO 12164-1:2001
 Hollow taper interface with flange contact surface
 - Part 1: Shanks; Dimensions

Références normatives:

ISO 12164-1:2001
 Interfaces à cône creux-face
 - Partie 1: Queues; Dimensions

DIN 69893-1:2011
 Kegel-Hohlschäfte mit Plananlage besteht aus:
 - Teil 1: Kegel-Hohlschäfte Form A und Form C;
 Maße und Ausführung

DIN 69893-1:2011
 Hollow taper shanks with flange contact surface:
 - Part 1: Hollow taper shanks type A and type C;
 Dimensions and design

DIN 69893-1:2011
 Queues creuses coniques à surface de contact plane:
 - Partie 1: Queues creuses coniques type A et type C;
 Dimensions et conception



Example:

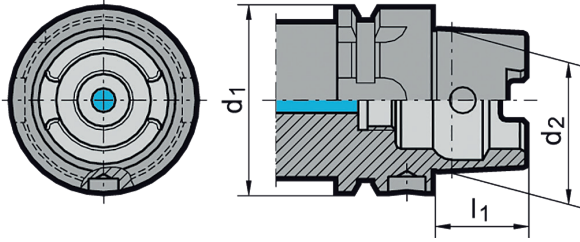
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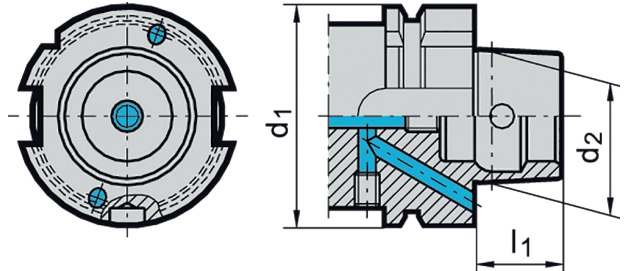
DIN 69063-1 (ISO 12164-1) Form A

Standard type for machining centres and milling machines. HSK for automatic tool change with gripper groove and index notch. Manual operation is via access hole in taper. Form B relies on driving dogs on the joint face as shank isn't slotted. Torque is transmitted through highly accurate connection.



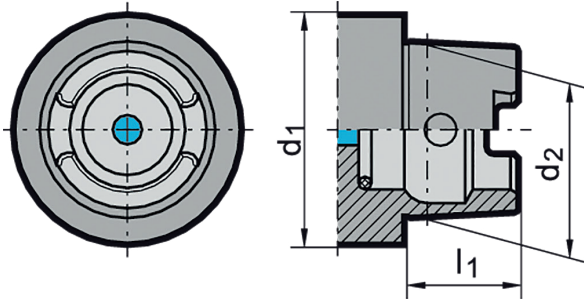
DIN 69063-2 (ISO 12164-1) Form B

For machining centres, milling and turning machines. With enlarged flange size for rigid machining. For automatic tool change. Coolant supply through the flange. Drive keys at the flange. Hole for data carrier DIN STD 69873 at the flange.



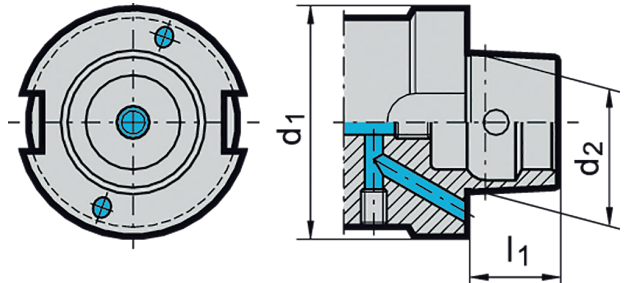
DIN 69063-1 (ISO 12164-1) Form C

For transfer lines, special machines and modular tooling systems. HSK for manual tool change. Operation is via access hole in taper. Form D relies on driving dogs on the joint face as shank isn't slotted. Torque is transmitted through highly accurate connection.



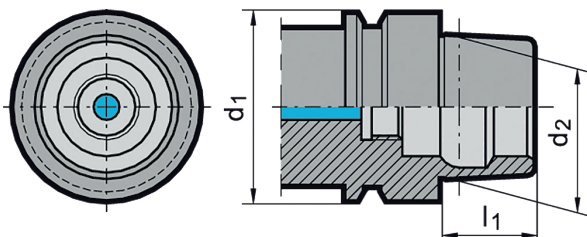
DIN 69063-2 (ISO 12164-2) Form D

For special machines. With enlarged flange size for rigid machining. For manual tool change. Coolant supply through the flange. Drive keys at the flange.



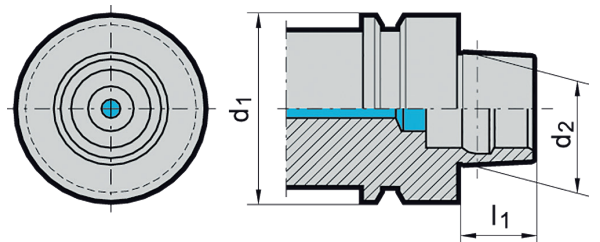
DIN 69063-5 Form E

For high-speed applications. For automatic tool change. HSK for automatic tool change. Torque is transmitted through highly accurate connection. Version with access hole acc. to DIN 69893-1 by arrangement.



DIN 69063-6 Form F

For high-speed applications mainly in woodworking industries. HSK for automatic tool change. Torque is transmitted through highly accurate connection. Version with access hole acc. to DIN 69893-1 by arrangement.





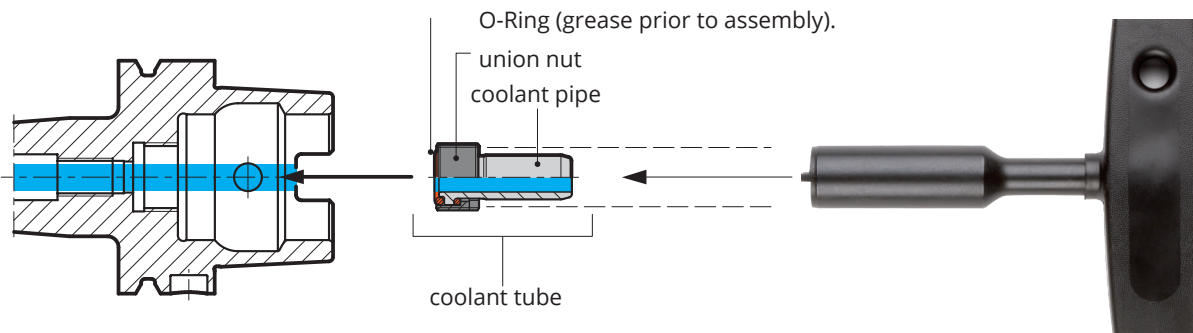
HSK form A, -B or -D holders must be equipped with a coolant tube.

Using holders without a coolant tube could cause unseen machine spindle damage.

DIN 69893 Form C, -E and -F do not require a coolant tube. Through coolant and sealing functions are provided by the locking unit.

The coolant tube is ideally mounted in vertical direction – from the bottom to the top. In this manner the sealing ring is prevented from being compressed during location which would cause the loss of its sealing function.

After mounting, the coolant pipe can be moved only to a minimum degree according to DIN ($\pm 1^\circ$).



Installation

1. The HSK holder must be clean, free of swarf and undamaged.
2. Grease the O-rings prior to assembly.
3. Centrally insert the complete coolant tube (coolant pipe, union nut and 2 O-rings) in the HSK with the assistance of the socket spanner.
4. Screw in the coolant tube and tighten (see table for torque figures)
5. Check coolant pipe for radial mobility.

Torque figures

for HSK	Mt (Nm)
32	7
40	11
50	15
63	20
80	25
100	30

K High precision collet chucks KPS-system



The high precision collet chuck (KPS) is the alternative to hydraulic expansion chucks and shrink chucks.

High flexibility due to interchangeable collets (precision collets System KPS available from Ø 0.5 up to 16 mm).

High clamping forces and concentricity lead to top surfaces and longer tool life.

Plain clamping nut without grooves for high speed machining.

Slim version.



Tool shanks:

Cylindrical DIN 1835-1 form A/DIN 6535 form HA, tolerance h_8 .

Dedicated clamping size on the nominal diameter. Collets available in steps of 0.5 mm.

Run-out:

Maximum runout when measured at a gauge projection of $4 \times d$ in relation to the external taper is $5 \mu\text{m}$.

Balancing:

Fine balancing is standard (G 2.5 30,000 min^{-1}).

Note:

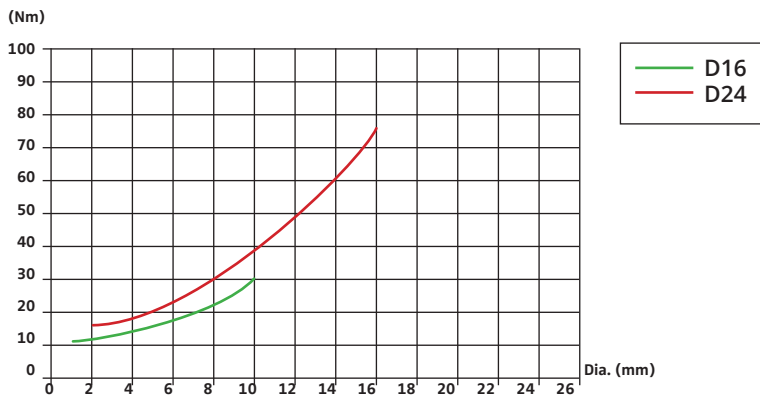
KPS-system chucks are delivered as standard without stop end screws. The use of stop end screws is not recommended at high spindle speeds, e.g. over 10,000 rpm.

Collet chuck size	Capacity d mm	D	L ₁	M	S	Max. tightening torque	D type clamping system max. Rpm*
D16	1 – 10	27	19	M20 × 1	24	40 Nm	60,000
D24	2 – 16	36	22	M28 × 1	32	70 Nm	40,000

* The maximum rpm for holders equipped with this clamping system is often restricted by the holder's back-end taper type and size.



Transmittable static torque to the tool shank (Nm)



Assembly advice for KPS-system collets with a collet extractor

1. Remove the nut from the chuck.
2. Insert and squeeze the collet into the collet extractor.*
3. Insert the unit collet + ring into the nut until stop end.
4. Push the back end of the collet to remove the unit collet + nut from the ring.
5. Mount the nut together with the collet on the collet chuck.



To dismantle, push unit collet + nut into the collet extractor in order to squeeze the collet. Remove the nut.

Finally, push the back end of the collet to remove it from the collet extractor.

The collet must always be inserted into the nut, and the nut screwed onto the chuck before introducing the tool into the collet.

Never lock the nut without a tool shank located in the full length of the collet.



KPS-Collet



KPS-Collet extractor



KPS-Collet nut



KPS-Wrench