

Member IMC Group
Ingersoll
Cutting Tools

TOOLHOLDERS





Ingersoll **BORE**line

In response to many requests from our Customers, Ingersoll Cutting Tools presents our complete Rotary Toolholder catalog. As your productivity partner, we fully understand a comprehensive, high-quality tool holding product line is a key component needed to keep you in front of your competition. We have addressed that by expanding the selection of both our stocked standard tool holders as well as some unique items to our shelves.

We provide a wide array of products designed to allow your machine tools to take full advantage of today's advanced cutting tool technologies. Whether a milling cutter on a milling machine, an indexable drill on a machining center, solid carbide tools on a mill-turn center, or any combination of these, Ingersoll Cutting Tools is the one source for all your tool holding requirements.

Working through our extensive network of technical Distributors, our experienced Field Sales Engineers are able to recommend the appropriate tooling for your application. They will work with you on site until the tools are working the way you expect them to perform. Only then do we consider the job complete.

Inside this catalog you will find the D'Andrea MONOd and MONOFORCE holders, as well. Please take a moment to familiarize yourself with these great new additions to the BOREline family.

Sincerely,

The Ingersoll BOREline Group



100



Ingersoll



CUTTING TOOLS
CUTTING TOOLS

TOOL HOLDERS

Cutting Tools



TOOL HOLDERS

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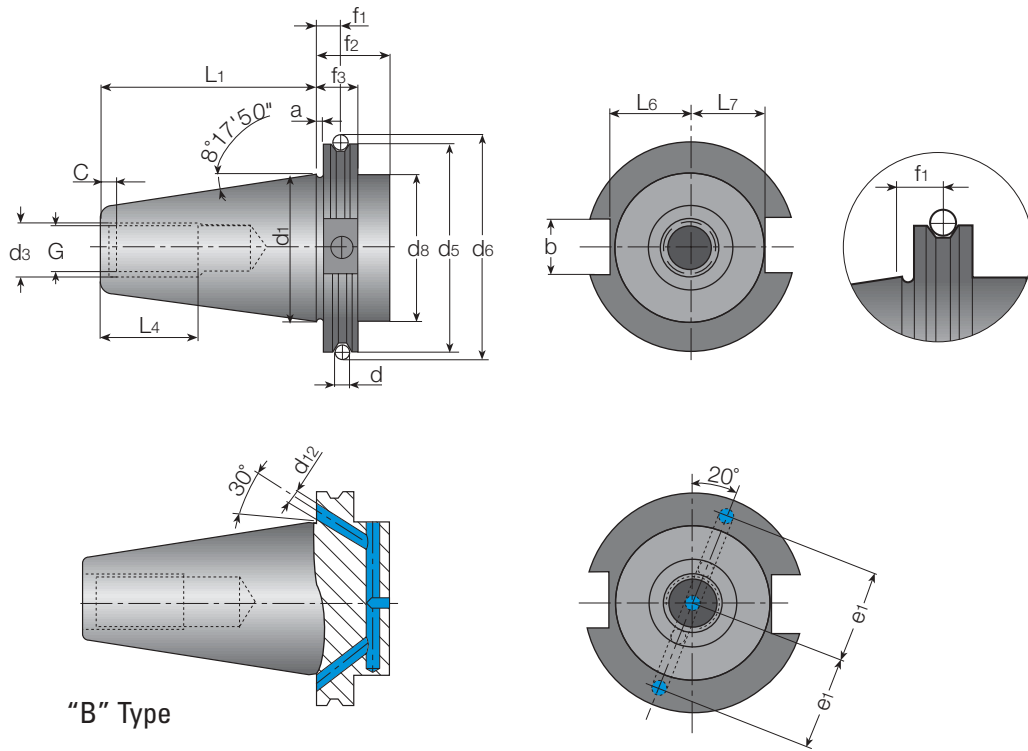
OLDERS

CUTTING
TOOL

D'ANDREA TOOLHOLDERS

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CAT - TOOLHOLDER STANDARD



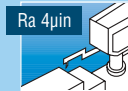
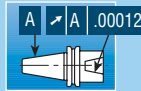
CAT A.N.S.I. B5.50

Shank	b ±.001	d	d ₁	G UNC-2B	d ₃ ±.01	C ±.01	d ₆ ±.002	d ₅ ±.002	d ₈ ±.005	f ₁ ±.005
CAT 30	.645	.2756	1.250	1/2-13	.590	.188	2.176	1.812	1.250	.4375
CAT 40	.645	.2756	1.750	5/8-11	.720	.188	2.863	2.500	1.750	.4375
CAT 50	1.02	.2756	2.750	1-8	1.125	.250	4.238	3.875	2.750	.4375

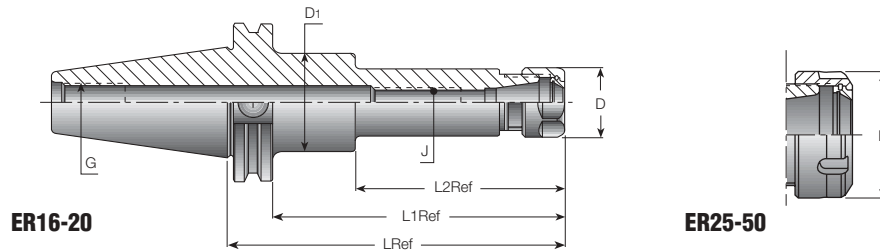
Shank	f ₂ MIN	f ₃ ±.002	L ₁ ±.005	L ₄ MIN	L ₆ .000-.015	L ₇ .000-.015	e ₁ ±.004	d ₁₂	a
CAT 30	1.38	.750	1.875	1.000	.735	.640	.826	.157	.125
CAT 40	1.38	.750	2.687	1.120	.985	.890	1.062	.157	.125
CAT 50	1.38	.750	4.000	1.750	1.485	1.390	1.653	.236	.125

CAT - ER COLLET CHUCK

Taper Size
CAT-30, 40 and 50



G2.5
20,000 RPM

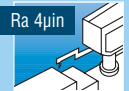
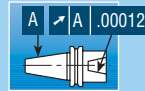


Designation	Range	L	L ₁	L ₂	D	D ₁	J	G
CAT30 ER16X2.750*	.022-.396	2.750	2.000	1.370	1.102	1.248	M10	1/2-13
CAT40 ER16X2.750	.022-.396	2.750	2.000	1.370	1.102	1.752	M12	5/8-11
CAT40 ER16X3.937	.022-.396	3.937	3.187	2.560	1.102	1.752	M12	5/8-11
CAT40 ER16X5.906	.022-.396	5.906	5.156	3.350	1.102	1.752	M12	5/8-11
CAT40 ER20X3.937	.041-.514	3.937	3.187	2.560	1.339	1.752	M12	5/8-11
CAT40 ER20X4.000	.041-.514	4.000	3.250	2.620	1.339	1.752	M12	5/8-11
CAT40 ER20X5.906	.041-.514	5.906	5.156	3.780	1.339	1.752	M12	5/8-11
CAT50 ER16X3.937*	.022-.396	3.937	3.187	2.560	1.102	2.752	M12	1-8
CAT50 ER16X5.906*	.022-.396	5.906	5.156	3.490	1.102	2.752	M12	1-8
CAT50 ER16X8.000*	.022-.396	8.000	7.250	2.980	1.102	2.752	M12	1-8
CAT50 ER20X3.937*	.041-.514	3.937	3.187	2.560	1.349	2.752	M16	1-8
CAT50 ER20X5.906*	.041-.514	5.906	5.156	4.530	1.349	2.752	M16	1-8
CAT50 ER20X8.000*	.041-.514	8.000	7.250	4.620	1.339	2.752	M16	1-8

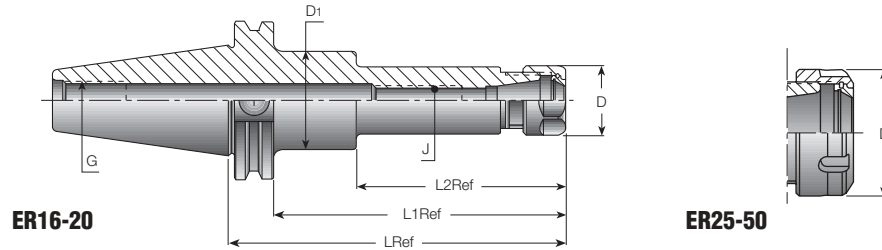
Add B for internal coolant flange.
*Balance to G6.3 12000 RPM.

CAT - ER COLLET CHUCK

Taper Size
CAT-30, 40 and 50



G2.5
20,000 RPM

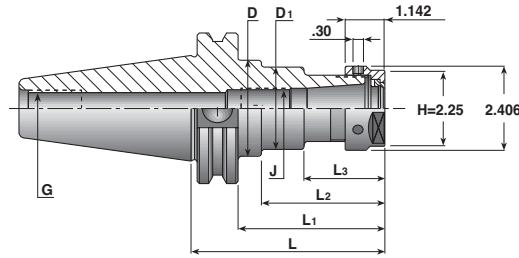
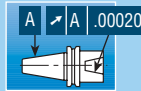


Designation	Range	L	L ₁	L ₂	D	D ₁	J	G
CAT30 ER32X3.268*	.080-.789	3.268	2.518	1.890	1.968	1.248	M18X1.5	1/2-13
CAT40 ER25X2.562	.041-.632	2.562	1.812	1.180	1.654	1.752	M16	5/8-11
CAT40 ER25X4.000	.041-.632	4.000	3.250	2.620	1.654	1.752	M16	5/8-11
CAT40 ER25X6.000	.041-.632	6.000	5.250	4.620	1.654	1.752	M16	5/8-11
CAT40 ER32X2.562	.080-.789	2.562	1.812	-	1.968	1.752	M22X1.5	5/8-11
CAT40 ER32X 4.000	.080-.789	4.000	3.250	-	1.968	1.752	M22X1.5	5/8-11
CAT40 ER32X 6.000	.080-.789	6.000	5.250	-	1.968	1.752	M22X1.5	5/8-11
CAT40 ER40X3.359	.120-1.025	3.359	2.609	-	2.480	1.752	M28X1.5	5/8-11
CAT40 ER40X 4.000	.120-1.025	4.000	3.250	-	2.480	1.752	M28X1.8	5/8-11
CAT50 ER25X4.000*	.041-.632	4.000	3.250	2.580	1.654	2.752	M16	1-8
CAT50 ER25X6.000*	.041-.632	6.000	5.250	4.620	1.654	2.752	M16	1-8
CAT50 ER25X8.000*	.041-.632	8.000	7.250	6.580	1.654	2.752	M16	1-8
CAT50 ER32X4.000*	.080-.789	4.000	3.250	2.540	1.968	2.752	M22X1.5	1-8
CAT50 ER32 X6.000*	.080-.789	6.000	5.250	4.580	1.968	2.752	M22X1.5	1-8
CAT50 ER32 X8.000*	.080-.789	8.000	7.250	6.580	1.968	2.752	M22X1.5	1-8
CAT50 ER40 X4.000*	.120-1.025	4.000	3.250	2.620	2.480	2.752	M28X1.5	1-8
CAT50 ER40 X6.000*	.120-1.025	6.000	5.250	4.620	2.480	2.752	M28X1.5	1-8
CAT50 ER40 X8.000*	.120-1.025	8.000	7.250	6.580	2.480	2.752	M28X1.5	1-8
CAT50 ER50 X4.000*	.396-1.338	4.000	3.250	-	3.070	2.752	M36X1.5	1-8
CAT50 ER50 X6.000*	.396-1.338	6.000	5.250	-	3.070	2.752	M36X1.5	1-8

Add B for internal coolant flange.
*Balance to G6.3 12000 RPM.

CAT - TG COLLET CHUCK

Taper Size
CAT-40 and 50



Designation	Range	L	L ₁	L ₂	L ₃	D	D ₁	J*	G
CAT40 TG100X3.000	.094-1.000	3.000	2.250	1.612	-	1.752	-	1-1/8-16	5/8-11
CAT40 TG100X4.000	.094-1.000	4.000	3.250	2.620	-	1.752	-	1-1/8-16	5/8-11
CAT40 TG100X6.000	.094-1.000	6.000	5.250	4.620	-	1.752	-	1-1/8-16	5/8-11
CAT50 TG100X3.000	.094-1.000	3.000	2.250	1.620	-	2.752	-	1-1/8-16	1-8
CAT50 TG100X3.500	.094-1.000	3.500	2.750	2.120	-	2.752	-	1-1/8-16	1-8
CAT50 TG100X5.500	.094-1.000	5.500	4.750	4.120	2.315	2.752	2.362	1-1/8-16	1-8
CAT50 TG100X7.500	.094-1.000	7.500	6.750	4.118	2.307	2.752	2.500	1-1/8-16	1-8

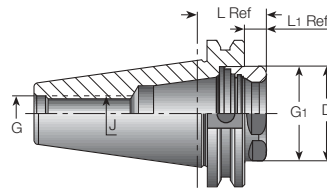
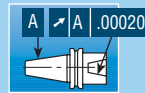
Add B for internal coolant flange.

Collet Chuck TG100 is interchangeable with the following collets: Kennametal TG 100, Command 1000, Valenite OSG, Lyndex 1000.

*Left-hand thread.

CAT - SHORT ENDMILL HOLDER

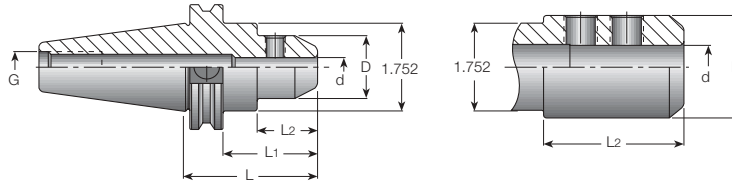
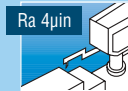
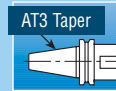
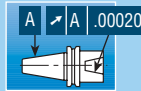
Taper Size
CAT-40



Designation	d	L	L ₁	D	G
CAT40 EM 3/8X1.750	.375	1.750	1.000	1.500	5/8-11
CAT40 EM 1/2X1.750	.500	1.750	1.000	1.500	5/8-11
CAT40 EM 5/8X1.750	.625	1.750	1.000	1.500	5/8-11
CAT40 EM 3/4X1.750	.750	1.750	1.000	1.750	5/8-11
CAT40 EM 1X1.750	1.000	1.750	1.000	2.000	5/8-11
CAT40 EM 1-1/4X2.000	1.250	2.000	1.250	2.250	5/8-11

CAT - ENDMILL HOLDER

Taper Size
CAT-40

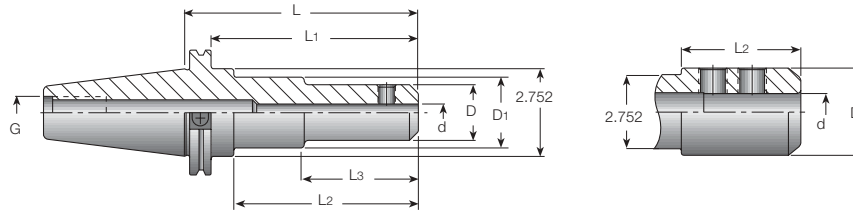
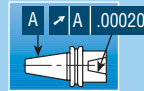


Designation		d	L	L ₁	L ₂	D G
CAT40 EM 3/16X2.500	.187	2.500	1.750	1.121	.866	5/8-11
CAT40 EM 1/4X2.500	.250	2.500	1.750	1.121	1.000	5/8-11
CAT40 EM 3/8X2.500	.375	2.500	1.750	1.121	1.248	5/8-11
CAT40 EM 1/2X2.625	.500	2.625	1.875	-	-	5/8-11
CAT40 EM 5/8X3.750	.625	3.750	3.000	-	-	5/8-11
CAT40 EM 3/4X3.750	.750	3.750	3.000	-	-	5/8-11
CAT40 EM 7/8X4.000	.875	4.000	3.250	2.620	2.047	5/8-11
CAT40 EM 1X4.000	1.000	4.000	3.250	2.620	2.559	5/8-11
CAT40 EM 1-1/4X4.250	1.250	4.250	3.500	2.870	2.752	5/8-11
CAT40 EM 1-1/2X4.625	1.500	4.625	3.875	3.245	3.150	5/8-11

Add B for internal coolant flange.

CAT - ENDMILL HOLDER

Taper Size
CAT-50

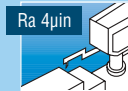
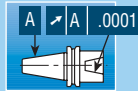


Designation	d	L	L ₁	L ₂	L ₃	D	D ₁	G
CAT50 EM 1/4 X2.500	.250	2.500	1.750	1.120	-	1.000	-	1-8
CAT50 EM 1/4 X4.500	.250	4.500	3.750	3.150	-	1.000	-	1-8
CAT50 EM 1/4 X6.250	.250	6.250	5.500	4.870	2.756	1.000	1.969	1-8
CAT50 EM 3/8 X2.500	.375	2.500	1.750	1.120	-	1.248	-	1-8
CAT50 EM 3/8 X4.500	.375	4.500	3.750	3.120	-	1.248	-	1-8
CAT50 EM 3/8 X6.500	.375	6.500	5.500	5.120	3.130	1.248	1.969	1-8
CAT50 EM 1/2 X2.625	.500	2.625	1.875	1.245	-	1.752	-	1-8
CAT50 EM 1/2 X4.625	.500	4.625	3.875	3.245	-	1.752	-	1-8
CAT50 EM 1/2X6.625	.500	6.625	5.875	5.245	3.248	1.752	2.205	1-8
CAT50 EM 5/8 X3.750	.625	3.750	3.000	2.370	-	1.752	-	1-8
CAT50 EM 5/8X5.750	.625	5.750	5.000	4.370	-	1.752	-	1-8
CAT50 EM 5/8X7.750	.625	7.750	7.000	6.370	4.390	1.752	2.165	1-8
CAT50 EM 3/4 X3.750	.750	3.750	3.000	2.370	-	1.772	-	1-8
CAT50 EM 3/4 X5.750	.750	5.750	5.000	3.150	-	1.772	-	1-8
CAT50 EM 3/4X7.750	.750	7.750	7.000	6.370	3.150	1.772	2.264	1-8
CAT50 EM 7/8 X3.750	.875	3.750	3.000	2.370	-	2.047	-	1-8
CAT50 EM 7/8X5.750	.875	5.750	5.000	3.150	-	2.047	-	1-8
CAT50 EM 7/8X7.750	.875	7.750	7.000	3.150	-	2.047	-	1-8
CAT50 EM 1 X4.000	1.000	4.000	3.250	2.620	-	2.559	-	1-8
CAT50 EM 1 X6.000	1.000	6.000	5.250	4.620	-	2.559	-	1-8
CAT50 EM 1 X8.000	1.000	8.000	7.250	4.625	-	2.559	-	1-8
CAT50 EM 1-1/4X4.000	1.250	4.000	3.250	-	-	-	-	1-8
CAT50 EM 1-1/4X6.000	1.250	6.000	5.250	-	-	-	-	1-8
CAT50 EM 1-1/4X8.000	1.250	8.000	7.250	-	-	-	-	1-8
CAT50 EM 1-1/2X4.000	1.500	4.000	3.250	2.620	-	3.150	-	1-8
CAT50 EM 1-1/2X6.000	1.500	6.000	5.250	4.620	-	3.150	-	1-8
CAT50 EM 1-1/2X8.000	1.500	8.000	7.250	6.620	-	3.150	-	1-8
CAT50 EM 2 X5.625	2.000	5.625	4.875	4.245	-	3.740	-	1-8

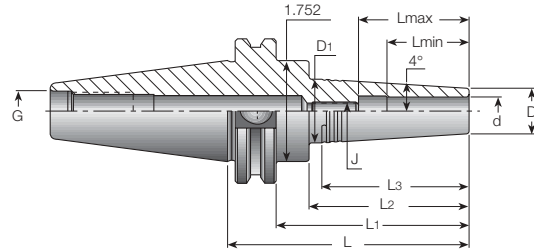
Add B for internal coolant flange.

CAT - THERMAL SHRINKIN HOLDER

Taper Size
CAT-40



G2.5
25,000 RPM

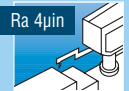
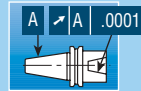


Designation	d	D	D ₁	L	L ₁	L ₂	L ₃	L _{min}	L _{max}	J	G	Hex Key*
CAT40 SRK 1/8x2.000	.125	.394	.591	3.380	2.630	2.000	1.400	.394	.630	M6	5/8-11	3
CAT40 SRK 1/8x3.250	.125	.394	.748	4.630	2.880	3.250	2.526	.394	.630	M6	5/8-11	3
CAT40 SRK 3/16x2.000	.188	.394	.591	3.380	2.630	2.000	1.400	.591	.827	M6	5/8-11	3
CAT40 SRK 3/16x3.250	.188	.394	.748	4.630	2.880	3.250	2.526	.591	.827	M6	5/8-11	3
CAT40 SRK 1/4x2.000	.250	.433	.630	3.380	2.630	2.000	1.398	.709	.945	M8	5/8-11	4
CAT40 SRK 1/4x3.250	.250	.433	.787	4.630	2.880	3.250	2.524	.709	.945	M8	5/8-11	4
CAT40 SRK 5/16x2.000	.313	.551	.787	3.380	2.630	2.000	1.673	.984	1.220	M10	5/8-11	5
CAT40 SRK 5/16x3.250	.313	.551	.906	4.630	2.880	3.250	2.518	.984	1.220	M10	5/8-11	5
CAT40 SRK 3/8x2.000	.375	.630	.866	3.380	2.630	2.000	1.669	1.181	1.417	M12	5/8-11	6
CAT40 SRK 3/8x3.250	.375	.630	.965	4.630	2.880	3.250	2.373	1.181	1.417	M12	5/8-11	6
CAT40 SRK 7/16x2.000	.438	.787	1.024	3.380	2.630	2.000	1.665	1.220	1.614	M10	5/8-11	5
CAT40 SRK 7/16x3.250	.438	.787	1.102	4.630	2.880	3.250	2.228	1.220	1.614	M10	5/8-11	5
CAT40 SRK 1/2x2.000	.500	.787	1.024	3.380	2.630	2.000	1.665	1.260	1.654	M10	5/8-11	5
CAT40 SRK 1/2x3.250	.500	.787	1.102	4.630	2.880	3.250	2.228	1.260	1.654	M10	5/8-11	5

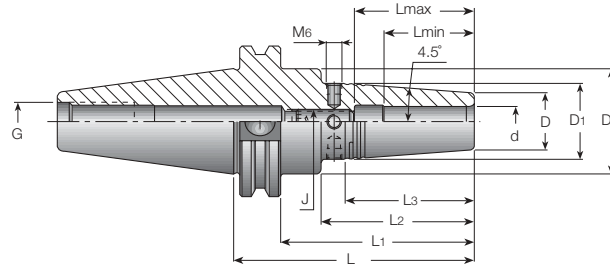
* Metric

CAT - THERMAL SHRINKIN HOLDER

Taper Size
CAT-40 and 50



G2.5
25,000 RPM

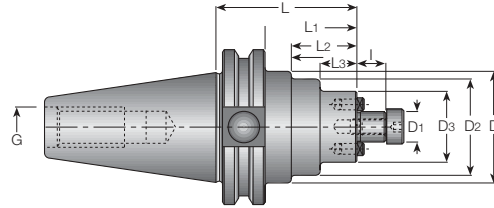
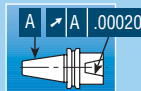


Designation	d	D	D ₁	D ₂	L	L ₁	L ₂	L ₃	L _{min}	L _{max}	J	G	Hex Key *
CAT40 SRKIN 1/4X3.500	.250	.827	1.063	1.752	3.500	2.750	2.120	1.501	.984	1.417	M5	5/8-11	2.5
CAT40 SRKIN 5/16X3.500	.313	.827	1.063	1.752	3.500	2.750	2.120	1.501	.984	1.417	M6	5/8-11	3.0
CAT40 SRKIN 3/8 X3.750	.375	.945	1.260	1.752	3.750	3.000	2.370	2.000	1.220	1.654	M8	5/8-11	4.0
CAT40 SRKIN 7/16X3.750	.438	.945	1.260	1.752	3.750	3.000	2.370	2.001	1.417	1.850	M10	5/8-11	5.0
CAT40 SRKIN 1/2 X3.750	.500	.945	1.260	1.752	3.750	3.000	2.370	2.001	1.417	1.850	M10	5/8-11	5.0
CAT40 SRKIN 5/8 X3.750	.625	1.063	1.339	1.752	3.750	3.000	2.370	1.751	1.535	1.969	M12	5/8-11	6.0
CAT40 SRKIN 3/4 X4.000	.750	1.299	1.654	1.752	4.000	3.250	2.620	2.251	1.614	2.047	M16	5/8-11	8.0
CAT40 SRKIN 7/8 X4.000	.875	1.732	2.087	1.752	4.000	3.250	2.620	2.251	1.614	2.047	M16	5/8-11	8.0
CAT40 SRKIN 1 X4.000	1.000	1.732	2.087	1.752	4.000	3.250	2.620	2.251	1.850	2.283	M16	5/8-11	8.0
CAT40 SRKIN 1-1/4 X4.000	1.250	1.732	2.087	1.752	4.000	3.250	2.620	2.251	1.850	2.283	M16	5/8-11	8.0
CAT50 SRKIN 1/4 X3.500**	.250	.827	1.063	2.752	3.500	2.750	2.120	1.501	.984	1.417	M5	1-8	2.5
CAT50 SRKIN 5/16X3.500**	.313	.827	1.063	2.752	3.500	2.700	2.120	1.501	.984	1.417	M6	1-8	3.0
CAT50 SRKIN 3/8 X3.750**	.375	.945	1.260	2.752	3.750	3.000	2.370	2.000	1.220	1.654	M8	1-8	4.0
CAT50 SRKIN 7/16X3.750**	.438	.945	1.260	2.752	3.750	3.000	2.370	2.001	1.417	1.850	M10	1-8	5.0
CAT50 SRKIN 1/2 X3.750**	.500	.945	1.260	2.752	3.750	3.000	2.370	2.001	1.417	1.850	M10	1-8	5.0
CAT50 SRKIN 5/8 X3.750**	.625	1.063	1.339	2.752	3.750	3.000	2.620	1.751	1.535	1.969	M12	1-8	6.0
CAT50 SRKIN 3/4 X4.000**	.750	1.299	1.654	2.752	4.000	3.250	2.620	2.251	1.614	2.047	M16	1-8	8.0
CAT50 SRKIN 7/8 X4.000**	.875	1.732	2.087	2.752	4.000	3.250	2.620	2.251	1.614	2.047	M16	1-8	8.0
CAT50 SRKIN 1 X4.000**	1.000	1.732	2.087	2.752	4.000	3.250	2.620	2.251	1.850	2.283	M16	1-8	8.0
CAT50 SRKIN 1-1/4 X4.000**	1.250	1.732	2.087	2.752	4.000	3.250	2.620	2.251	1.850	2.283	M16	1-8	8.0

* Metric
** Balanced to G2.5 20,000RPM.

CAT - SHELL MILL ADAPTER

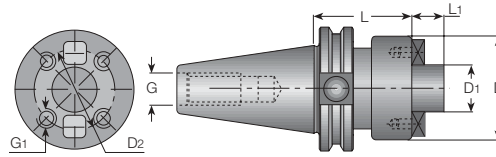
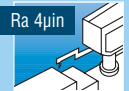
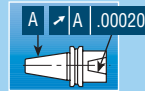
Taper Size
CAT-40 and 50



Designation	D ₁	D	D ₂	D ₃	L	L ₁	L ₂	L ₃	I	G
CAT40 SEM 1/2X1.500	.500	1.750	1.378	-	1.500	.750	.102	-	.571	5/8-11
CAT40 SEM 3/4X1.375	.750	1.752	-	-	1.375	.625	-	-	.669	5/8-11
CAT40 SEM 1X2.062	1.000	1.752	2.165	-	2.062	1.312	.682	-	.669	5/8-11
CAT40 SEM 1-1/4X2.125	1.250	1.752	2.752	-	2.125	1.375	.745	-	.669	5/8-11
CAT40 SEM 1-1/2X2.406	1.500	1.752	3.071	-	2.406	1.656	1.026	-	.938	5/8-11
CAT50 SEM 1/2X3.500	.500	2.752	1.378	-	3.500	2.750	2.120	-	.571	1-8
CAT50 SEM 1/2X5.500	.500	2.752	1.378	-	5.500	4.750	4.120	-	.571	1-8
CAT50 SEM 3/4X1.500	.750	2.752	1.772	-	1.500	.750	.120	-	.669	1-8
CAT50 SEM 3/4X3.500	.750	2.752	1.772	-	3.500	2.750	2.102	-	.669	1-8
CAT50 SEM 3/4X5.500	.750	2.752	2.362	1.772	5.500	4.750	4.130	2.480	.669	1-8
CAT50 SEM 3/4X1.920X8.00	.750	2.752	1.920	-	8.000	7.250	6.583	-	.669	1-8
CAT50 SEM 1X2.000	1.000	2.752	2.165	-	2.000	1.250	.620	-	.669	1-8
CAT50 SEM 1X4.000	1.000	2.752	2.165	-	4.000	3.250	.728	-	.669	1-8
CAT50 SEM 1X6.000	1.000	2.752	2.165	-	6.000	5.250	2.657	-	.669	1-8
CAT50 SEM 1X2.42X12.00	1.000	2.752	2.420	-	12.000	11.250	10.583	-	.669	1-8
CAT50 SEM 1-1/4X1.500	1.250	2.752	-	-	1.500	.750	-	-	.669	1-8
CAT50 SEM 1-1/4X3.500	1.250	2.752	-	-	3.500	2.750	-	-	.669	1-8
CAT50 SEM 1-1/4X4.000	1.250	2.752	-	-	4.000	3.250	-	-	.669	1-8
CAT50 SEM 1-1/4X2.92X13.0	1.250	2.752	2.921	-	13.000	12.250	11.620	-	.669	1-8
CAT50 SEM 1-1/4X6.000	1.250	2.752	-	-	6.000	5.250	-	-?	.669	1-8
CAT50 SEM 1-1/2X2.406	1.500	2.752	3.071	-	2.406	1.656	1.026	-	.938	1-8
CAT50 SEM 1-1/2X4.000	1.500	2.752	3.071	-	4.000	3.250	2.620	-	.938	1-8
CAT50 SEM 1-1/2X6.000	1.500	2.752	3.071	-	6.000	5.250	4.620	-	.938	1-8
CAT50 SEM 2X2.406	2.000	2.752	3.858	-	2.406	1.656	1.026	-	.938	1-8
CAT50 SEM 2X4.000	2.000	2.752	3.858	-	4.000	3.250	2.620	-	.938	1-8

CAT - FACE MILL HOLDER

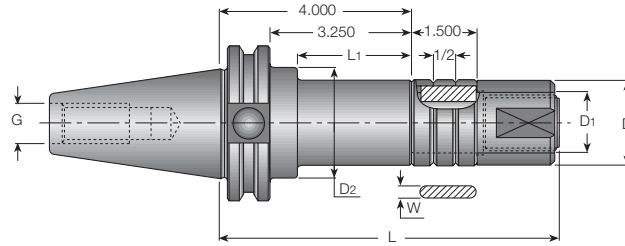
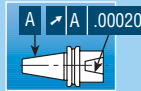
Taper Size
CAT-50



Designation	D ₁	L	L ₁	D	D ₂	G	G ₁
CAT50 FM2-1/2X2.875	2.500	2.875	1.125	4.881	4.00	1-8	5/8-11

CAT - STUB ARBOR HOLDER

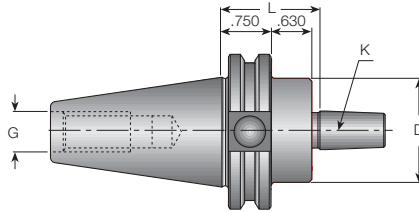
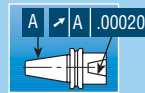
Taper Size
CAT-40 and 50



Designation	D ₁	D	D ₂	L	L ₁	W	G
CAT40 STUB 1X4.000	1.000	1.496	1.752	6.722	2.620	.250	5/8-11
CAT40 STUB 1-1/4X4.000	1.250	1.772	1.752	6.841	-	.312	5/8-11
CAT40 STUB 1-1/2X4.000	1.500	2.126	1.752	7.404	2.620	.375	5/8-11
CAT50 STUB 1 X4.000	1.000	1.496	2.752	6.717	2.620	.250	1-8
CAT50 STUB 1-1/4X4.000	1.250	1.772	2.752	6.835	2.620	.312	1-8
CAT50 STUB 1-1/2X4.000	1.500	2.126	2.752	7.404	2.620	.375	1-8
CAT50 STUB 2 X4.000	2.000	2.752	2.752	7.000	-	.500	1-8

CAT - DRILL CHUCK ARBOR

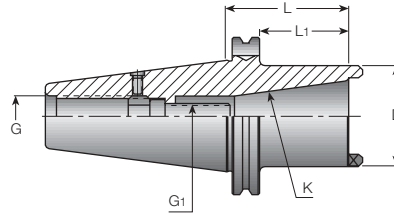
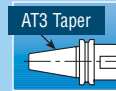
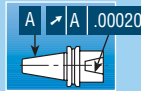
Taper Size
CAT-40 and 50



Designation	K	L	D	G
CAT40 DC J2X1.500	J2	1.500	1.752	5/8-11
CAT40 DC J3X1.500	J3	1.500	1.750	5/8-11
CAT40 DC J33X1.500	J33	1.500	1.752	5/8-11
CAT40 DC J4X1.500	J4	1.500	1.752	5/8-11
CAT40 DC J6X1.500	J6	1.500	1.752	5/8-11
CAT50 DC J2 X1.500	J2	1.500	2.752	1-8
CAT50 DC J3 X1.656	J3	1.656	2.752	1-8
CAT50 DC J33X1.500	J33	1.500	2.752	1-8
CAT50 DC J4 X1.500	J4	1.500	2.752	1-8
CAT50 DC J5 X1.625	J5	1.625	2.752	1-8
CAT50 DC J6 X1.500	J6	1.500	2.752	1-8

CAT - ADAPTER

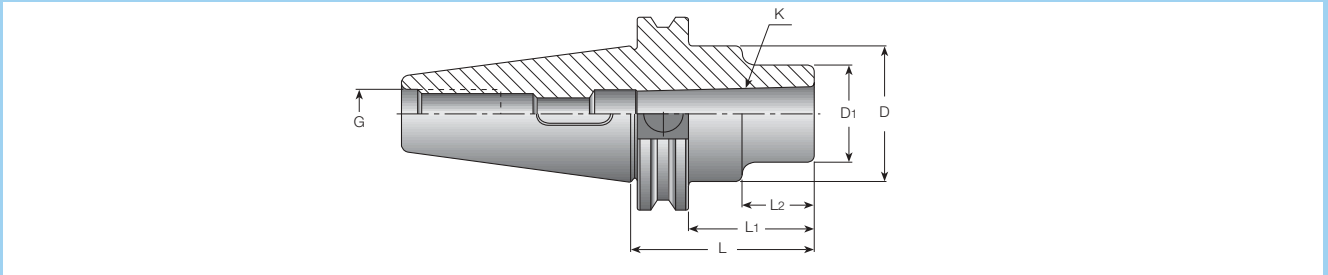
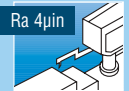
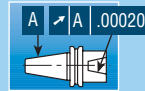
Taper Size
CAT-50



Designation	K	L	L ₁	D	G ₁	G
CAT50 AD ISO 40X70	ISO40	2.762	2.012	2.48	5/8-11	1-8

CAT - MORSE TAPER ADAPTER

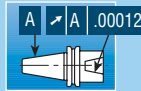
Taper Size
CAT-40 and 50



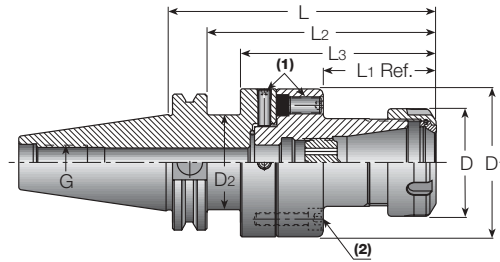
Designation	K	L	L ₁	L ₂	D	D ₁	G
CAT40 MT 1X1.750	MT1	1.750	1.000	.370	1.752	1.000	5/8-11
CAT40 MT 2X2.250	MT2	2.250	1.500	.870	1.752	1.260	5/8-11
CAT40 MT 3X2.765	MT3	2.765	2.015	-	1.752	-	5/8-11
CAT40 MT 4X3.625	MT4	3.625	2.875	2.245	1.752	2.008	5/8-11
CAT50 MT 1X1.500	MT1	1.500	.750	.120	2.752	1.000	1-8
CAT50 MT 2X2.000	MT2	2.000	1.250	.620	2.752	1.260	1-8
CAT50 MT 3X2.500	MT3	2.500	1.750	1.120	2.752	1.575	1-8
CAT50 MT 4X3.375	MT4	3.375	2.625	1.995	2.752	1.969	1-8
CAT50 MT 5X3.750	MT5	3.750	3.000	-	2.752	-	1-8

CAT - CENTER ALIGNMENT COLLET CHUCK

Taper Size
CAT-40 and 50



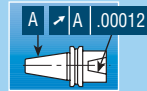
G2.5
20,000 RPM



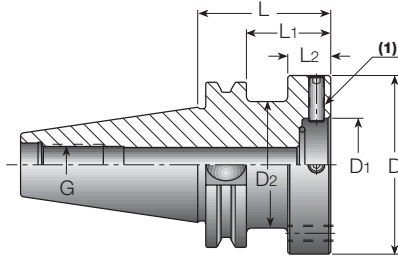
Designation	Range	L	L ₁	L ₂	L ₃	D	D ₁	D ₂	G	Hex Key ⁽¹⁾ (mm)	Hex Key ⁽²⁾ (mm)
ADJ CAT40 ER32	.080-.789	4.902	2.067	4.152	3.522	1.969	2.756	1.752	5/8-11	4.0	5.0
ADJ CAT50 ER32	.080-.789	4.902	2.067	4.152	-	1.969	2.756	-	1-8	4.0	5.0

CAT - CENTER ALIGNMENT SHANK AND BASE

Taper Size
CAT-40 and 50

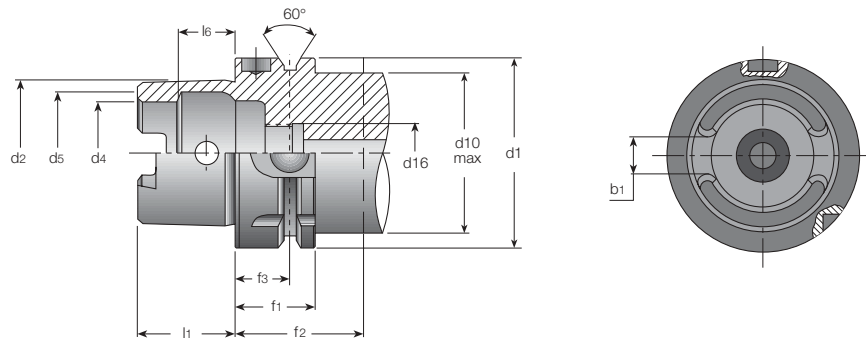


G2.5
20,000 RPM



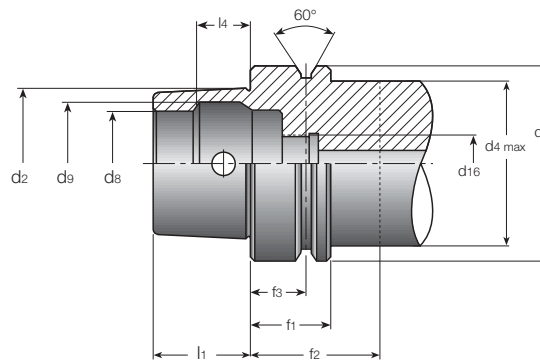
Designation	L	L ₁	L ₂	D	D ₁	D ₂	G	Hex Key ⁽¹⁾ (mm)
ADJ CAT40 D2.756	1.969	1.219	.589	2.756	1.378	1.752	5/8-11	4.0
ADJ CAT50 D2.756	1.969	1.219	-	2.756	1.378	-	1-8	4.0

HSK - STANDARD TOOLHOLDER DIN69893 FORM A STANDARD - METRIC



HSK-A	d ₁	d ₂	d ₄	d ₅	d ₁₀	d ₁₆	l ₁	l ₆	b ₁	f ₁	f ₂	f ₃
40	40	30	21	25.5	34	M12x1	20	11.42	8.05	20	35	16
50	50	38	26	32.0	42	M16x1	25	14.13	10.54	26	42	18
63	63	48	34	40.0	53	M18x1	32	18.13	12.54	26	42	18
80	80	60	42	50.0	67	M20x1.5	40	22.85	16.04	26	42	18
100	100	75	53	63.0	85	M24x1.5	50	28.56	20.02	29	45	20

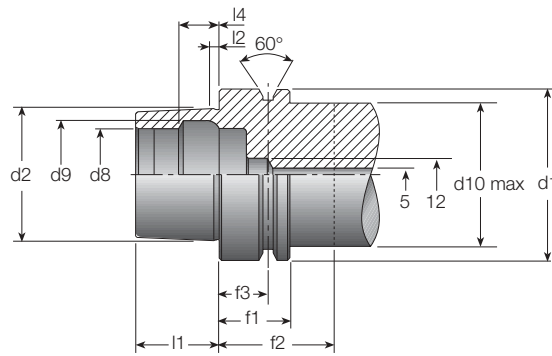
HSK - DIN69893 FORM E - METRIC



HSK-E	d ₁	d ₂	d ₄	d ₈	d ₉	d ₁₆	l ₁	l ₄	f ₁	f ₂	f ₃
32*	32	24	26	17	19.0	M10X1	16	8.92	20	35	16
40	40	30	34	21	25.5	M12X1	20	11.42	20	35	16
50	50	38	42	26	32.0	M16X1	25	14.13	26	42	18
63	63	48	53	34	40.0	M18X1	32	18.13	26	42	18

* Without cross hole.

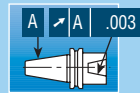
■ HSK - STANDARD TOOLHOLDER DIN69893 FORM F STANDARD - METRIC



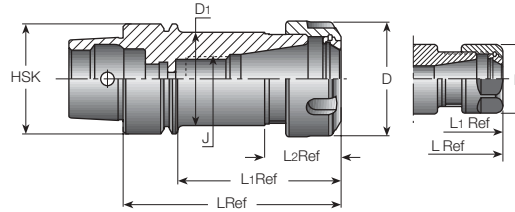
HSK-F	d_1	d_2	d_4	d_8	d_9	l_1	l_2	l_4	f_1	f_2	f_3
63	63	38	53	26	32	25	5	14.13	26	42	18

HSK - ER COLLET CHUCK - METRIC

Taper Size
HSK-E 32, 40, 50 & 63



G2.5
40,000 RPM



Designation	HSK-E	Range	D	D ₁	L	L ₁	L ₂	J
HSK E 32 ER16 X 60	32	0.5-10	28	22.4	60	40	21.5	—
HSK E 32 ER20 X 60	32	1-13	34	25.4	60	40	26	—
HSK E 32 ER25 X 65	32	1-16	42	25.8	65	45	30	—
HSK E 40 ER16 X 60	40	0.5-10	28	—	60	40	—	—
HSK E 40 ER16 X 80	40	0.5-10	28	—	80	60	—	M10
HSK E 40 ER20 X 80	40	1-13	34	—	80	60	—	M12
HSK E 40 ER25 X 80	40	1-16	42	34.0	80	60	28	M18X1.5
HSK E 40 ER32 X 80	40	2-20	50	40.1	80	60	31	M22X1.5
HSK E 50 ER16 X 80*	50	0.5-10	28	—	80	54	—	M10
HSK E 50 ER16 X 100*	50	0.5-10	28	—	100	74	—	M10
HSK E 50 ER16 X 100M* (1)	50	0.5-10	22	—	100	74	—	M10
HSK E 50 ER20 X 80*	50	1-13	34	—	80	54	—	M10
HSK E 50 ER25 X 80*	50	1-16	42	32.4	80	54	28	—
HSK E 50 ER32 X 80*	50	2-20	50	40.4	80	54	31	—
HSK E 50 ER32 X 100*	50	2-20	50	40.4	100	74	31	M22X1.5
HSK E 63 ER16 X 80*	63	0.5-10	28	—	80	54	—	M10
HSK E 63 ER16 X 100*	63	0.5-10	28	—	100	74	—	M10
HSK E 63 ER32 X 80**	63	2-20	50	40.4	80	54	31	—
HSK E 63 ER32 X 100**	63	2-20	50	—	100	75	—	M22X1.5

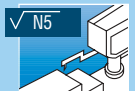
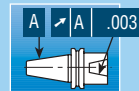
*Balance to G2.5 35,000RPM.

**Balance to G2.5 30,000 RPM.

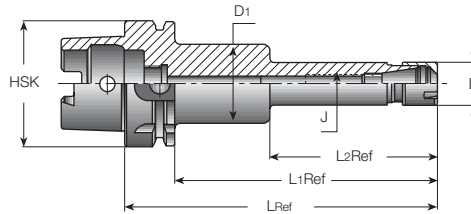
(1)Equipped with nut ER 16 MINI.

■ HSK - ER MINI COLLET CHUCK - METRIC

Taper Size
HSK-A 50, 63 and 100



G2.5
20,000 RPM

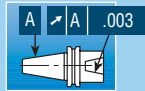


Designation	HSK-A	Range	D	D ₁	L	L ₁	L ₂	J
HSK A 50 ER16X100 M	50	0.5-10	22		100	74		M10
HSK A 50 ER16X120 M	50	0.5-10	22		120	94		M10
HSK A 50 ER20X100 M	50	1-13	28		100	74		M12
HSK A 50 ER20X120 M	50	1-13	28		120	94		M12
HSK A 63 ER16X100 M	63	0.5-10	22		100	74		M10
HSK A 63 ER16X120 M	63	0.5-10	22	40	120	94	78	M10
HSK A 63 ER16X160 M	63	0.5-10	22	40	160	134	85	M10
HSK A 63 ER20X100 M	63	1-13	28		100	74		M12
HSK A 63 ER20X120 M	63	1-13	28		120	94		M12
HSK A 63 ER20X160 M	63	1-13	28	45	160	134	85	M12
HSK A 100 ER16X100 M*	100	0.5-10	22		100	71		M10
HSK A 100 ER16X160 M*	100	0.5-10	22	40	160	131	85	M10
HSK A 100 ER20X100 M*	100	1-13	28		100	71		M12
HSK A 100 ER20X160 M*	100	1-13	28	45	160	131	85	M12

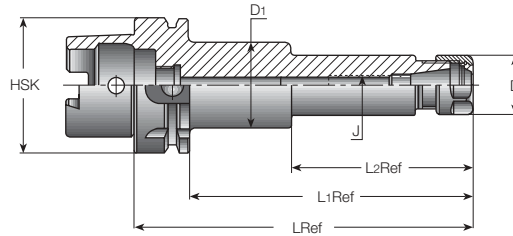
*Balance to G6.3 12,000RPM.

HSK - ER COLLET CHUCK - METRIC

Taper Size
HSK-A 40, 50, 63 & 100



G2.5
20,000 RPM

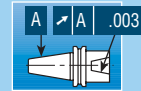


Designation	HSK-A	Range	D	D ₁	L	L ₁	L ₂	J
HSK A 40 ER16X60	40	0.5-10	28		60	40		M10
HSK A 40 ER16X80	40	0.5-10	28		80	60		M10
HSK A 40 ER16X100	40	0.5-10	28		100	80		M10
HSK A 50 ER16X100	50	0.5-10	28		100	74		M10
HSK A 50 ER16X120	50	0.5-10	28		120	94		M10
HSK A 50 ER20X100	50	1-13	34		100	74		M12
HSK A 50 ER20X120	50	1-13	34		120	94		M12
HSK A 63 ER16X100	63	0.5-10	28		100	74		M10
HSK A 63 ER16X120	63	0.5-10	28		120	94		M10
HSK A 63 ER16X160	63	0.5-10	28	40	160	134	85.6	M10
HSK A 63 ER20X100	63	1-13	34		100	74		M12
HSK A 63 ER20X120	63	1-13	34		120	94		M12
HSK A 63 ER20X160	63	1-13	34	45	160	134	85.0	M12
HSK A 100 ER16X100*	100	0.5-10	28		100	71		M10
HSK A 100 ER16X160*	100	0.5-10	28	40	160	131	85.0	M10
HSK A 100 ER20X100*	100	1-13	34		100	71		M12
HSK A 100 ER20X160*	100	1-13	34	45	160	131	85.0	M12

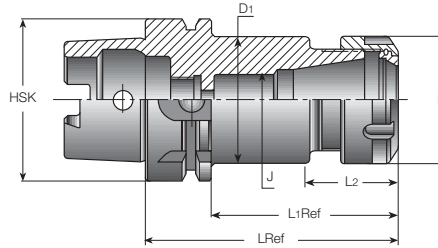
*Balance to G6.3 12,000 RPM.

HSK - ER COLLET CHUCK - METRIC

Taper Size
HSK-A 40, 50, 63 & 100



G2.5
20,000 RPM

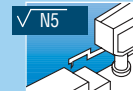
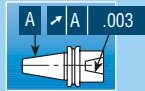


Designation	HSK-A	Range	D	D ₁	L	L ₁	L ₂	J
HSK A 40 ER25X60	40	1-16	42	32.4	40	60	28	—
HSK A 40 ER25X80	40	1-16	42	32.4	80	60	28	M18x1.5
HSK A 40 ER25X100	40	1-16	42	32.4	100	80	28	M16
HSK A 40 ER32X100	40	2-20	50	40.4	100	80	31	M22x1.5
HSK A 50 ER25X80	50	1-16	42	32.4	80	54	28	M16
HSK A 50 ER25X100	50	1-16	42	41.8	100	74	28.5	M16
HSK A 50 ER32X100	50	2-20	50	40.4	100	74	31	M22x1.5
HSK A 50 ER32X120	50	2-20	50	41.8	120	94	35	M22x1.5
HSK A 63 ER25X80	63	1-16	42	—	80	54	—	M16
HSK A 63 ER25X100	63	1-16	42	—	100	74	—	M16
HSK A 63 ER25X120	63	1-16	42	—	120	94	—	M16
HSK A 63 ER25X160	63	1-16	42	—	160	134	—	M16
HSK A 63 ER32X80	63	2-20	50	40.4	80	54	31	M22x1.5
HSK A 63 ER32X100	63	2-20	50	—	100	74	—	M22x1.5
HSK A 63 ER32X120	63	2-20	50	—	120	94	—	M22x1.5
HSK A 63 ER32X140	63	2-20	50	—	140	114	—	M22x1.5
HSK A 63 ER32X160	63	2-20	50	—	160	134	—	M22x1.5
HSK A 63 ER40X80	63	3-26	63	50.4	80	54	34	—
HSK A 63 ER40X100	63	3-26	63	50.4	100	74	34	M28x1.5
HSK A 63 ER40X120	63	3-26	63	50.4	120	94	34	M28x1.5
HSK A 100 ER25X100*	100	1-16	42	—	100	71	—	M16
HSK A 100 ER25X120*	100	1-16	42	—	120	91	—	M16
HSK A 100 ER25X160*	100	1-16	42	—	160	134	—	M16
HSK A 100 ER32X100*	100	2-20	50	—	100	71	—	M22x1.5
HSK A 100 ER32X120*	100	2-20	50	—	120	91	—	M22x1.5
HSK A 100 ER32X160*	100	2-20	50	—	160	131	—	M22x1.5
HSK A 100 ER40X100*	100	3-26	63	—	100	71	—	M28x1.5
HSK A 100 ER40X120*	100	3-26	63	—	120	91	—	M28x1.5
HSK A 100 ER40X160*	100	3-26	63	—	160	131	—	M28x1.5
HSK A 100 ER50X100*	100	10-34	78	—	100	71	—	—

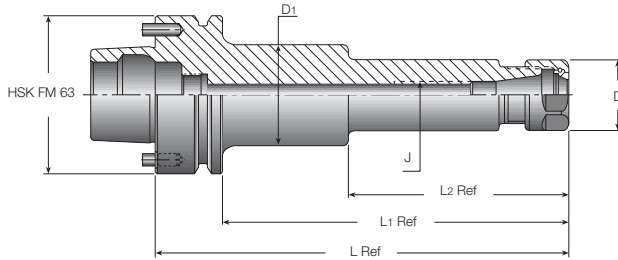
*Balance to G2.5 12,000 RPM.

HSK - ER COLLET CHUCK - METRIC

Taper Size
HSK-FM 63



G2.5
30,000 RPM



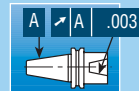
Used for MAKINO's machine models MAG3, MAG4 and V77. These tools are based on the HSK63F type with two drive pins which improve torque transmission.

Designation	HSK FM	Range	L	L ₁	L ₂	D	D ₁	J
HSK FM 63 ER16x80	63	0.5-10	80	54	-	28	-	M10
HSK FM 63 ER16x100	63	0.5-10	100	74	-	28	-	M10
HSK FM 63 ER16x120	63	0.5-10	120	94	-	28	-	M10
HSK FM 63 ER16x160	63	0.5-10	160	134	85.6	28	40	M10

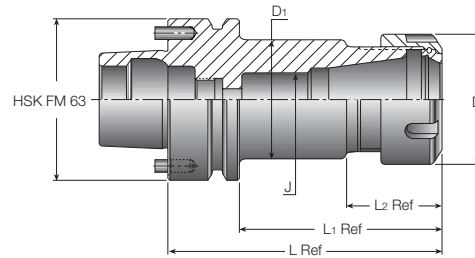
*The driving pins can be removed, turning the toolholder into a standard HSK "F63" type.

■ HSK - ER COLLET CHUCK - METRIC

Taper Size
HSK-FM 63



G2.5
30,000 RPM



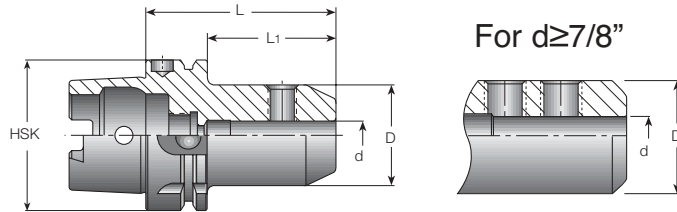
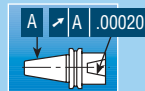
Used for MAKINO's machine models MAG3, MAG4 and V77. These tools are based on the HSK63F type with two drive pins which improve torque transmission.

Designation	HSK FM	Range	L	L ₁	L ₂	D	D ₁	J
HSK FM 63ER32x80	63	2-20	80	54	-	50	-	-
HSK FM 63ER32x100	63	2-20	100	74	-	50	-	M22x1.5
HSK FM 63ER40x80	63	3-26	80	54	32	63	50	-
HSK FM 63ER40x100	63	3-26	100	74	32	63	50	M28x1.5

* The driving pins can be removed, turning the toolholder into a standard HSK "F63" type.

HSK - END MILL HOLDER

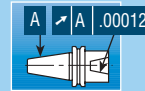
Taper Size
HSK-A 50, 63 and 100



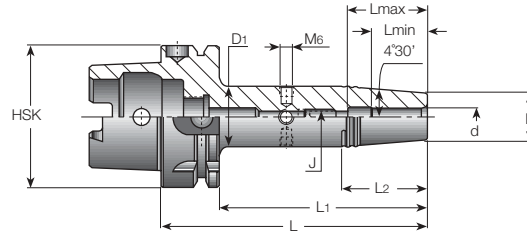
Designation	HSK-A	d	L	D	L ₁
HSK A 50 EM3/16 X2.562	50	.188	2.562	.866	1.538
HSK A 50 EM1/4 X2.562	50	.250	2.562	1.000	1.538
HSK A 50 EM3/8 X2.562	50	.375	2.562	1.378	1.538
HSK A 50 EM1/2 X3.125	50	.500	3.125	1.614	2.101
HSK A 50 EM5/8 X3.125	50	.625	3.125	1.752	2.101
HSK A 50 EM3/4 X3.125	50	.750	3.125	1.937	2.101
HSK A 50 EM7/8 X4.000	50	.875	4.000	2.205	2.976
HSK A 50 EM1 X4.250	50	1.000	4.250	2.563	3.226
HSK A 63 EM3/16 X2.562	63	.188	2.562	.866	1.538
HSK A 63 EM1/4 X2.562	63	.250	2.562	1.000	1.538
HSK A 63 EM3/8 X2.562	63	.375	2.562	1.378	1.538
HSK A 63 EM1/2 X3.125	63	.500	3.125	1.614	2.101
HSK A 63 EM5/8 X3.125	63	.625	3.125	1.752	2.101
HSK A 63 EM3/4 X3.150	63	.750	3.150	1.937	2.101
HSK A 63 EM7/8 X4.000	63	.875	4.000	2.047	2.976
HSK A 63 EM1 X4.250	63	1.000	4.250	2.563	3.226
HSK A 63 EM1-1/4X4.250	63	1.250	4.250	2.813	3.226
HSK A100 EM3/16 X3.125	100	.188	3.125	.866	1.983
HSK A100 EM1/4 X3.125	100	.250	3.125	1.000	1.983
HSK A100 EM3/8 X3.125	100	.375	3.125	1.378	1.983
HSK A100 EM1/2 X3.125	100	.500	3.125	1.614	1.983
HSK A100 EM5/8 X4.000	100	.625	4.000	1.752	2.858
HSK A100 EM3/4 X4.000	100	.750	4.000	1.937	2.858
HSK A100 EM7/8 X4.000	100	.875	4.000	2.047	2.858
HSK A100 EM1 X4.000	100	1.000	4.000	2.563	2.858
HSK A100 EM1-1/4X4.000	100	1.250	4.000	2.813	2.858
HSK A100 EM1-1/2X4.000	100	1.500	4.000	3.000	2.858

HSK - THERMAL SHRINKIN HOLDER

Taper Size
HSK-A 63 and 100



G2.5
25,000 RPM



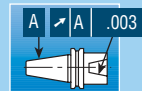
Designation	d	D	D ₁	L	L ₁	L ₂	L _{min}	L _{max}	J	Hex Key**
HSK A 63 SRKIN 1/4X3.150	.250	.827	1.060	3.150	2.126	1.500	.984	1.420	M5	2.5
HSK A 63 SRKIN5/16X3.150	.312	.827	1.060	3.150	2.216	1.500	.984	1.420	M6	3.0
HSK A 63 SRKIN 3/8X3.346	.375	.940	1.260	3.346	2.320	2.000	1.220	1.650	M8	4.0
HSK A 63 SRKIN7/16X3.543	.437	.940	1.260	3.543	2.519	2.000	1.417	1.850	M10	5.0
HSK A 63 SRKIN 1/2X3.543	.500	.940	1.260	3.543	2.519	2.000	1.417	1.850	M10	5.0
HSK A 63 SRKIN 5/8X3.740	.625	1.060	1.340	3.740	2.716	1.750	1.535	1.970	M12	6.0
HSK A 63 SRKIN 3/4X3.937	.750	1.300	1.650	3.937	2.913	2.250	1.614	2.050	M16	8.0
HSK A 63 SRKIN 7/8X3.937	.875	1.730	2.074	3.937	2.913	2.170	1.614	2.050	M16	8.0
HSK A 63 SRKIN1 X4.528	1.000	1.730	2.074	4.528	3.504	2.170	1.850	2.280	M16	8.0
HSK A 63 SRKIN1-1/4X4.72	1.250	1.730	2.074	4.725	3.700	2.170	1.850	2.280	M16	8.0
HSK A 100 SRKIN 1/4X3.500*	.250	.827	1.060	3.500	2.358	1.500	.984	1.420	M5	2.5
HSK A 100 SRKIN 1/4X4.750*	.250	.827	1.060	4.750	3.608	1.500	.984	1.420	M5	2.5
HSK A 100 SRKIN 1/4X6.250*	.250	.827	1.060	6.250	5.108	1.500	.984	1.420	M5	2.5
HSK A 100 SRKIN5/16X3.500*	.313	.827	1.060	3.500	2.358	1.500	.984	1.420	M6	3.0
HSK A 100 SRKIN5/16X4.750*	.313	.827	1.060	4.750	3.608	1.500	.984	1.420	M6	3.0
HSK A 100 SRKIN5/16X6.250*	.313	.827	1.060	6.250	5.108	1.500	.984	1.420	M6	3.0
HSK A 100 SRKIN 3/8X3.625*	.375	.940	1.260	3.625	2.483	2.000	1.220	1.650	M8	4.0
HSK A 100 SRKIN 3/8X4.750*	.375	.940	1.260	4.750	3.608	2.000	1.220	1.650	M8	4.0
HSK A 100 SRKIN 3/8X6.250*	.375	.940	1.260	6.250	5.108	2.000	1.220	1.650	M8	4.0
HSK A 100 SRKIN7/16X3.750*	.438	.940	1.260	3.750	2.608	2.000	1.417	1.850	M10	5.0
HSK A 100 SRKIN7/16X4.750*	.438	.940	1.260	4.750	3.608	2.000	1.417	1.850	M10	5.0
HSK A 100 SRKIN7/16X6.250*	.438	.940	1.260	6.250	5.108	2.000	1.417	1.850	M10	5.0
HSK A 100 SRKIN 1/2X3.750*	.500	.940	1.260	3.750	2.608	2.000	1.417	1.850	M10	5.0
HSK A 100 SRKIN 1/2X5.000*	.500	.940	1.260	5.000	3.858	2.000	1.417	1.850	M10	5.0
HSK A 100 SRKIN 1/2X6.250*	.500	.940	1.260	6.250	5.108	2.000	1.417	1.850	M10	5.0
HSK A 100 SRKIN 5/8X4.000*	.625	1.060	1.340	4.000	2.858	1.750	1.535	1.970	M12	6.0
HSK A 100 SRKIN 5/8X5.000*	.625	1.060	1.340	5.000	3.858	1.750	1.535	1.970	M12	6.0
HSK A 100 SRKIN 5/8X6.250*	.625	1.060	1.340	6.250	5.108	1.750	1.535	1.970	M12	6.0
HSK A 100 SRKIN 3/4X4.125*	.750	1.300	1.650	4.125	2.983	2.250	1.614	2.050	M12	6.0
HSK A 100 SRKIN 3/4X6.250*	.750	1.300	1.650	6.250	5.108	2.250	1.614	2.050	M16	8.0
HSK A 100 SRKIN 7/8X4.125*	.875	1.730	2.090	4.125	2.983	2.250	1.614	2.050	M12	6.0
HSK A 100 SRKIN 7/8X6.250*	.875	1.730	2.090	6.250	5.108	2.250	1.614	2.050	M16	8.0
HSK A 100 SRKIN 1X4.500*	1.000	1.730	2.090	4.500	3.358	2.250	1.850	2.280	M12	6.0
HSK A 100 SRKIN1-1/4X4.75*	1.250	1.730	2.090	4.750	3.608	2.250	1.850	2.280	M12	6.0

* Balanced to G2.5 20,000 RPM.

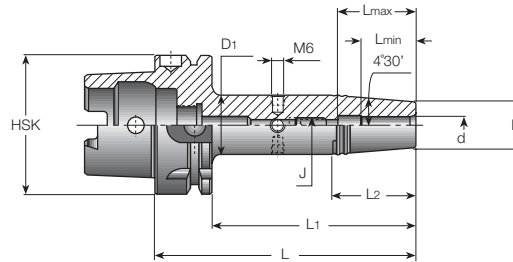
** Metric

HSK - THERMAL SHRINKIN HOLDER - METRIC

Taper Size
HSK-A 63



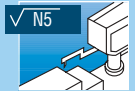
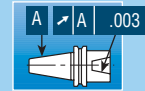
G2.5
25,000 RPM



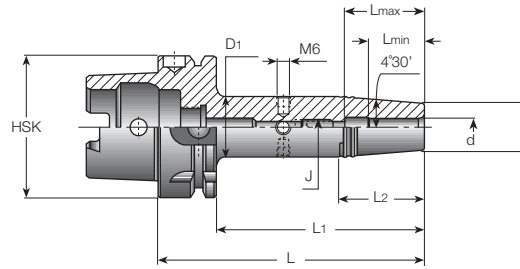
Designation	d	D	D ₁	L	L ₁	L ₂	L _{min}	L _{max}	J	Hex Key
HSK A 63 SRKIN 6X 80	6	21	27	80	54	38	25	36	M5	2.5
HSK A 63 SRKIN 6X120	6	21	27	120	94	38	25	36	M5	2.5
HSK A 63 SRKIN 6X160	6	21	27	160	134	38	25	36	M5	2.5
HSK A 63 SRKIN 8X 80	8	21	27	80	54	38	25	36	M6	3.0
HSK A 63 SRKIN 8X120	8	21	27	120	94	38	25	36	M6	3.0
HSK A 63 SRKIN 8X160	8	21	27	160	134	38	25	36	M6	3.0
HSK A 63 SRKIN 10X 85	10	24	32	85	59	51	31	42	M8	4.0
HSK A 63 SRKIN 10X120	10	24	32	120	94	51	31	42	M8	4.0
HSK A 63 SRKIN 10X160	10	24	32	160	134	51	31	42	M8	4.0
HSK A 63 SRKIN 12X 90	12	24	32	90	64	51	36	42	M8	4.0
HSK A 63 SRKIN 12X120	12	24	32	120	94	51	36	47	M10	5.0
HSK A 63 SRKIN 12X160	12	24	32	160	134	51	36	47	M10	5.0
HSK A 63 SRKIN 14X 90	14	27	34	90	64	45	36	47	M10	5.0
HSK A 63 SRKIN 14X120	14	27	34	120	94	45	36	47	M10	5.0
HSK A 63 SRKIN 14X160	14	27	34	160	134	45	36	47	M10	5.0
HSK A 63 SRKIN 16X 95	16	27	34	95	69	44	39	50	M12	6.0
HSK A 63 SRKIN 16X120	16	27	34	120	94	44	39	50	M12	6.0
HSK A 63 SRKIN 16X160	16	27	34	160	134	44	39	50	M12	6.0
HSK A 63 SRKIN 18X 95	18	33	42	95	69	57	39	50	M12	6.0
HSK A 63 SRKIN 18X120	18	33	42	120	94	57	39	50	M12	6.0
HSK A 63 SRKIN 18X160	18	33	42	160	134	57	39	50	M12	6.0
HSK A 63 SRKIN 20X100	20	33	42	100	74	57	41	52	M16	8.0
HSK A 63 SRKIN 20X120	20	33	42	120	94	57	41	52	M16	8.0
HSK A 63 SRKIN 20X160	20	33	42	160	134	57	41	52	M16	8.0
HSK A 63 SRKIN 25X115	25	44	53	115	89	55	47	58	M16	8.0
HSK A 63 SRKIN 32X120	32	44	53	120	94	55	4758	M16	8.0	

HSK - THERMAL SHRINKIN HOLDER - METRIC

Taper Size
HSK-A 100



G2.5
20,000 RPM

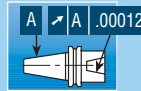


Designation	d	D	D ₁	L	L ₁	L ₂	L _{min}	L _{max}	J	Hex Key
HSK A 100 SRKIN 6X 85	6	21	27	85	56	38	25	36	M5	2.5
HSK A 100 SRKIN 6X120	6	21	27	120	91	38	25	36	M5	2.5
HSK A 100 SRKIN 6X160	6	21	27	160	131	38	25	36	M6	3.0
HSK A 100 SRKIN 8X 85	8	21	27	85	56	38	25	36	M6	3.0
HSK A 100 SRKIN 8X120	8	21	27	120	91	38	25	36	M6	3.0
HSK A 100 SRKIN 8X160	8	21	27	160	131	38	25	36	M6	3.0
HSK A 100 SRKIN 10X 90	10	24	32	90	61	51	31	42	M8	4.0
HSK A 100 SRKIN 10X120	10	24	32	120	91	51	31	42	M8	4.0
HSK A 100 SRKIN 10X160	10	24	32	160	131	51	31	42	M8	4.0
HSK A 100 SRKIN 12X 95	12	24	32	95	66	51	36	47	M10	5.0
HSK A 100 SRKIN 12X120	12	24	32	120	91	51	36	47	M10	5.0
HSK A 100 SRKIN 12X160	12	24	32	160	131	51	36	47	M10	5.0
HSK A 100 SRKIN 14X 95	14	27	34	95	66	45	36	47	M10	5.0
HSK A 100 SRKIN 14X120	14	27	34	120	91	45	36	47	M10	5.0
HSK A 100 SRKIN 14X160	14	27	34	160	131	45	36	47	M10	5.0
HSK A 100 SRKIN 16X100	16	27	34	100	71	45	39	50	M12	6.0
HSK A 100 SRKIN 16X120	16	27	34	120	91	45	39	50	M12	6.0
HSK A 100 SRKIN 16X160	16	27	34	160	131	45	39	50	M12	6.0
HSK A 100 SRKIN 18X100	18	33	42	100	71	57	39	50	M12	6.0
HSK A 100 SRKIN 18X160	18	33	42	160	131	57	39	50	M12	6.0
HSK A 100 SRKIN 20X105	20	33	42	105	76	57	41	52	M16	8.0
HSK A 100 SRKIN 20X160	20	33	42	160	131	57	41	52	M16	8.0
HSK A 100 SRKIN 25X115	25	44	53	115	86	57	47	58	M16	8.0
HSK A 100 SRKIN 32X120	32	44	53	120	91	57	47	58	M16	8.0

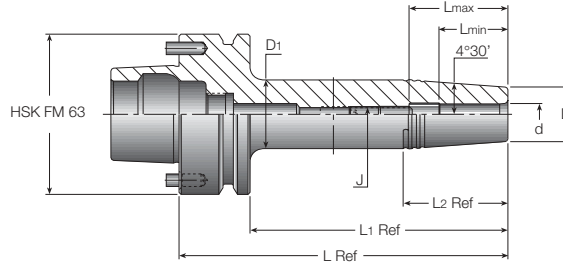
Use only inductive heating device for SRKIN holders.

HSK - ER COLLET CHUCK FOR MAKINO MAG3, MAG4 AND V77 MACHINE MODELS

Taper Size
HSK FM-63



G2.5
30,000 RPM



Designation	d	D ₁	D	L	L ₁	L ₂	Lmin	Lmax	J	Hex*
HSK FM 63 SRKIN 1/4x3.13	.250	1.063	.827	3.130	2.106	1.500	.984	1.417	M5	2.5
HSK FM 63 SRKIN 5/16x3.13	.313	1.063	.827	3.130	2.106	1.500	.984	1.417	M6	3.0
HSK FM 63 SRKIN 3/8x3.50	.375	1.260	.945	3.500	2.476	2.000	1.220	1.654	M8	4.0
HSK FM 63 SRKIN 1/2x3.50	.500	1.260	.945	3.500	2.476	2.000	1.417	1.850	M8	4.0
HSK FM 63 SRKIN 5/8x3.50	.625	1.339	1.063	3.500	2.476	1.752	1.535	1.969	M8	4.0
HSK FM 63 SRKIN 3/4x3.00	.750	1.610	1.299	3.000	2.976	-	1.614	2.047	-	-
HSK FM 63 SRKIN 3/4x3.75	.750	1.654	1.299	3.750	2.726	2.250	1.614	2.047	M12	6.0
HSK FM 63 SRKIN 1x3.00	1.000	2.043	1.732	3.000	2.976	-	1.850	2.126	-	-
HSK FM 63 SRKIN 1x4.00	1.000	2.075	1.732	4.000	2.976	2.252	1.850	2.283	M16	8.0

* Metric

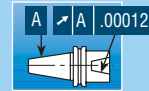
** The driving pins can be removed, turning the toolholder into a standard HSK F 63 type.

Used for MAKINO's machine models MAG3, MAG4 and V77

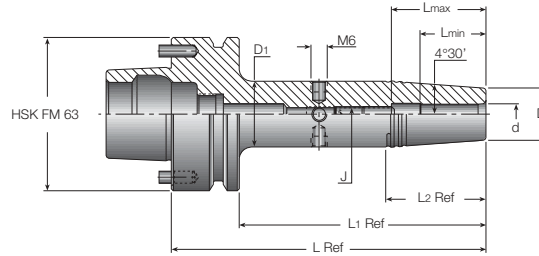
These tools are based on the HSK 63 F type with two drive pins which improve torque transmission.

■ HSK - ER COLLET CHUCK FOR MAKINO MAG3, MAG4 & V77 MACHINE MODELS - METRIC

Taper Size
HSK-FM 63



G2.5
30,000 RPM



Designation	d	D	D ₁	L	L ₁	L ₂	L _{min}	L _{max}	J	Hex
HSK FM 63 SRKIN 6x80	6	21	27.0	80	54	38.0	25	36	M5	2.5
HSK FM 63 SRKIN 8x80	8	21	27.0	80	54	38.0	25	36	M6	3.0
HSK FM 63 SRKIN 10x85	10	24	32.0	85	59	50.5	31	42	M8	4.0
HSK FM 63 SRKIN 12x90	12	24	32.0	90	64	50.5	36	47	M10	5.0
HSK FM 63 SRKIN 14x90	14	27	34.0	90	64	44.5	36	47	M10	5.0
HSK FM 63 SRKIN 16x95	16	27	34.0	95	69	44.5	39	50	M12	6.0
HSK FM 63 SRKIN 18x95	18	33	42.0	95	69	57.0	39	50	M12	6.0
HSK FM 63 SRKIN 20x100	20	33	42.0	100	74	57.0	41	52	M16	8.0
HSK FM 63 SRKIN 25x115	25	44	52.7	115	89	55.0	47	58	M16	8.0
HSK FM 63 SRKIN 32x120	32	44	52.7	120	94	55.0	47	58	M16	8.0

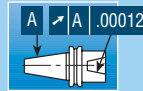
** The driving pins can be removed, turning the toolholder into a standard HSK F 63 type.

Used for MAKINO's machine models MAG3, MAG4 and V77

These tools are based on the HSK 63 F type with two drive pins which improve torque transmission.

HSK - THERMAL SHRINKING HOLDER

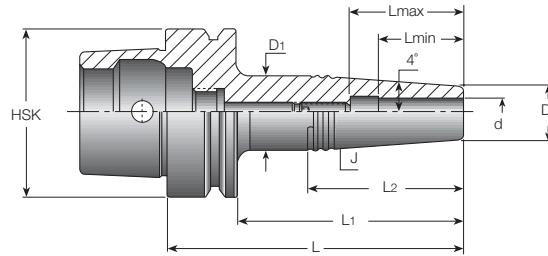
Taper Size
HSK-E 32, 40, 50 & 63



50-52 HRC



G2.5
40,000 RPM



Designation	d	D ₁	D	L	L ₁	L ₂	L _{min}	L _{max}	J	Hex key***
HSK E 32 SRK1/8X2.000	.125	.591	.394	2.787	2.000	1.407	.394	.787	M4	2.0
HSK E 32 SRK3/16X2.000	.187	.591	.394	2.787	2.000	1.407	.591	.984	M4	2.0
HSK E 32 SRK1/4X2.000	.250	.630	.433	2.787	2.000	1.406	.709	1.102	M4	2.0
HSK E 32 SRK5/16X2.000	.312	.787	.551	2.787	2.000	1.406	.984	1.378	M4	2.0
HSK E 32 SRK3/8X2.000	.375	.866	.630	2.787	2.000	1.677	1.181	1.575	M4	2.0
HSK E 32 SRK1/2X2.000	.500	.984	.787	2.787	2.000	1.392	1.260	1.575	M4	2.0
HSK E 40 SRK1/8 X1.750	.125	.390	.590	2.537	1.750	1.400	.394	.630	M5	2.5
HSK E 40 SRK1/8 X3.000	.125	.390	.748	3.787	3.000	2.526	.394	.630	M5	2.5
HSK E 40 SRK3/16X1.750	.187	.390	.590	2.537	1.750	1.400	.590	.984	M4	2.0
HSK E 40 SRK3/16X3.000	.187	.390	.748	3.787	3.000	2.526	.590	.984	M4	2.0
HSK E 40 SRK1/4 X1.750	.250	.430	.630	2.537	1.750	1.400	.709	1.102	M5	2.5
HSK E 40 SRK1/4 X3.000	.250	.430	.787	3.787	3.000	2.524	.709	1.102	M5	2.5
HSK E 40 SRK5/16X1.750	.312	.787	.550	2.537	1.750	1.673	.984	1.378	M5	2.5
HSK E 40 SRK5/16X3.000	.312	.550	.905	3.787	3.000	2.518	.984	1.378	M6	3.0
HSK E 40 SRK3/8 X1.750	.375	.630	.866	2.537	1.750	1.670	1.181	1.575	M5	2.5
HSK E 40 SRK3/8 X3.000	.375	.630	.965	3.787	3.000	2.373	1.181	1.575	M8	4.0
HSK E 40 SRK7/16X1.750	.437	.790	1.024	2.537	1.750	1.665	1.220	1.614	M5	2.5
HSK E 40 SRK7/16X3.000	.437	.790	1.102	3.787	3.000	2.229	1.220	1.614	M10	5.0
HSK E 40 SRK1/2 X1.750	.500	.790	1.024	2.537	1.750	1.665	1.260	1.654	M5	2.5
HSK E 40 SRK1/2 X3.000	.500	.790	1.102	3.787	3.000	2.229	1.260	1.654	M10	5.0
HSK E 50 SRK1/8 X1.750*	.125	.390	.590	2.774	1.750	1.400	.394	.630	M5	2.5
HSK E 50 SRK1/8 X3.000*	.125	.390	.748	4.024	3.000	2.526	.394	.630	M5	2.5
HSK E 50 SRK3/16X1.750*	.187	.390	.590	2.774	1.750	1.400	.590	.826	M6	3.0
HSK E 50 SRK3/16X3.000*	.187	.390	.748	4.024	3.000	2.526	.590	.826	M6	3.0
HSK E 50 SRK1/4 X1.750*	.250	.430	.630	2.774	1.750	1.400	.709	1.102	M5	2.5
HSK E 50 SRK1/4 X3.000*	.250	.430	.787	4.024	3.000	2.524	.709	1.102	M5	2.5
HSK E 50 SRK5/16X1.750*	.312	.550	.787	2.774	1.750	1.673	.984	1.378	M6	3.0
HSK E 50 SRK5/16X3.000*	.312	.550	.905	4.024	3.000	2.518	.984	1.378	M6	3.0
HSK E 50 SRK3/8 X1.750**	.375	.630	.866	2.774	1.750	1.670	1.181	1.575	M6	3.0
HSK E 50 SRK3/8 X3.000**	.375	.630	.965	4.024	3.000	2.373	1.181	1.575	M8	4.0
HSK E 50 SRK7/16X1.750**	.437	.790	1.024	2.774	1.750	1.665	1.220	1.614	M6	3.0
HSK E 50 SRK7/16X3.000**	.437	.790	1.102	4.024	3.000	2.229	1.220	1.614	M10	5.0
HSK E 50 SRK1/2 X1.750**	.500	.790	1.024	2.774	1.750	1.665	1.260	1.654	M6	3.0
HSK E 50 SRK1/2 X3.000**	.500	.790	1.102	4.024	3.000	2.229	1.260	1.654	M10	5.0
HSK E 63 SRK1/8 X1.750**	.125	.390	.590	2.774	1.750	1.400	.394	.630	M6	3
HSK E 63 SRK1/8 X3.000**	.125	.390	.748	4.024	3.000	2.526	.394	.630	M6	3
HSK E 63 SRK3/16X1.750**	.187	.390	.590	2.774	1.750	1.400	.590	.826	M6	3
HSK E 63 SRK3/16X3.000**	.187	.390	.748	4.024	3.000	2.526	.590	.826	M6	3
HSK E 63 SRK1/4 X1.750**	.250	.430	.630	2.774	1.750	1.400	.709	.945	M8	4
HSK E 63 SRK1/4 X3.000**	.250	.430	.787	4.024	3.000	2.524	.709	.945	M8	4
HSK E 63 SRK5/16X1.750**	.312	.550	.787	2.774	1.750	1.673	.984	1.378	M6	3
HSK E 63 SRK5/16X3.000**	.312	.550	.905	4.024	3.000	2.518	.984	1.378	M6	3
HSK E 63 SRK3/8 X1.750**	.375	.630	.866	2.774	1.750	1.670	1.181	1.575	M8	4
HSK E 63 SRK3/8 X3.000**	.375	.630	1.000	4.024	3.000	2.373	1.181	1.575	M8	4
HSK E 63 SRK7/16X1.750**	.437	.790	1.024	2.774	1.750	1.665	1.220	1.614	M8	4
HSK E 63 SRK7/16X3.000**	.437	.790	1.102	4.024	3.000	2.229	1.220	1.614	M10	5
HSK E 63 SRK1/2 X1.750**	.500	.790	1.024	2.774	1.750	1.665	1.260	1.654	M8	4
HSK E 63 SRK1/2 X3.000**	.500	.790	1.102	4.024	3.000	2.229	1.260	1.654	M10	5

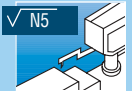
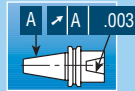
* Balanced to G2.5 35,000 RPM

** Balanced to G2.5 30,000 RPM

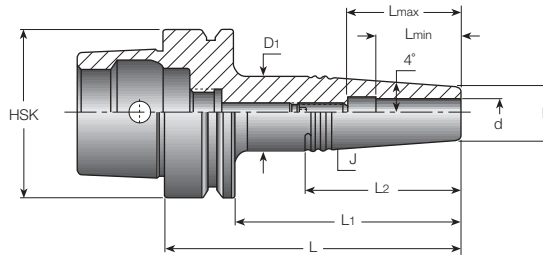
*** Metric

HSK - THERMAL SHRINKING HOLDER - METRIC

Taper Size
HSK-E 32, 40, 50 & 63



G2.5
40,000 RPM



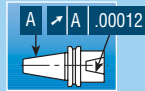
Designation	d	D ₁	D	L	L ₁	L ₂	L _{min}	L _{max}	J	Hex Key
HSK E 32 SRK 3X 45	3	13.0	10	65	45	30	10	16	M4	2.0
HSK E 32 SRK 4X 45	4	15.0	10	65	45	35	12	18	M4	2.0
HSK E 32 SRK 5X 45	5	15.0	10	65	45	35	15	25	M4	2.0
HSK E 32 SRK 6X 45	6	16.0	11	65	45	35	18	28	M4	2.0
HSK E 32 SRK 8X 45	8	20.0	14	65	45	42	25	35	M4	2.0
HSK E 32 SRK 10X 45	12	22.0	16	65	45	42	30	40	M4	2.0
HSK E 32 SRK 12X 45	12	25.0	20	65	45	35.6	32	40	M4	2.0
HSK E 40 SRK 3X 45	3	13.0	10	65	45	30	10	16	M5	2.5
HSK E 40 SRK 3X 80	3	19.0	10	100	80	64	10	16	M5	2.5
HSK E 40 SRK 4X 45	4	15.0	10	65	45	35	12	18	M5	2.5
HSK E 40 SRK 4X 80	4	19.0	10	100	80	64	12	18	M5	2.5
HSK E 40 SRK 5X 45	5	15.0	10	65	45	35	15	25	M4	2.0
HSK E 40 SRK 5X 80	5	19.0	10	100	80	64	15	25	M4	2.0
HSK E 40 SRK 6X 45	6	16.0	11	65	45	35	18	28	M5	2.5
HSK E 40 SRK 6X 80	6	20.0	11	100	80	64	18	28	M5	2.5
HSK E 40 SRK 8X 45	8	20.0	14	65	45	42	25	35	M5	2.5
HSK E 40 SRK 8X 80	8	23.0	14	100	80	64	25	35	M6	3.0
HSK E 40 SRK 10X 45	10	22.0	16	65	45	42	30	40	M5	2.5
HSK E 40 SRK 10X 80	10	24.5	16	100	80	60	30	40	M8	4.0
HSK E 40 SRK 12X 45	12	26.0	20	65	45	42	32	42	M5	2.5
HSK E 40 SRK 12X 80	12	28.0	20	100	80	56	32	42	M10	5.0
HSK E 50 SRK 3X 45*	3	15.0	10	71	45	36	10	16	M5	2.5
HSK E 50 SRK 3X 80*	3	19.0	10	106	80	64	10	16	M5	2.5
HSK E 50 SRK 4X 45*	4	15.0	10	71	45	36	12	18	M5	2.5
HSK E 50 SRK 4X 80*	4	19.0	10	106	80	64	12	18	M5	2.5
HSK E 50 SRK 5X 45*	5	15.0	10	71	45	36	15	21	M6	3.0
HSK E 50 SRK 5X 80*	5	19.0	10	106	80	64	15	21	M6	3.0
HSK E 50 SRK 6X 45*	6	16.0	11	71	45	36	18	28	M5	2.5
HSK E 50 SRK 6X 80*	6	20.0	11	106	80	64	18	28	M5	2.5
HSK E 50 SRK 8X 45*	8	20.0	14	71	45	43	25	35	M6	3.0
HSK E 50 SRK 8X 80*	8	23.0	14	106	80	64	25	35	M6	3.0
HSK E 50 SRK 10X 45*	10	22.0	16	71	45	42	30	37	M6	3.0
HSK E 50 SRK 10X 80*	10	24.5	16	106	80	60	30	40	M8	4.0
HSK E 50 SRK 12X 45*	12	26.0	20	71	45	42	32	39	M6	3.0
HSK E 50 SRK 12X 80*	12	28.0	20	106	80	57	32	42	M10	5.0
HSK E 63 SRK 3X 45**	3	15.0	10	71	45	36	10	16	M6	3
HSK E 63 SRK 3X 80**	3	19.0	10	106	80	64	10	16	M6	3
HSK E 63 SRK 4X 45**	4	15.0	10	71	45	36	12	18	M6	3
HSK E 63 SRK 4X 80**	4	19.0	10	106	80	64	12	18	M6	3
HSK E 63 SRK 5X 45**	5	15.0	10	71	45	36	15	21	M6	3
HSK E 63 SRK 5X 80**	5	19.0	10	106	80	64	15	21	M6	3
HSK E 63 SRK 6X 45**	6	16.0	11	71	45	36	18	24	M8	4
HSK E 63 SRK 6X 80**	6	20.0	11	106	80	64	18	24	M8	4
HSK E 63 SRK 8X 45**	8	20.0	14	71	45	43	25	35	M6	3
HSK E 63 SRK 8X 80**	8	23.0	14	106	80	64	25	35	M6	3
HSK E 63 SRK 10X 45**	10	22.0	16	71	45	42	30	40	M8	4
HSK E 63 SRK 10X 80**	10	24.5	16	106	80	60	30	40	M8	4
HSK E 63 SRK 12X 45**	12	26.0	20	71	45	42	32	42	M8	4
HSK E 63 SRK 12X 80**	12	28.0	20	106	80	57	32	42	M10	5
HSK E 63 SRK 12X 90**	12	28.0	20	116	90	57	32	43	M8	4

* Balanced to G2.5 35,000 RPM

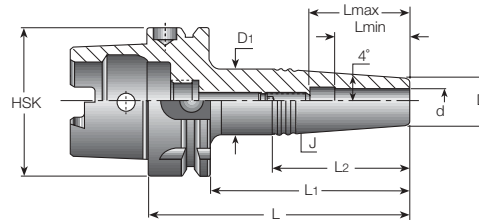
** Balanced to G2.5 30,000 RPM

HSK - THERMAL SHRINKING HOLDER

Taper Size
HSK-A 63



G2.5
25,000 RPM

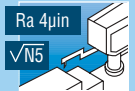
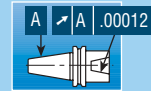


Designation	d	D	D ₁	L	L ₁	L ₂	L _{min}	L _{max}	J	Hex Key*
HSK A 63 SRK1/8 X2.000	.125	.390	.699	3.024	2.000	-	.394	.630	M6	3
HSK A 63 SRK1/8 X3.250	.125	.390	.823	4.274	3.250	3.098	.394	.630	M6	3
HSK A 63 SRK3/16X2.000	.187	.390	.699	3.024	2.000	-	.590	.826	M6	3
HSK A 63 SRK3/16X3.250	.187	.390	.823	4.274	3.250	3.098	.590	.826	M6	3
HSK A 63 SRK1/4 X2.000	.250	.430	.699	3.024	2.000	-	.709	.945	M8	4
HSK A 63 SRK1/4 X3.250	.250	.430	.823	4.274	3.250	3.098	.709	.945	M8	4
HSK A 63 SRK5/16X2.000	.312	.550	.709	3.024	2.000	-	.984	1.417	M6	3
HSK A 63 SRK5/16X3.250	.312	.550	.866	4.274	3.250	3.098	.984	1.417	M6	3
HSK A 63 SRK3/8 X2.000	.375	.630	.787	3.024	2.000	1.693	1.181	1.614	M8	4
HSK A 63 SRK3/8 X3.250	.375	.630	.906	4.274	3.250	2.535	1.181	1.614	M8	4
HSK A 63 SRK7/16X2.000	.437	.790	.906	3.024	2.000	-	1.220	1.654	M8	4
HSK A 63 SRK7/16X3.250	.437	.790	1.024	4.274	3.250	2.815	1.220	1.654	M10	5
HSK A 63 SRK1/2 X2.000	.500	.790	1.063	3.024	2.000	-	1.260	1.693	M8	4
HSK A 63 SRK1/2 X3.250	.500	.790	1.181	4.274	3.250	2.815	1.260	1.693	M10	5

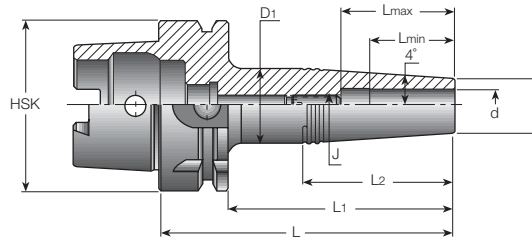
* Metric

HSK - THERMAL SHRINKIN HOLDER - METRIC

Taper Size
HSK-A 63



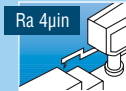
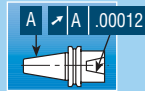
G2.5
25,000 RPM



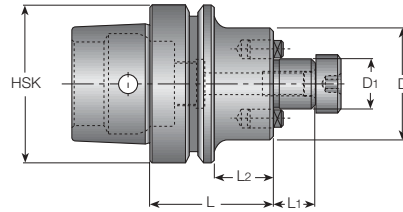
Designation	d	D ₁	D	L	L ₁	L ₂	L _{min}	L _{max}	J	Hex Key
HSK A 63 SRK 3X 50	3	17.0	10	76	50		10	16	M6	3
HSK A 63 SRK 3X 85	3	21.0	10	111	85	79	10	16	M6	3
HSK A 63 SRK 4X 50	4	17.0	10	76	50		12	18	M6	3
HSK A 63 SRK 4X 85	4	21.0	10	111	85	79	12	18	M6	3
HSK A 63 SRK 5X 50	5	17.0	10	76	50		15	21	M6	3
HSK A 63 SRK 5X 85	5	21.0	10	111	85	79	15	21	M6	3
HSK A 63 SRK 6X 50	6	18.0	11	76	50		18	24	M8	4
HSK A 63 SRK 6X 85	6	22.0	11	111	85	79	18	24	M8	4
HSK A 63 SRK 8X 50	8	20.0	14	76	50	43	25	36	M6	3
HSK A 63 SRK 8X 85	8	23.0	14	111	85	64	25	36	M6	3
HSK A 63 SRK 10X 50	10	23.0	16	76	50		30	41	M8	4
HSK A 63 SRK 10X 85	10	26.0	16	111	85	72	30	41	M8	4
HSK A 63 SRK 12X 50	12	27.0	20	76	50		32	43	M8	4
HSK A 63 SRK 12X 85	12	30.0	20	111	85	72	32	43	M8	4

HSK - SHELL MILL ADAPTER

Taper Size
HSK-E 32, 40, 50 & 63



G2.5
15,000 RPM

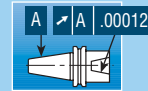


Designation	HSK-E	D ₁	L	L ₂	D	L ₁
HSK E 32 SEM3/4 X2.000	32	.750	2.000	1.213	1.771	.669
HSK E 40 SEM3/4 X2.000	40	.750	2.000	1.213	1.771	.669
HSK E 50 SEM3/4 X2.375	50	.750	2.375	1.351	1.771	.669
HSK E 63 SEM3/4 X2.375	63	.750	2.375	1.351	1.771	.669
HSK E 63 SEM 1 X2.375	63	1.000	2.375	1.351	2.079	.669

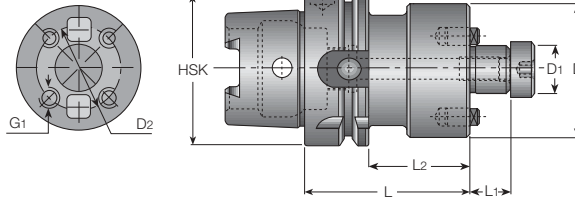
Face mill DIN 6357

HSK - SHELL MILL ADAPTER

Taper Size
HSK-A 50, 63 and 100



G2.5
15,000 RPM

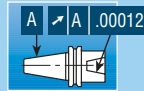


Designation		HSK-A	D ₁	L	L ₁	L ₂	D
HSK A50 SEM3/4	X2.375	50	.750	2.375	.669	1.351	1.770
HSK A50 SEM1	X2.500	50	1.000	2.500	.669	1.476	2.172
HSK A50 SEM1-1/4	X3.000	50	1.250	3.000	.669	1.976	2.516
HSK A63 SEM3/4	X2.375	63	.750	2.375	.669	1.351	1.770
HSK A63 SEM1	X1.750	63	1.000	1.750	.669	.726	2.086
HSK A63 SEM1-1/4	X2.375	63	1.250	2.375	.669	1.351	2.510
HSK A63 SEM1-1/2	X2.375	63	1.500	2.375	.938	1.351	3.070
HSK A63 SEM2	X2.375	63	2.000	2.375	.938	1.351	3.850
HSK A100 SEM3/4	X3.000*	100	.750	3.000	.669	1.858	1.770
HSK A100 SEM1	X2.375*	100	1.000	2.375	.669	1.233	2.165
HSK A100 SEM1-1/4	X1.875*	100	1.250	1.875	.669	.733	2.500
HSK A100 SEM1-1/2	X1.875*	100	1.500	1.875	.938	.733	3.881
HSK A100 SEM2	X2.375*	100	2.000	2.375	.938	1.233	3.881

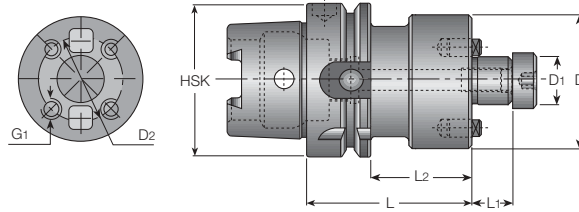
* Balanced to G6.3 12,000 RPM

HSK - FACE MILL HOLDER

Taper Size
HSK-A 100



G2.5
15,000 RPM



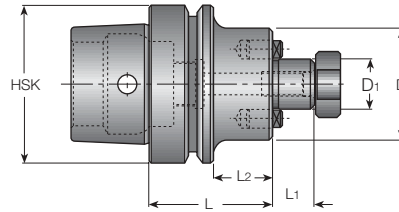
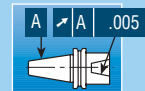
Designation	D ₁	L	L ₁	D	D ₂ *	G ₁ *
HSK A100 FM2-1/2x2.875	2.500	2.875	1.122	4.881	1.125	5/8-11

* Exists only in "FM" holders

■ HSK - SHELL MILL ADAPTER - METRIC

Taper Size

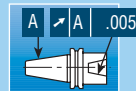
HSK-E 32, 40, 50 & 63



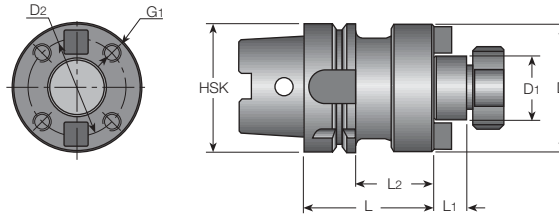
Designation	HSK-E	D ₁	D	L	L ₂	L ₁
HSK E 32 SEM 16x50	32	16	38	50	30	17
HSK E 32 SEM 22x50	32	22	47	50	30	19
HSK E 40 SEM 16x50	40	16	38	50	30	17
HSK E 40 SEM 22x50	40	22	47	50	30	19
HSK E 50 SEM 22X 60	50	22	47	60	34	19
HSK E 63 SEM 16X 50	63	16	38	50	24	17
HSK E 63 SEM 22X 50	63	22	47	50	24	19

HSK - SHELL MILL ADAPTER - METRIC

Taper Size
HSK-A 40, 50, 63 & 100



G2.5
15,000 RPM

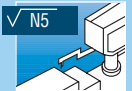
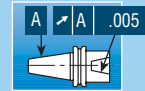


Designation	HSK-A	D ₁	L	D	L ₁	L ₂
HSK A 40 SEM 22	40	22	47	50	19	30
HSK A 40 SEM 27	40	27	58	55	21	35
HSK A 50 SEM 16X 50	50	16	50	38	17	24
HSK A 50 SEM 22X 60	50	22	60	47	19	34
HSK A 50 SEM 27X 60	50	27	60	58	21	34
HSK A 63 SEM 16X 50	63	16	50	38	17	24
HSK A 63 SEM 22X 50	63	22	50	47	19	24
HSK A 63 SEM 27X 60	63	27	60	58	21	34
HSK A 63 SEM 32X 60	63	32	60	66	24	34
HSK A 63 SEM 40X 60	63	40	60	82	27	34
HSK A 100 SEM 22X 50*	100	22	50	47	19	21
HSK A 100 SEM 27X 50*	100	27	50	58	21	21
HSK A 100 SEM 32X 50*	100	32	50	66	24	21
HSK A 100 SEM 40X 60*	100	40	60	82	27	31
HSK A 100 SEM 50X 70*	100	50	70	95	30	41

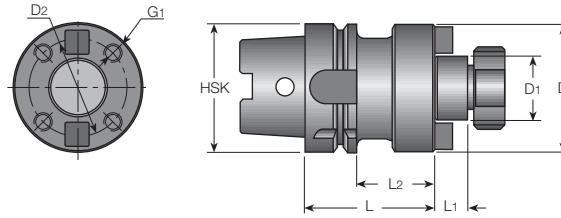
* Balanced to G6.3 12,000 RPM

■ HSK - FACE MILL HOLDER - METRIC

Taper Size
HSK-A 100



G2.5
15,000 RPM

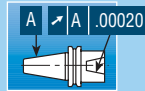


Designation	HSK-A	D ₁	L	D	L ₁	D ₂ *	G ₁ *
HSK A 100 FM 60X70	100	60	70	128	40	101.6	M16

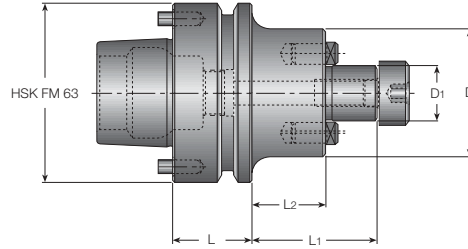
* Available only "FM" holders

HSK - SHELL MILL ADAPTER FOR MAKINO MAG3, MAG4 AND V77 MACHINE MODELS

Taper Size
HSK-FM 63



G2.5
30,000 RPM

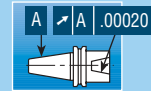


Used for MAKINO's machine models MAG3, MAG4 and V77. These tools are based on the HSK 63 F type with two drive pins which improve torque transmission.

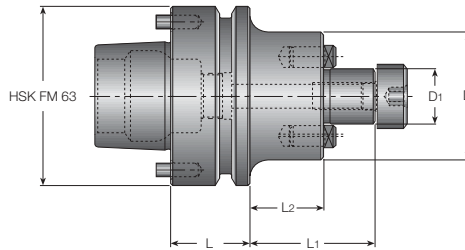
Designation	D ₁	L	D	L ₁	L ₂
HSK FM 63 SEM 3/4x3.00	.750	3.000	1.772	.669	1.876
HSK FM 63 SEM 3/4x4.50	.750	4.500	1.772	.669	3.476
HSK FM 63 SEM 1x2.375	1.000	2.375	2.079	.669	1.351

■ HSK - SHELL MILL ADAPTER FOR MAKINO MAG3, MAG4 AND V77 MACHINE MODELS - METRIC

Taper Size
HSK-FM 63



G2.5
30,000 RPM



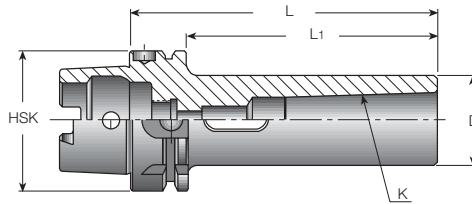
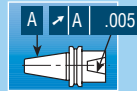
Used for MAKINO's machine models MAG3, MAG4 and V77. These tools are based on the HSK 63 F type with two drive pins which improve torque transmission.

Designation	D ₁	L	D	L ₁	L ₂
HSK FM 63 SEM 22x60	22	60	47	19	34
HSK FM 63 SEM 27x60	27	60	58	21	34
HSK FM 63 SEM 32x60	32	60	66	24	34

* The driving pins can be removed, turning the toolholder into a standard HSK F type.

HSK - MORSE TAPER ADAPTER - METRIC

Taper Size
HSK-A 50, 63 and 100

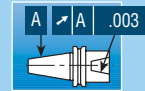


Designation	HSK-A	K	D	L	L ₁
HSK A 50 MT1X100	50	MT1	25	100	74
HSK A 50 MT2X120	50	MT2	32	120	94
HSK A 50 MT3X140	50	MT3	40	140	114
HSK A 63 MT1X110	63	MT1	25	110	84
HSK A 63 MT2X120	63	MT2	32	120	94
HSK A 63 MT3X140	63	MT3	40	140	114
HSK A 63 MT4X160	63	MT4	48	160	134
HSK A 100 MT1X110	100	MT1	25	110	81
HSK A 100 MT2X120	100	MT2	32	120	91
HSK A 100 MT3X150	100	MT3	40	150	121
HSK A 100 MT4X170	100	MT4	48	170	141
HSK A 100 MT5X200	100	MT5	63	200	171

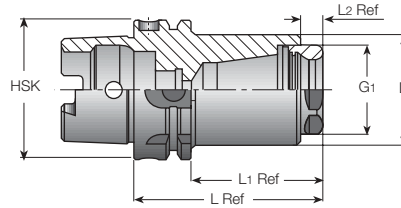
* Balanced to G2.5 35,000RPM

■ HSK - SHORT ER COLLET CHUCK - METRIC

Taper Size
HSK-A 63 and 100



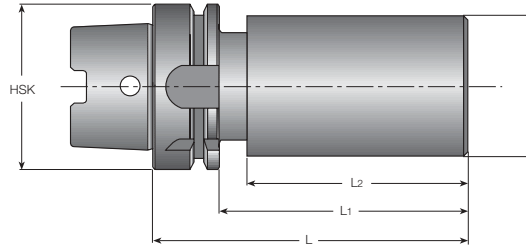
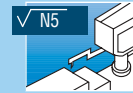
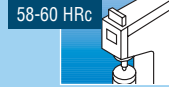
G2.5
20,000 RPM



Designation	HSK-A	Range	D	L	L ₁	L ₂	G ₁
HSK A 63 ER32 SHORT	63	2-20	50	84.5	56.1	9.5	M40x1.5
HSK A 100 ER32 SHORT	100	2-20	50	89.5	60.5	9.5	M40x1.5
HSK A 100 ER40 SHORT	100	3-26	70	104.5	75.5	9.5	M50x1.5

HSK - BLANK END - METRIC

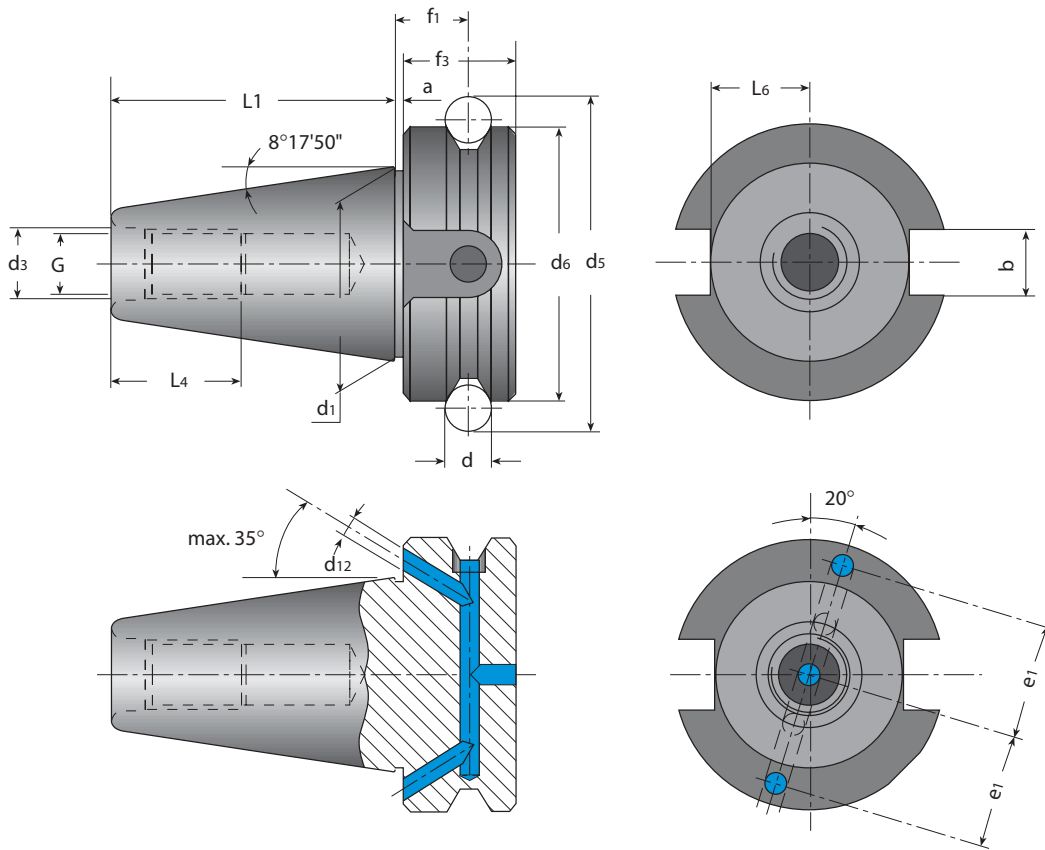
Taper Size
HSK-A 50, 63 and 100



Designation	HSK-A	D	D ₁	L	L ₁	L ₂
HSK A 50 B16MN 100	50	53	41.8	100	74	58.0
HSK A 50 B16MN 200	50	53	41.8	200	174	158.0
HSK A 63 B16MN 100	63	63	52.8	100	74	55.5
HSK A 63 B16MN 200	63	63	52.8	200	174	155.5
HSK A 100 B16MN 100	100	102	85.0	100	71	54.8
HSK A 100 B16MN 200	100	102	85.0	200	171	154.8

Material: Case hardened alloy steel.
Shank hardness 58 HRC minimum.
Nose hardness 35-37 HRC.

BT - TOOLHOLDER STANDARD



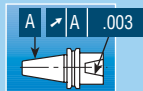
BT MAS 403

Shank	a	b (H ₁₂)	d	d ₁	G	d ₃ (H ₈)	d ₅	d ₆ (H ₈)	f ₁ ±0.1
BT 30	2	16.1	8	31.75	M12	12.5	56.144	46	13.6
BT 40	2	16.1	10	44.45	M16	17.0	75.679	63	16.6
BT 50	3	25.7	15	69.85	M24	25.0	119.020	100	23.2

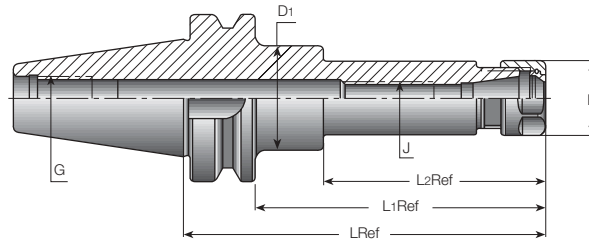
Shank	f ₃	L ₁ ±0.2	L ₄ MIN	L ₅ -0.2	e ₁ ±0.1	d ₁₂	TAPER AT3
BT 30	20	48.4	24	16.3	21	4	0.002
BT 40	25	65.4	30	22.6	27	4	0.003
BT 50	35	101.8	45	35.4	42	6	0.004

BT - ER COLLET CHUCK - METRIC

Taper Size
BT 30, 40 and 50



G2.5
20,000 RPM

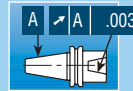


Designation	Range	L	L ₁	L ₂	D	D ₁	G	J
BT30 ER16X70*	0.5-10	70	48		28		M12	M10
BT30 ER16X100*	0.5-10	100	73		28		M12	M10
BT30 ER20X70*	1-13	70	48		34		M12	M12
BT40 ER16X70	0.5-10	70	43		28		M16	M12
BT40 ER16X100	0.5-10	100	73		28		M16	M12
BT40 ER16X150	0.5-10	150	123	110	28	40	M16	M12
BT40 ER16X200	0.5-10	200	173	85	28	40	M16	M10
BT40 ER20X70	1-13	70	43		34		M16	M12
BT40 ER20X100	1-13	100	73		34		M16	M12
BT40 ER20X120	1-13	120	93		34		M16	M12
BT40 ER20X150	1-13	150	123		34		M16	M12
BT50 ER16X100*	0.5-10	100	62		28		M24	M12
BT50 ER16X125*	0.5-10	125	87		28		M24	M12
BT50 ER16X150*	0.5-10	150	112		28		M24	M12
BT50 ER16X200*	0.5-10	200	162	85	28	40	M24	M10
BT50 ER20X100*	1-13	100	62		34		M24	M12
BT50 ER20X125*	1-13	125	87		34		M24	M12
BT50 ER20X150*	1-13	150	112		34		M24	M12
BT50 ER20X200*	1-13	200	162	85	34	50	M24	M12

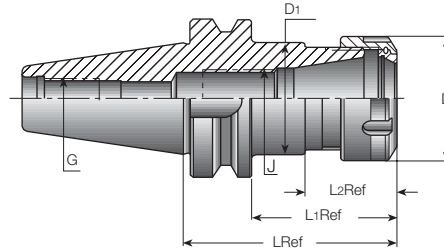
Add B for coolant through the flange.
* Balanced to G6.3 at 12,000RPM

BT - ER COLLET CHUCK - METRIC

Taper Size
BT 30, 40 and 50



G2.5
20,000 RPM



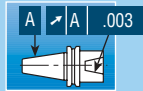
Designation	Range	L	L ₁	L ₂	D	D ₁	G	J
BT30 ER25X 60*	1-16	60	38		42		M12	M16
BT30 ER32X 60*	2-20	60	38		50		M12	M16
BT40 ER25X 60	1-16	60	33		42		M16	M16
BT40 ER25X100	1-16	100	73		42		M16	M16
BT40 ER25X150	1-16	150	123		42		M16	M16
BT40 ER32X 60	2-20	60	33		50		M16	M22x1.5
BT40 ER32X100	2-20	100	73		50		M16	M22x1.5
BT40 ER32X120	2-20	120	93		50		M16	M22x1.5
BT40 ER32X150	2-20	150	123		50		M16	M22x1.5
BT40 ER32X200	2-20	200	173		50		M16	M22x1.5
BT40 ER40X 80	3-26	80	53		63		M16	M28x1.5
BT40 ER40X100	3-26	100	73		63		M16	M28x1.5
BT40 ER40X150	3-26	150	123		63		M16	M28x1.5
BT40 ER40X200	3-26	200	173		63		M16	M28x1.5
BT40 ER50X 90	10-34	90	63		78		M16	M28x1.5
BT50 ER25X100*	1-16	100	62		42		M24	M16
BT50 ER25X150*	1-16	150	112		42		M24	M16
BT50 ER25X200*	1-16	200	162	87	42	55	M24	M16
BT50 ER32X100*	2-20	100	62		50		M24	M22x1.5
BT50 ER32X125*	2-20	125	87		50		M24	M22x1.5
BT50 ER32X150*	2-20	150	112		50		M24	M22x1.5
BT50 ER32X200*	2-20	200	162	88	50	63	M24	M22x1.5
BT50 ER40X100*	3-26	100	62		63		M24	M28x1.5
BT50 ER40X150*	3-26	150	112		63		M24	M28x1.5
BT50 ER40X200*	3-26	200	162		63		M24	M28x1.5
BT50 ER50X100*	10-34	100	62		78		M24	M36x1.5
BT50 ER50X150*	10-34	150	112		78		M24	M36x1.5

Add B for coolant through the flange.

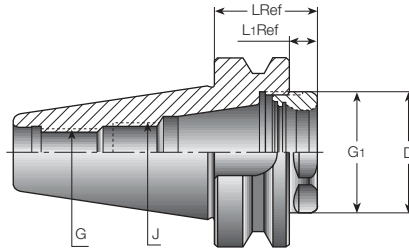
* Balanced to G6.3 at 12,000 RPM

BT - SHORT ER COLLET CHUCK - METRIC

Taper Size
BT 30, 40 and 50



G2.5
20,000 RPM

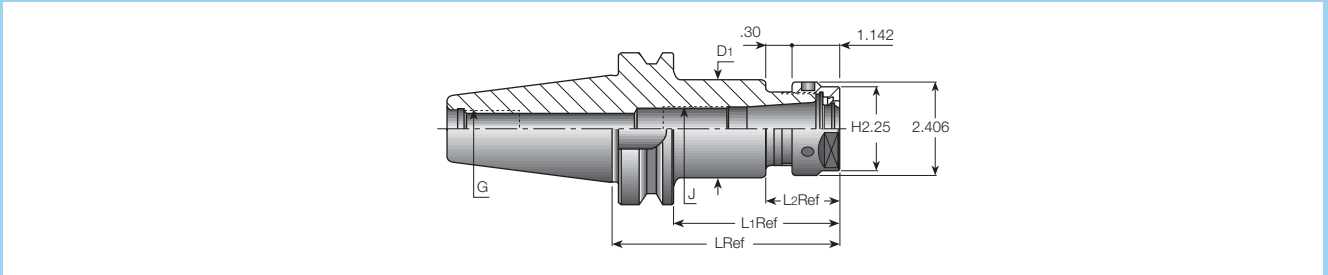
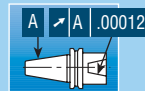


Designation	Range	L	L ₁	D	J	G	G ₁
BT30 ER20 SHORT	1-13	27.2	5.2	25	M12	M12	M25x1.5
BT40 ER32 SHORT	2-20	36.5	9.5	40	M16	M16	M40x1.5
BT40 ER40 SHORT	3-26	46.5	9.5	50	M16	M16	M50x1.5
BT50 ER32 SHORT	2-20	47.5	9.5	40	M22x1.5	M24	M40x1.5
BT50 ER40 SHORT	3-26	47.5	9.5	50	M28x1.5	M24	M50x1.5

Add B for coolant through the flange

BT - TG100 COLLET CHUCK

Taper Size
BT-40



Designation	Range	L	L ₁	L ₂	D	J**	G
BT40 TG100X3.000	.094-1.00	3.000	1.937	1.559	1.886	1-1/8-16	M16
BT40 TG100X4.000	.094-1.00	4.000	2.937	1.555	1.886	1-1/8-16	M16
BT40 TG100X6.000	.094-1.00	6.000	4.937	1.569	1.886	1-1/8-16	M16
BT50 TG100X3.500	.094-1.00	3.500	2.004	1.669	2.500	1-1/8-16	M24
BT50 TG100X5.500	.094-1.00	5.500	4.004	1.789	2.500	1-1/8-16	M24
BT50 TG100X7.500	.094-1.00	7.500	6.004	1.789	2.500	1-1/8-16	M24

Add B for internal coolant flange.

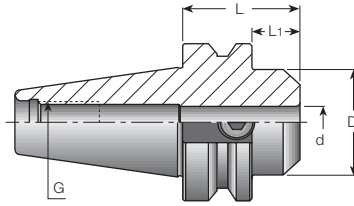
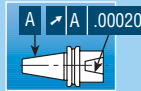
* This collet chuck type is interchangeable with the following collets:
Kennametal TG 100; Command 1000; Valenite, OSG; Lyndex 1000

** Left-handed thread



BT - ENDMILL HOLDER SHORT LENGTH

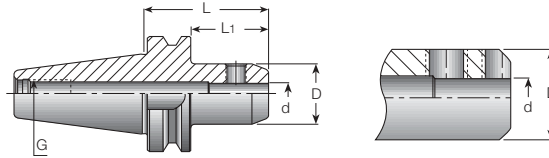
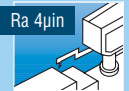
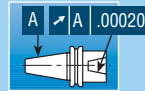
Taper Size
BT-40



Designation	d	L	D	L ₁	G
BT40 EM 3/8 X1.750	.375	1.750	1.378	.687	M16
BT40 EM 1/2 X1.750	.500	1.750	1.654	.687	M16
BT40 EM 5/8 X1.750	.625	1.750	1.890	.687	M16
BT40 EM 3/4 X1.750	.750	1.750	2.047	.687	M16
BT40 EM 1 X1.750	1.000	1.750	2.480	-	M16
BT40 EM 1-1/4X2.000	1.250	2.000	2.480	-	M16

BT - ENDMILL HOLDER

Taper Size
BT-40 and 50

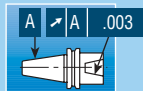


Designation	d	L	D	L ₁	G
BT40 EM 3/16X1.937	.188	1.937	.984	.906	M16
BT40 EM 1/4X2.375	.250	2.375	1.000	1.299	M16
BT40 EM 3/8X2.562	.375	2.562	1.378	1.496	M16
BT40 EM 1/2X2.562	.500	2.562	1.654	1.496	M16
BT40 EM 5/8X2.562	.625	1.750	1.890	1.496	M16
BT40 EM 3/4X2.937	.750	2.937	2.047	1.890	M16
BT40 EM 7/8X4.125	.875	4.125	2.559	3.055	M16
BT40 EM 1X4.125	1.000	4.125	2.559	3.138	M16
BT40 EM 1-1/4x4.312	1.250	4.312	2.795	2.854	M16
BT40 EM 1-1/2X4.625	1.500	4.625	3.150	3.031	M16
BT50 EM 1/4X2.750	.250	2.750	1.000	1.260	M24
BT50 EM 3/8X2.750	.375	2.750	1.378	1.260	M24
BT50 EM 1/2X3.937	.500	3.937	1.654	2.441	M24
BT50 EM 5/8X3.937	.625	3.937	1.890	2.441	M24
BT50 EM 3/4X3.937	.750	3.937	2.047	2.441	M24
BT50 EM 7/8X4.500	.875	4.500	2.559	3.039	M24
BT50 EM 1X4.500	1.000	4.500	2.559	3.031	M24
BT50 EM 1-1/4X4.500	1.250	4.500	2.835	3.031	M24
BT50 EM 1-1/2X4.500	1.500	4.500	3.150	3.031	M24
BT50 EM 2X4.937	2.000	4.937	3.859	3.441	M24

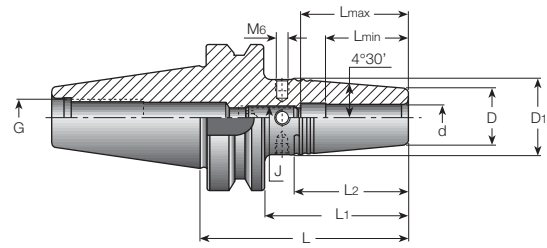
Add B for internal coolant flange

BT - THERMAL SHRINKIN HOLDER - METRIC

Taper Size
BT40 and 50



G2.5
25,000 RPM

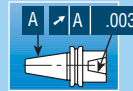


Designation	d	D ₁	D	L	L ₁	L ₂	L _{min}	L _{max}	J	G	Hex Key
BT40 SRKIN 6X 90	6	27	21	90	63	38.0	25	36	M5	M16	2.5
BT40 SRKIN 8X 90	8	27	21	90	63	38.0	25	36	M6	M16	3.0
BT40 SRKIN 10X 90	10	32	24	90	63	50.5	31	42	M8	M16	4.0
BT40 SRKIN 12X 90	12	32	24	90	63	50.5	36	47	M10	M16	5.0
BT40 SRKIN 14X 90	14	34	27	90	63	44.5	36	47	M10	M16	5.0
BT40 SRKIN 16X 90	16	34	27	90	63	44.5	39	50	M12	M16	6.0
BT40 SRKIN 18X 90	18	42	33	90	63	57.0	39	50	M12	M16	6.0
BT40 SRKIN 20X 90	20	42	33	90	63	57.0	41	52	M16	M16	8.0
BT40 SRKIN 25X110	25	53	44	110	83	57.0	47	58	M16	M16	8.0
BT50 SRKIN 6X100*	6	26	21	100	62	32.0	25	36	M5	M24	2.5
BT50 SRKIN 8X100*	8	27	21	100	62	38.0	25	36	M6	M24	3.0
BT50 SRKIN 10X100*	10	32	24	100	62	51.0	31	42	M8	M24	4.0
BT50 SRKIN 12X100*	12	32	24	100	62	51.0	36	47	M10	M24	5.0
BT50 SRKIN 14X100*	14	34	27	100	62	44.5	36	47	M10	M24	5.0
BT50 SRKIN 16X100*	16	34	27	100	62	44.5	39	50	M12	M24	6.0
BT50 SRKIN 18X100*	18	42	33	100	62	57.0	39	50	M12	M24	6.0
BT50 SRKIN 20X100*	20	42	33	100	62	57.0	41	52	M16	M24	8.0
BT50 SRKIN 25X120*	25	53	44	120	82	57.0	47	58	M16	M24	8.0
BT50 SRKIN 32X120*	32	53	44	120	82	57.0	47	58	M16	M24	8.0

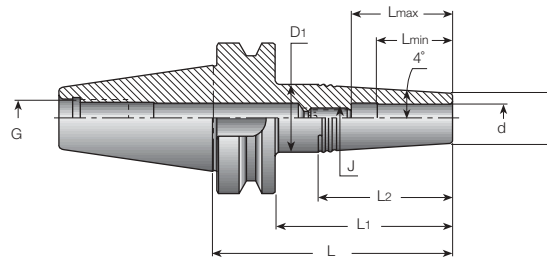
* Balanced to G2.5 20,000 RPM
Use only inductive heating device for SRKIN holders

BT - THERMAL SHRINKIN HOLDER - METRIC

Taper Size
BT-40



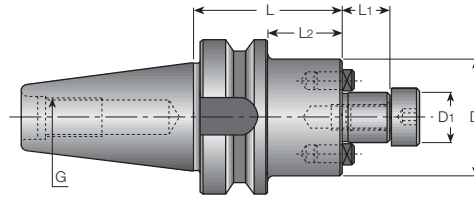
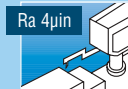
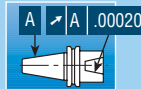
G2.5
25,000 RPM



Designation	d	D	D ₁	L	L ₁	L ₂	L _{min}	L _{max}	J	G	Hex Key
BT 40 SRK 3X 50	3	10	15	77	50	35.5	10	16	M6	M16	3
BT 40 SRK 3X 85	3	10	19	112	85	64.1	10	16	M6	M16	3
BT 40 SRK 4X 50	4	10	15	77	50	35.5	12	18	M6	M16	3
BT 40 SRK 4X 85	4	10	19	112	85	64.1	12	18	M6	M16	3
BT 40 SRK 5X 50	5	10	15	77	50	35.5	15	21	M6	M16	3
BT 40 SRK 5X 85	5	10	19	112	85	64.1	15	21	M6	M16	3
BT 40 SRK 6X 50	6	11	16	77	50	35.5	18	24	M8	M16	4
BT 40 SRK 6X 85	6	11	20	112	85	64.1	18	24	M8	M16	4
BT 40 SRK 8X 50	8	14	20	77	50	42.5	25	31	M10	M16	5
BT 40 SRK 8X 85	8	14	23	112	85	63.9	25	31	M10	M16	5
BT 40 SRK 10X 50	10	16	22	77	50	42.4	30	36	M12	M16	6
BT 40 SRK 10X 85	10	16	25	112	85	60.2	30	36	M12	M16	6
BT 40 SRK 12X 50	12	20	26	77	50	42.3	32	42	M10	M16	5
BT 40 SRK 12X 85	12	20	28	112	85	56.6	32	42	M10	M16	5

BT - MILLING HOLDER WITH SHELL END

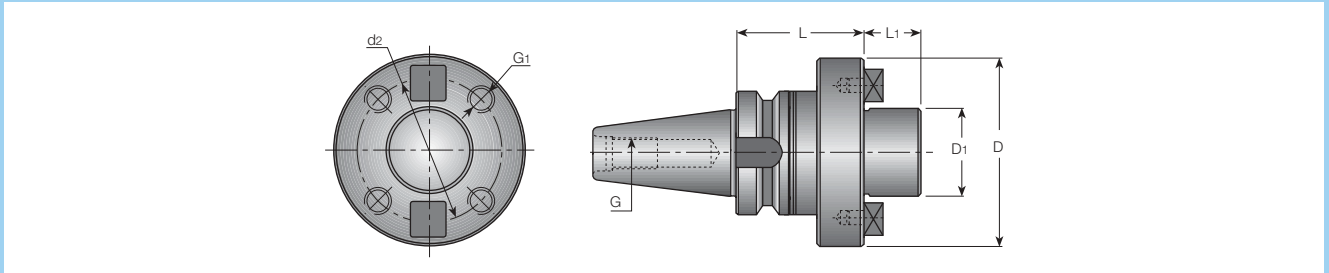
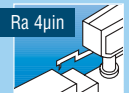
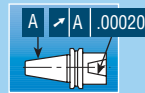
Taper Size
BT-40 and 50



Designation	D ₁	D	L	L ₁	L ₂	G
BT40 SEM 1/2X2.375	.500	1.378	2.375	.571	.728	M16
BT40 SEM 3/4X2.375	.750	1.772	2.375	.669	1.299	M16
BT40 SEM 1X1.750	1.000	2.165	1.750	.669	.687	M16
BT40 SEM 1-1/4X2.375	1.250	2.520	2.375	.669	.906	M16
BT40 SEM 1-1/2X2.375	1.500	3.071	2.375	.937	.819	M16
BT50 SEM 3/4X2.937	.750	1.772	2.937	.669	1.441	M24
BT50 SEM 1X2.375	1.000	2.165	2.375	.669	.878	M24
BT50 SEM 1-1/4X1.875	1.250	2.520	1.875	.669	.394	M24
BT50 SEM 1-1/2X1.875	1.500	3.071	1.875	.937	.379	M24
BT50 SEM 2 X2.375	2.000	3.859	2.375	.937	.879	M24

BT - FACE MILL HOLDER

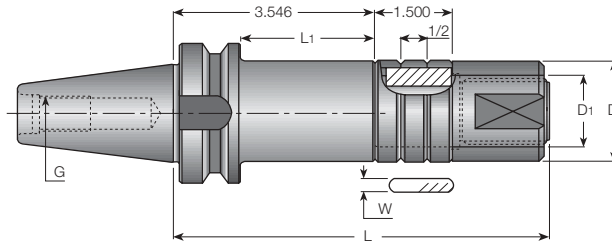
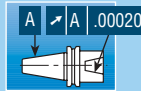
Taper Size
BT-50



Designation	D ₁	L	L ₁	D	d ₂	G ₁	G
BT50 FM2-1/2X3.469	2.500	3.469	1.125	5.062	4.000	5/8-11	M24

BT - FACE MILL HOLDER COMBI - SHELL MILL HOLDER

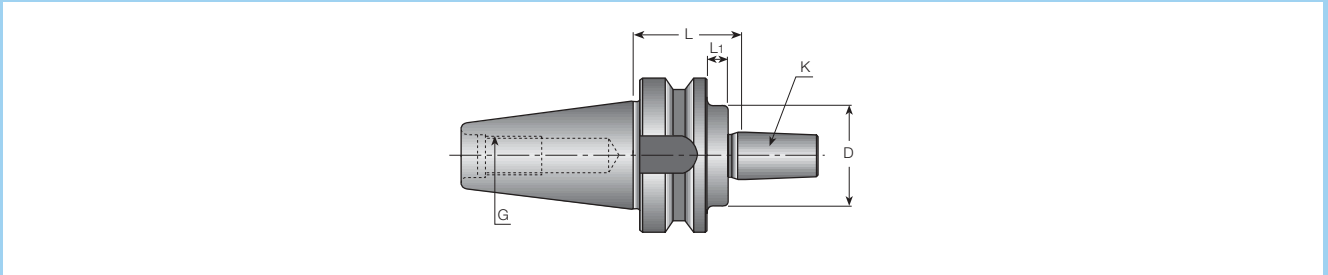
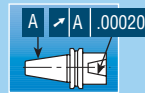
Taper Size
BT-40 and 50



Designation	D ₁	L ₁	L	D	W	G
BT40 STUB 1X3.546	1.000	2.480	6.260	1.500	.250	M16
BT40 STUB 1-1/4X3.546	1.250	2.480	6.378	1.772	.312	M16
BT50 STUB 1X3.546	1.000	2.055	6.268	1.500	.250	M24
BT50 STUB 1-1/4X3.546	1.250	2.055	6.386	1.772	.312	M24

BT - DRILL CHUCK ARBOR

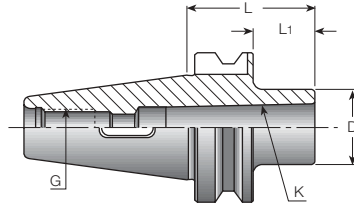
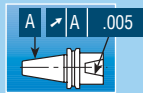
Taper Size
BT-30, 40 and 50



Designation	K	L	L ₁	D	G
BT30 DC J2X1.187	J2	1.187	.215	1.181	M12
BT30 DC J3X1.187	J3	1.187	-	-	M12
BT30 DC J6X1.187	J6	1.187	-	-	M12
BT40 DC J2X1.750	J2	1.750	.589	1.181	M16
BT40 DC J3X1.750	J3	1.750	.477	1.339	M16
BT40 DC J33X1.750	J33	1.750	.598	1.181	M16
BT40 DC J4X1.750	J4	1.750	.539	1.732	M16
BT40 DC J6X1.750	J6	1.750	.589	1.181	M16
BT50 DC J2X1.750	J2	1.750	-	-	M24
BT50 DC J3X1.750	J3	1.750	.157	1.339	M24
BT50 DC J33X1.750	J33	1.750	-	-	M24
BT50 DC J4X1.750	J4	1.750	.157	1.339	M24
BT50 DC J5X1.750	J5	1.750	-	-	M24
BT50 DC J6X1.750	J6	1.750	1.54	1.339	M24

BT - MORSE TAPER ADAPTER - METRIC

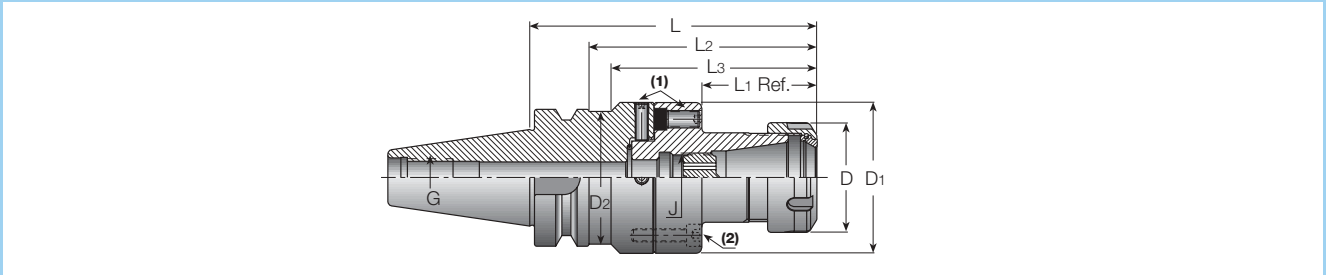
Taper Size
BT-30, 40 and 50



Designation	K	L	L1	D	G
BT30 MT1X 45	MT1	45	23	25	M12
BT30 MT2X 60	MT2	60	38	32	M12
BT40 MT1X 45	MT1	45	18	25	M16
BT40 MT1X120	MT1	120	93	25	M16
BT40 MT2X 60	MT2	60	33	32	M16
BT40 MT2X120	MT2	120	93	32	M16
BT40 MT3X 75	MT3	75	48	40	M16
BT40 MT3X139	MT3	139	112	40	M16
BT40 MT4X 95	MT4	95	68	50	M16
BT50 MT1X 45	MT1	45	7	25	M24
BT50 MT1X120	MT1	120	82	25	M24
BT50 MT1X180	MT1	180	142	25	M24
BT50 MT2X 45	MT2	45	7	32	M24
BT50 MT2X135	MT2	135	97	32	M24
BT50 MT2X180	MT2	180	142	32	M24
BT50 MT3X 45	MT3	45	7	40	M24
BT50 MT3X150	MT3	150	112	40	M24
BT50 MT3X180	MT3	180	142	40	M24
BT50 MT4X 75	MT4	75	37	50	M24
BT50 MT4X180	MT4	180	142	50	M24
BT50 MT5X105	MT5	105	67	70	M24

BT - CENTER ALIGNMENT COLLET CHUCK - METRIC

Taper Size
BT-40 and 50



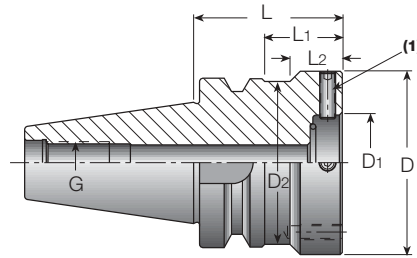
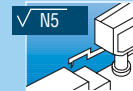
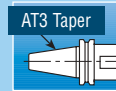
Designation	Range	L	L ₁	L ₂	L ₃	D	D ₁	D ₂	J	G	Hex Key ⁽¹⁾	Hex Key ⁽²⁾
ADJ BT40 D70 ER32	2-20	129.5	52.5	102.5	92.5	50	70	62.5	M22x1.5	M16	4.0	5.0
ADJ BT50 D70 ER32	2-20	144.5	52.5	106.5	-	50	70	-	M22x1.5	M24	4.0	5.0

The tools should be adjusted prior to initial use



BT - CENTER ALIGNMENT SHANK AND BASE - METRIC FOR SPECIALLY TAILORED TOOL HOLDERS

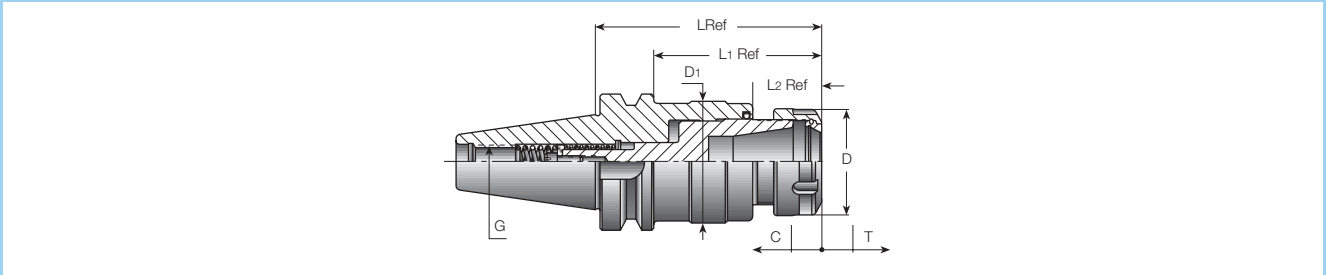
Taper Size
BT-40 and 50



Designation	L	L ₁	L ₂	D	D ₁	D ₂	G	Hex key ⁽¹⁾
ADJ BT40 D70	55	28	18	70	35	62.5	M16	4
ADJ BT50 D70	70	32	-	70	35	-	M24	4

BT - GTI TAPPING ATTACHMENT - METRIC

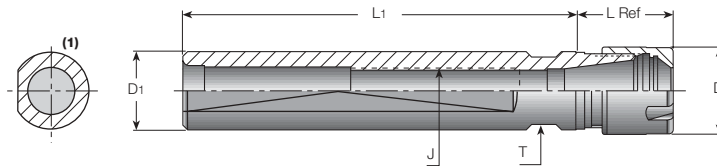
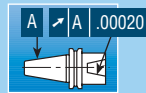
Taper Size
CAT-40 and 50



Designation	Tap capacity	Range	G	L	L ₁	L ₂	D	D ₁	T	C
GTI BT40 ER16	M3-M10	0.5-10	M16	84.2	52.7	24.6	28	29.5	8	3
GTI BT40 ER32	M6-M20	2-20	M16	106.8	79.8	33	50	56.5	9	4
GTI BT40 ER40	M6-M28	3-26	M16	124.8	97.8	51	63	56.5	9	4
GTI BT50 ER16	M3-M10	0.5-10	M24	106.8	68.8	24.6	28	29.5	8	3
GTI BT50 ER32	M6-M20	2-20	M24	115.2	77.2	33	50	56.5	9	4
GTI BT50 ER40	M6-M28	3-26	M24	133.2	95.2	51	63	56.5	9	4



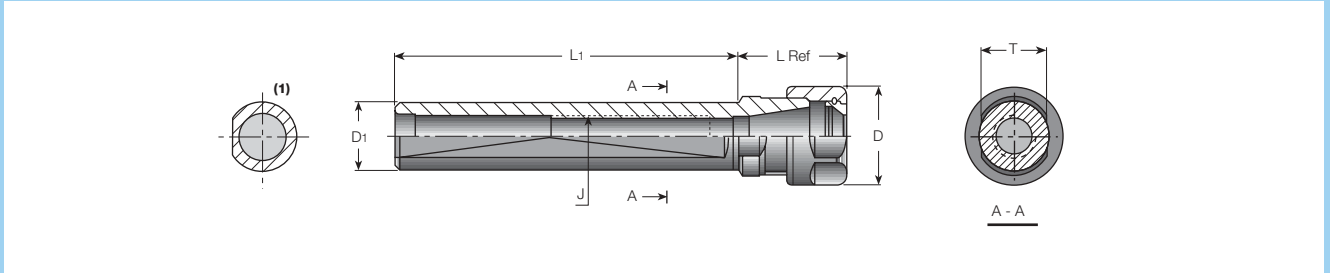
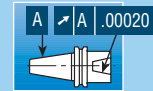
ST - MINI ER COLLET CHUCK



Designation	Range	L ₁	L	J	D ₁	D	T**
ST1/2X4.000 ER11 M	.022-.278	4.000	.734	-	.500	.630	.433
ST5/8X2.500 ER11MF*	.022-.278	2.500	.734	M8	.625	.630	.512
ST5/8X4.000 ER11 M	.022-.278	4.000	.734	M8	.625	.630	.512
ST5/8X6.000 ER11 M	.022-.278	6.000	.734	M8	.625	.630	.512
ST1/2X4.000 ER16 M	.022-.396	4.000	1.480	-	.500	.866	.433
ST3/4X2.500 ER16MF*	.022-.396	2.500	1.000	M12	.750	.866	.630
ST3/4X4.000 ER16MF*	.022-.396	4.000	1.000	M12	.750	.866	.630
ST3/4X6.000 ER16 M	.022-.396	6.000	1.000	M12	.750	.866	.630
ST5/8X1.250 ER16 M	.022-.396	1.250	1.378	M10	.625	.866	.669
ST3/4X2.500 ER20MF*	.041-.514	2.500	1.562	M12	.750	1.102	.827
ST3/4X4.000 ER20 M	.041-.514	4.000	1.562	M12	.750	1.102	.827
ST3/4X6.000 ER20 M	.041-.514	6.000	1.562	M12	.750	1.102	.827

* With a flat
 ** Wrench size

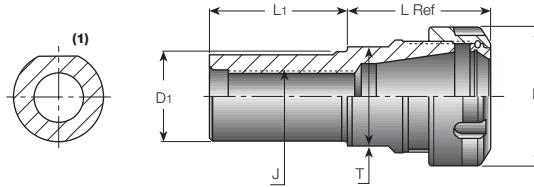
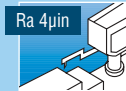
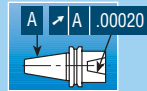
ST - ER COLLET CHUCK



Designation	Range	L ₁	L	J	D ₁	D	T**
ST5/8X2.50 ER11F*	.022-.278	2.500	.734	M8	.625	.748	.512
ST3/4X2.50 ER11F*	.022-.278	2.500	.734	M10	.750	.748	.669
ST3/4X4.00 ER11	.022-.278	4.000	.734	M10	.750	.748	.669
ST3/4X6.00 ER11	.022-.278	6.000	.734	M10	.750	.748	.669
ST3/4X2.50 ER16F*	.022-.396	2.500	1.187	M12	.750	1.102	.748
ST3/4X4.00 ER16	.022-.396	4.000	1.187	M12	.750	1.102	.748
ST3/4X6.00 ER16	.022-.396	6.000	1.187	M12	.750	1.102	.748
ST3/4X2.50 ER20F*	.041-.514	2.500	1.656	M12	.750	1.339	.866
ST3/4X4.00 ER20	.041-.514	4.000	1.656	M12	.750	1.339	.866
ST3/4X6.00 ER20	.041-.514	6.000	1.656	M12	.750	1.339	.866

* With a flat
 ** Wrench size

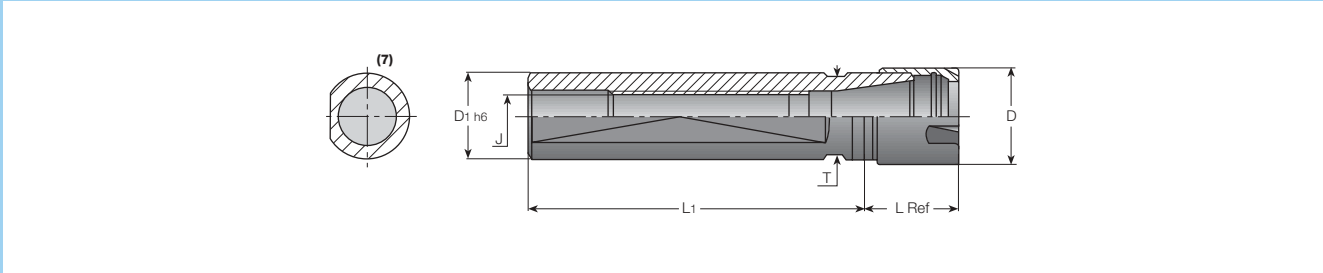
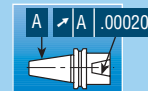
ST - ER COLLET CHUCK



Designation	Range	L ₁	L	J	D ₁	D	T**
ST3/4X2.00 ER25F*	.041-.632	2.000	1.732	M12	.750	1.654	1.102
ST3/4X4.00 ER25	.041-.632	4.000	1.772	M12	.750	1.654	1.102
ST3/4X2.00 ER32F*	.080-.789	2.000	2.126	M12	.750	1.968	1.417
ST1X2.00 ER32F*	.080-.789	2.000	2.087	M16	1.000	1.968	1.417
ST1-1/4X2.375 ER32F*	.080-.789	2.375	2.087	M18	1.250	1.968	1.417
ST1-1/4X6.00 ER32	.080-.789	6.000	2.047	M18	1.250	1.968	1.417
ST1X2.37 ER40F*	.120-1.025	2.370	2.362	M16	1.000	2.480	1.772
ST1-1/4X2.37 ER40	.120-1.025	2.370	2.362	M18	1.250	2.480	1.772

* With a flat
 ** Wrench size

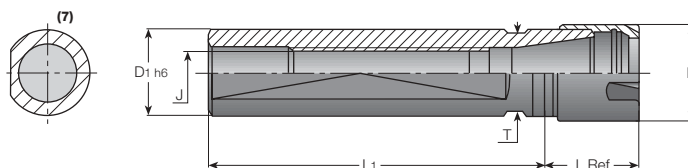
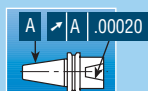
ST - MINI COLLET CHUCK WITH A FLAT



Designation	Range	L ₁	L	J	D ₁	D	T*	Machine Type
ST3/4 X1.496 ER16 MF	.022-.396	1.496	1.024	M12X1	.750	.866	.669	**
ST3/4 X1.969 ER16 MF	.022-.396	1.969	1.024	M12X1	.750	.866	.669	**
ST3/4 X2.756 ER16 MF	.022-.396	2.756	1.024	M12X1	.750	.866	.669	**
ST3/4 X4.724 ER16 MF	.022-.396	4.724	1.024	M12X1	.750	.866	.669	**
ST3/4 X5.512 ER16 MF	.022-.396	5.512	1.024	M12X1	.750	.866	.669	**
ST1 X2.559 ER16 MF	.022-.396	2.559	1.102	M12X1	1.000	.866	.866	***
ST1 X2.953 ER16 MF	.022-.396	2.953	1.102	M12X1	1.000	.866	.866	**
ST1 X3.937 ER16 MF	.022-.396	3.937	1.102	M12X1	1.000	.866	.866	**
ST1 X3.937 ER20 MF	.041-.514	3.937	1.102	M14X1	1.000	1.102	.866	**
ST1 X5.512 ER20 MF	.041-.514	5.512	1.102	M14X1	1.000	1.102	.866	**

* Wrench size
 ** Citizen
 *** Manurhin

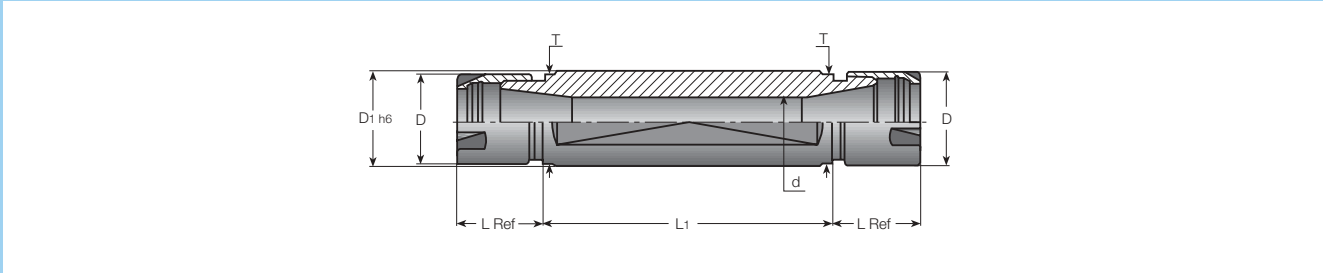
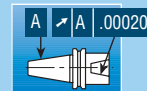
ST - MINI COLLET CHUCK WITH A FLAT - METRIC



Designation	Range	L ₁	L	J	D	D ₁	T ⁽⁶⁾	Machine Type
ST 16X 35 ER16 MF	0.5-7	35.00	36.00	M8X1	22.0	16.00	17	(4)
ST 16X 38 ER11 MF	0.5-7	38.00	18.50	M8X1	16.0	16.00	14	
ST 16X140 ER11 MF	0.5-7	140.00	18.50	M8X1	16.0	16.00	14	
ST 20X 50 ER16 MF	0.5-10	50.00	26.00	M12X1	22.0	20.00	17	(1)
ST 20X 70 ER16 MF	0.5-10	70.00	26.00	M12X1	22.0	20.00	17	(1)
ST 20X120 ER16 MF	0.5-10	120.00	26.00	M12X1	22.0	20.00	17	(1)
ST 20X140 ER16 MF	0.5-10	140.00	26.00	M12X1	22.0	20.00	17	(1)
ST 22X 38 ER16 MF	0.5-10	38.00	26.00	M12X1	22.0	22.00	19	(4)
ST 22X 70 ER16 MF	0.5-10	70.00	26.00	M12X1	22.0	22.00	19	(4)
ST 22X 70 ER25 MF	0.5-10	70.00	47.00	M12X1	35.0	22.00	27	(4)
ST 22X 80 ER20 MF	1-13	80.00	39.00	M12X1	28.0	22.00	21	(4)
ST 22X100 ER16 MF	1-16	100.00	28.00	M12X1	22.0	22.00	19	(4)
ST 25X 65 ER16 MF	0.5-10	65.00	28.00	M12X1	22.0	25.00	22	
ST 25X 75 ER25 MF	1-13	75.00	48.00	M14X1	35.0	25.00	27	(5)
ST 25X100 ER20 MF	1-13	100.00	28.00	M14X1	28.0	25.00	22	(5)
ST 25X145 ER25 MF	1-16	145.00	36.00	M14X1	35.0	25.00	27	(2)
ST 25X154 ER20 MF	1-16	154.00	28.00	M14X1	28.0	25.00	22	(5)
ST 32X 70 ER25 MF	1-16	70.00	30.00	M18X1	35.0	32.00	27	(3)

- (1) Citizen
- (2) Manurhin
- (3) Schutte
- (4) Star
- (5) Tornos-Bechler
- (6) Wrench size
- (7) With a flat

ST - DOUBLE ENDED MINI COLLET CHUCK WITH A FLAT

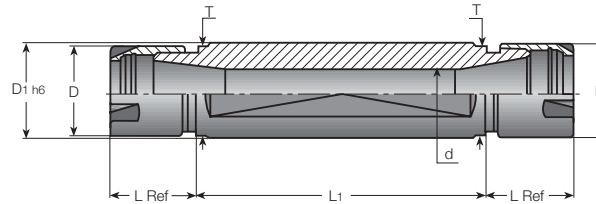
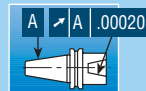


Designation	Range	L1	L	D1	D	d	T*	Machine Type
ST3/4X2.756 ER11 MF D	.022-.278	2.756	.787	.750	.630	.295	.669	**
ST3/4X2.165 ER16 MF D	.022-.396	2.165	1.024	.750	.866	.413	.669	**
ST1 X2.441 ER16 MF D	.022-.396	2.441	1.102	1.000	.866	.413	.866	***

* Wrench size
 ** Citizen
 *** Manurhin



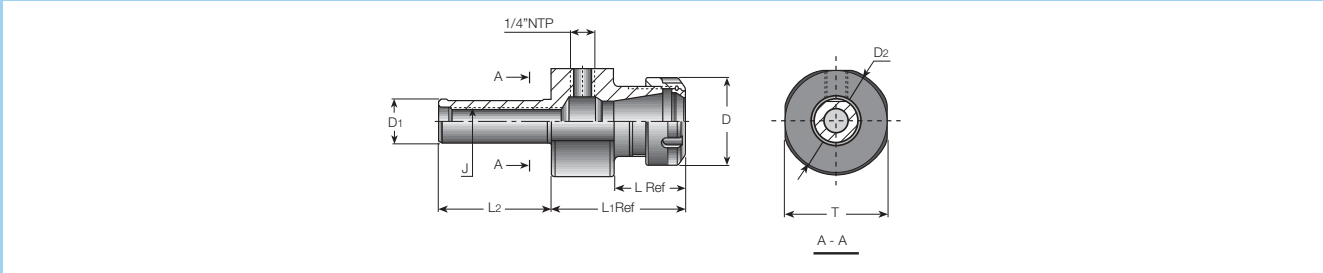
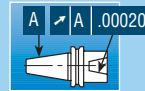
ST - DOUBLE ENDED MINI COLLET CHUCK WITH A FLAT – METRIC



Designation	Range	D	D ₁ h6	d	L ₁	L	T*	Machine Type
ST 16X 50 ER11 MF D	0.5-7	16	16	7.5	50	18.5	14	
ST 20X 30 ER11 MF D	0.5-7	16	20	7.5	30	18.5	17	**
ST 20X 50 ER11 MF D	0.5-7	16	20	7.5	50	18.5	17	**
ST 20X 55 ER16 MF D	0.5-10	22	20	10.5	55	25.0	17	**
ST 22X 55 ER16 MF D	0.5-10	22	22	10.5	55	28.0	19	***
ST 22X 75 ER16 MF D	0.5-10	22	22	10.5	75	28.0	19	***
ST 25X 62 ER16 MF D	0.5-10	22	25	10.5	62	28.0	22	
ST 32X 55 ER20 MF D	1-13	28	32	13.5	55	28.0	27	***
ST 32X 75 ER20 MF D	1-13	28	32	13.5	75	28.0	27	***

* Wrench size
 ** Citizen
 *** Star

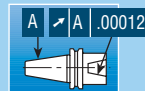
ST - ER COLLET CHUCK WITH INTERNAL COOLANT (TWO OPTIONS)



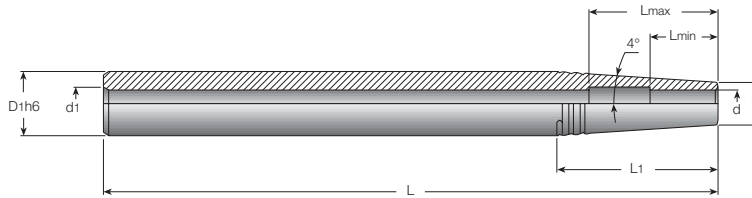
Designation	Range	L ₂	L ₁	L	J	D ₁	D	D ₂	T
ST3/4X3.000 ER16S	.022-.396	3.000	2.150	1.165	M12	.750	1.102	1.575	1.339
ST3/4X3.000 ER20S	.041-.514	3.000	2.500	1.240	M12	.750	1.339	1.535	1.339
ST3/4X3.000 ER25S	.041-.632	3.000	2.680	1.220	M12	.750	1.654	2.126	1.890
ST1X3.000 ER32S	.080-.789	3.000	3.000	1.614	M16	1.000	1.968	2.480	2.323
ST1-1/4X3.000 ER40S	.120-1.025	3.000	3.030	1.642	M18X1.5	1.250	2.480	2.992	2.835



ST - STRAIGHT SHANK

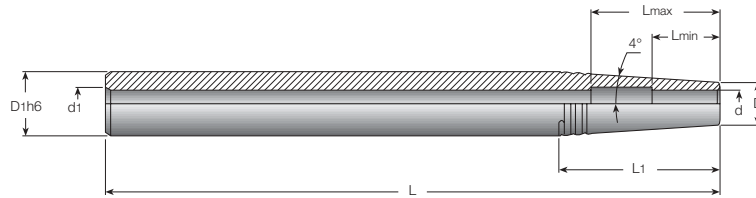
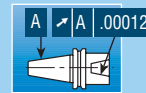


G2.5
20,000 RPM



Designation	d	D	D ₁	d ₁	L	L ₁	L _{min}	L _{max}
ST 1/2X6.30 SRK 1/8	.125	.394	.500	.157	6.300	.760	.394	-
ST 1/2X6.30 SRK 3/16	.188	.394	.500	.157	6.300	.760	.591	1.181
ST 5/8X6.30 SRK 1/8	.125	.394	.625	.236	6.300	1.374	.394	-
ST 5/8X6.30 SRK 3/16	.188	.394	.625	.236	6.300	1.654	.591	-
ST 5/8X6.30 SRK 1/4	.250	.433	.625	.236	6.300	1.374	.709	1.378
ST 3/4X8.00 SRK 3/16	.188	.394	.750	.236	8.000	2.548	.591	-
ST 3/4X8.00 SRK 1/4	.250	.433	.750	.236	8.000	2.267	.709	1.378
ST 3/4X8.00 SRK 5/16	.313	.551	.750	.236	8.000	1.422	.984	1.575
ST 1X8.000 SRK 1/4	.250	.433	1.000	.315	8.000	4.053	.709	1.378
ST 1X8.000 SRK 5/16	.313	.551	1.000	.315	8.000	3.209	.984	1.575
ST 1X8.000 SRK 3/8	.375	.630	1.000	.315	8.000	2.646	1.181	1.772
ST 1X8.000 SRK 1/2	.500	.787	1.000	.315	8.000	1.520	1.260	1.969

ST - STRAIGHT SHANK - METRIC



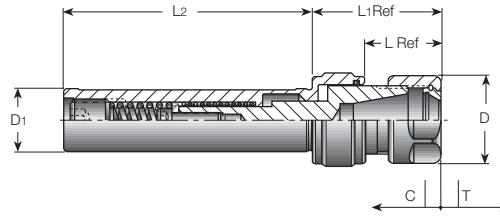
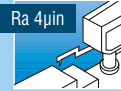
Designation	d	D	D ₁	d ₁	L	L ₁ Ref.	L _{min}	L _{max}
ST 12x160 SRK 3	3	10	12	4	160	14	10	-
ST 12x160 SRK 4	4	10	12	4	160	14	12	27
ST 16x160 SRK 3	3	10	16	6	160	43	10	-
ST 16x160 SRK 4	4	10	16	6	160	43	12	-
ST 16x160 SRK 5	5	10	16	6	160	43	15	-
ST 16x160 SRK 6	6	11	16	6	160	35	18	35
ST 20x200 SRK 5	5	10	20	6	200	71	15	-
ST 20x200 SRK 6	6	11	20	6	200	64	18	40
ST 20x200 SRK 8	8	14	20	6	200	43	25	40
ST 25x200 SRK 6	6	11	25	8	200	100	18	35
ST 25x200 SRK 8	8	14	25	8	200	79	25	40
ST 25x200 SRK 10	10	16	25	8	200	64	30	50
ST 25x200 SRK 12	12	20	25	8	200	36	32	52

GTI - TAPPING ATTACHMENT

58-60 HRc

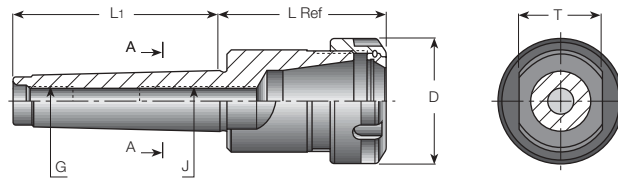
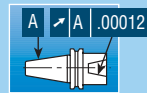


Ra 4µm



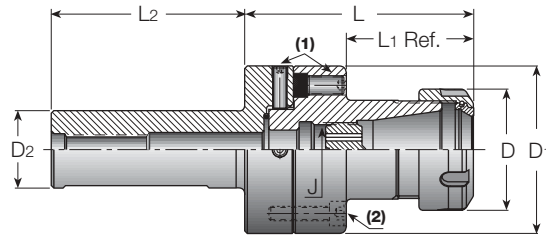
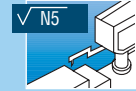
Designation	Tap Capacity	Range	D_1	L_2	L_1	L	D	T	C
GTI ER11 ST5/8	#3-1/4"	.022- .278	.625	6.00	-	.75	.63	.24	.12
GTI ER16 ST3/4	#6-3/8"	.022- .396	.750	3.15	1.61	.95	1.10	.32	.12
GTI ER20 ST3/4	#8-1/2"	.041- .514	.750	3.15	1.89	1.06	1.34	.32	.12
GTI ER25 ST1	#10-5/8"	.041- .632	1.000	3.15	2.01	1.18	1.66	.36	.16
GTI ER32 ST1	1/4-3/4"	.080- .789	1.000	3.15	2.91	1.18	1.97	.36	.16
GTI ER40 ST1-1/4	5/16-1-3/8"	.120-1.025	1.250	3.15	3.54	1.81	2.36	.36	.16

■ MT - ER COLLET CHUCK



Designation	Range	L	L ₁	D	J	G	T
MT2 ER20x1.909	.022-.514	1.909	2.520	1.339	M10	3/8-16	.866
MT2 ER25x2.008	.041-.632	2.008	2.520	1.654	M10	3/8-16	1.102
MT3 ER32x2.717	.080-.789	2.717	3.189	1.968	M12	1/2-13	.945
MT3 ER40x3.150	.120-1.025	3.150	3.189	2.480	M12	1/2-13	.945
MT4 ER32x2.382	.080-.789	2.382	4.035	1.968	M16	5/8-11	1.260
MT4 ER40x3.193	.120-1.025	3.193	4.035	2.480	M16	5/8-11	1.260
MT4 ER50x4.232	.396-1.338	4.232	4.035	3.070	M16	5/8-11	1.260
MT5 ER40x3.445	.102-1.025	3.445	5.098	2.480	M28x1.5	3/4-10	1.772
MT5 ER50x3.346	.396-1.338	3.346	5.098	3.070	M28x1.5	3/4-10	1.772
MT6 ER50x3.465	.396-1.338	3.465	7.165	3.070	M36x1.5	1 - 8	2.362

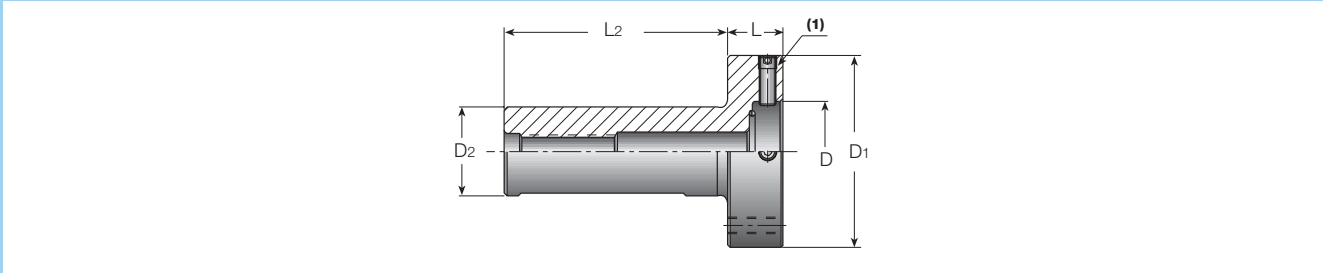
ADJ - CENTER ALIGNMENT COLLET CHUCK



Designation	Range	L	L ₁	L ₂	D	D ₁	D ₂	J	Hex Key ⁽¹⁾ (mm)	Hex Key ⁽¹⁾ (mm)
ADJ ST1 ER32	.080-.789	3.720	2.067	3.150	1.969	2.756	1.000	M22x1.5	4.0	5.0
ADJ ST1-1/4 ER32	.080-.789	3.720	2.067	3.150	1.969	2.756	1.250	M22x1.5	4.0	5.0

Note: The tools should be adjusted prior to initial use.

■ ADJ - CENTER ALIGNMENT SHANK & BASE FOR SPECIALLY TAILORED TOOL HOLDERS



Designation	L	L ₂	D	D ₁	D ₂	Hex key ⁽¹⁾ (mm)
ADJ ST1 D2.756	.787	3.15	2.756	1.378	1.000	4
ADJ ST1-1/4 D2.756	.787	3.15	2.756	1.378	1.250	4



ER COLLET CHUCKING SYSTEM

SHANKS

CAT A.N.S.I B5.50/DIN 69871



HSK DIN 69893 FORM A/E



BT MAS-403



ISO A.N.S.I B5.18-DIN 2080



R-8 BRIDGEPORT



ST STRAIGHT SHANK



MT MORSE TAPER



COLLETS

ER-SPR



ER-SEAL



ER-SEAL JET2



ER-SRK



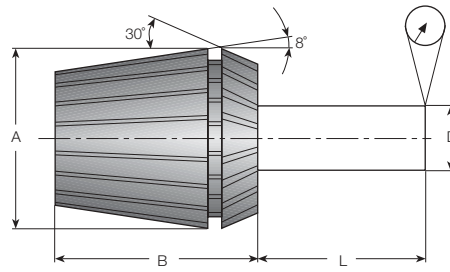
ER32 GTIN



ER32 ODP



ER COLLET STANDARD



DIN 6499 RUNOUT PRECISION

L Inch	L mm	D Inch	D mm	ICTC Precision Standard Inch	ICTC "AA" mm	Ultra Precision Inch	Ultra Precision mm	DIN 6499 ⁽¹⁾	
								Inch	mm
.24	6	.039-.063	1.0- 1.6	.0004	0.01	.0002	0.005		
.39	10	.063-.118	1.6- 3.0	.0004	0.01	.0002	0.005	.0006	0.015
.63	16	.118-.236	3.0- 6.0	.0004	0.01	.0002	0.005	.0006	0.015
.98	25	.236-.394	6.0-10.0	.0004	0.01	.0002	0.005	.0006	0.015
1.57	40	.394-.709	10.0-18.0	.0004	0.01	.0002	0.005	.0008	0.020
1.97	50	.709-1.024	18.0-26.0	.0004	0.01	.0002	0.005	.0008	0.020
2.36	60	1.024-1.339	26.0-34.0					.0010	0.025

⁽¹⁾ ER50 DIN6499

ER SIZES

Type	A Inch	A mm	B Inch	B mm
ER-11	.45	11.5	.71	18
ER-16	.67	17	1.06	27
ER-20	.83	21	1.22	31
ER-25	1.02	26	1.38	35
ER-32	1.30	33	1.57	40
ER-40	1.61	41	1.81	46
ER-50	2.05	52	2.36	60

ER - Sealed Collet - Two Types:

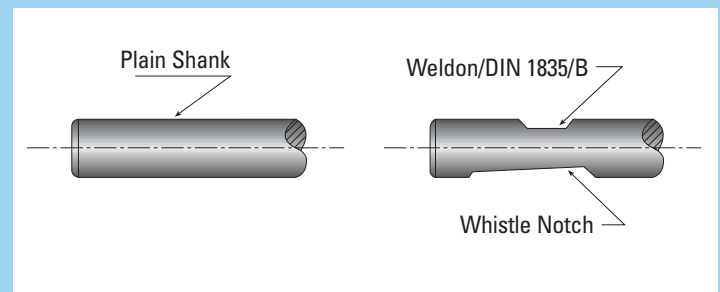


Sealed Collet Jet
For straight shank cutting tools with internal coolant supply.



Sealed Collet Jet2
With angular double nozzles. Coolant flow is direct to the cutting edge, for use with standard straight shank cutting tools (without coolant hole).

Standard shanks which can be used in sealed collets



Note: The front end of the sealed collet should be located beyond Weldon or the whistle notch.

ER - TOP CLAMPING NUT DIN 6499

Description:

Friction bearing ER nut has a unique two-piece exclusive friction mechanism combining radial and angular self-centering movements.

Features:

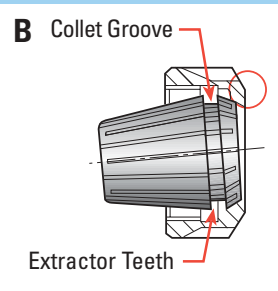
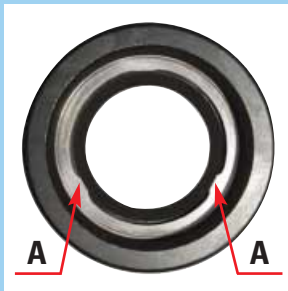
- Unique two-piece friction bearing.
- Radial and angular float for better concentricity.
- Powerful gripping force, 50-100% higher than the standard ER nut due to the friction bearing mechanism.
- Balanced for higher spindle spin due to unique extractor teeth design.
- Compact design - general dimensions and size range are the same as the standard nut.

- Designed for use with sealed collets.

Always assemble the collet into the nut before mounting onto the collet chuck.

Insertion Procedure:

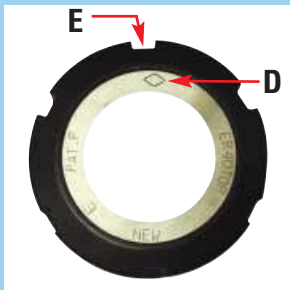
1. Insert the collet at an angle, fitting the two extractor teeth which protrude (A) into the collet's groove (B).
2. Place the two parts on a clean and horizontal work surface.
3. Press down with your thumb on the back end of the collet until it clicks into place (C).



Important: Never insert the collet parallel to the extractor ring. Doing this will chip or break the extractor's teeth. When unclamping the nut, the collet will self-release from the chuck by means of extractor teeth.

Extracting Procedure

1. Align the engraved diamond shape which is on the silver ring (D), with any of the key slots (E) of the nut.
2. Place the nut with the collet facing down on a clean and horizontal work surface.
3. Insert a screwdriver vertically between the nut slots and the collet on the reverse side of the engraved diamond shape (D).
4. Tilt the screwdriver outwards, while helping the extraction by pushing the collet's back end in the opposite direction (F).



Note: For maximum performance the clamping nut thread and collet taper must be cleaned and oiled before use.

Nut type	LbsxFt	KgxM
E-11	36	5
ER-11M	21	3
ER-16	50	7
ER-16M	29	4
ER-20	86	12
ER-20M	58	8
ER-25	144	20
ER-32	160	22
ER-40	180	25
ER-50	252	35

Recommended Clamping Torque for Standard ER & ER-Top Clamping Nut

Important:

This torque is calculated with the maximum diameter capacity per collet, which should be gradually reduced when used with a smaller shank size.

ER - SPRING COLLETS DIN 6499



ER-11, 16, 20, 25.32-SPR

Designation	Diameter Range	Diameter Range (mm)
ER11 SPR .022-.041	1/32 (.022-.041)	0.5- 1
ER11 SPR .041-.080	1/16 (.041-.080)	1.0- 2
ER11 SPR .080-.120	3/32 (.080-.120)	2.0- 3
ER11 SPR .120-.159	1/8 (.120-.159)	3.0- 4
ER11 SPR .159-.199	3/16 (.159-.199)	4.0- 5
ER11 SPR .199-.238	7/32 (.199-.238)	5.0- 6
ER11 SPR .238-.278	1/4 (.238-.278)	6.0- 7
ER16 SPR .022-.041	1/32 (.022-.041)	0.5- 1
ER16 SPR .041-.080	1/16 (.041-.080)	1.0- 2
ER16 SPR .080-.120	3/32 (.080-.120)	2.0- 3
ER16 SPR .120-.159	1/8 (.120-.159)	3.0- 4
ER16 SPR .159-.199	3/16 (.159-.199)	4.0- 5
ER16 SPR .199-.238	7/32 (.199-.238)	5.0- 6
ER16 SPR .238-.278	1/4 (.238-.278)	6.0- 7
ER16 SPR .278-.317	5/16 (.278-.317)	7.0- 8
ER16 SPR .317-.356	11/32 (.317-.356)	8.0- 9
ER16 SPR .356-.396	3/8 (.356-.396)	9.0-10
ER20 SPR .041-.080	1/16 (.041-.080)	1.0- 2
ER20 SPR .080-.120	3/32 (.080-.120)	2.0- 3
ER20 SPR .120-.159	1/8 (.120-.159)	3.0- 4
ER20 SPR .159-.199	3/16 (.159-.199)	4.0- 5
ER20 SPR .199-.238	7/32 (.199-.238)	5.0- 6
ER20 SPR .238-.278	1/4 (.238-.278)	6.0- 7
ER20 SPR .278-.317	5/16 (.278-.317)	7.0- 8
ER20 SPR .317-.356	11/32 (.317-.356)	8.0- 9
ER20 SPR .356-.396	3/8 (.356-.396)	9.0-10
ER20 SPR .396-.435	13/32 (.396-.435)	10.0-11
ER20 SPR .435-.474	7/16 (.435-.474)	11.0-12
ER20 SPR .474-.514	1/2 (.474-.514)	12.0-13
ER25 SPR .041-.080	1/16 (.041-.080)	1.0- 2
ER25 SPR .080-.120	3/32 (.080-.120)	2.0- 3
ER25 SPR .120-.159	1/8 (.120-.159)	3.0- 4
ER25 SPR .159-.199	3/16 (.159-.199)	4.0- 5
ER25 SPR .199-.238	7/32 (.199-.238)	5.0- 6
ER25 SPR .238-.278	1/4 (.238-.278)	6.0- 7
ER25 SPR .278-.317	5/16 (.278-.317)	7.0- 8
ER25 SPR .317-.356	11/32 (.317-.356)	8.0- 9
ER25 SPR .356-.396	3/8 (.356-.396)	9.0-10
ER25 SPR .396-.435	13/32 (.396-.435)	10.0-11
ER25 SPR .435-.474	7/16 (.435-.474)	11.0-12
ER25 SPR .474-.514	1/2 (.474-.514)	12.0-13
ER25 SPR .514-.553	17/32 (.514-.553)	13.0-14
ER25 SPR .553-.593	9/16 (.553-.593)	14.0-15
ER25 SPR .593-.632	5/8 (.593-.632)	15.0-16
ER32 SPR .080-.120	3/32 (.080-.120)	2- 3
ER32 SPR .120-.159	1/8 (.120-.159)	3- 4
ER32 SPR .159-.199	3/16 (.159-.199)	4- 5
ER32 SPR .199-.238	7/32 (.199-.238)	5- 6
ER32 SPR .238-.278	1/4 (.238-.278)	6- 7
ER32 SPR .278-.317	5/16 (.278-.317)	7- 8
ER32 SPR .317-.356	11/32 (.317-.356)	8- 9
ER32 SPR .356-.396	3/8 (.356-.396)	9-10
ER32 SPR .396-.435	13/32 (.396-.435)	10-11
ER32 SPR .435-.474	7/16 (.435-.474)	11-12
ER32 SPR .474-.514	1/2 (.474-.514)	12-13
ER32 SPR .514-.553	17/32 (.514-.553)	13-14
ER32 SPR .553-.593	9/16 (.553-.593)	14-15
ER32 SPR .593-.632	5/8 (.593-.632)	15-16
ER32 SPR .632-.671	21/32 (.632-.671)	16-17
ER32 SPR .671-.711	11/16 (.671-.711)	17-18
ER32 SPR .711-.750	3/4 (.711-.750)	18-19
ER32 SPR .750-.789	25/32 (.750-.789)	19-20

ER40, 50-SPR

Designation	Diameter Range	Diameter Range (mm)
ER40 SPR .120-.159	1/8 (.120-.159)	3- 4
ER40 SPR .159-.199	3/16 (.159-.199)	4- 5
ER40 SPR .199-.238	7/32 (.199-.238)	5- 6
ER40 SPR .238-.278	1/4 (.238-.278)	6- 7
ER40 SPR .278-.317	5/16 (.278-.317)	7- 8
ER40 SPR .317-.356	11/32 (.317-.356)	8- 9
ER40 SPR .356-.396	3/8 (.356-.396)	9-10
ER40 SPR .396-.435	13/32 (.396-.435)	10-11
ER40 SPR .435-.474	7/16 (.435-.474)	11-12
ER40 SPR .474-.514	1/2 (.474-.514)	12-13
ER40 SPR .514-.553	17/32 (.514-.553)	13-14
ER40 SPR .553-.593	9/16 (.553-.593)	14-15
ER40 SPR .593-.632	5/8 (.593-.632)	15-16
ER40 SPR .632-.671	21/32 (.632-.671)	16-17
ER40 SPR .671-.711	11/16 (.671-.711)	17-18
ER40 SPR .711-.750	3/4 (.711-.750)	18-19
ER40 SPR .750-.789	25/32 (.750-.789)	19-20
ER40 SPR .789-.829	13/16 (.789-.829)	20-21
ER40 SPR .829-.868	27/32 (.829-.868)	21-22
ER40 SPR .868-.907	7/8 (.868-.907)	22-23
ER40 SPR .907-.947	15/16 (.907-.947)	23-24
ER40 SPR .947-.986	31/32 (.947-.986)	24-25
ER40 SPR .986-1.025	1 (.986-1.025)	25-26
ER50 SPR .396-.474	13/32, 7/16 (.396-.474)	10-12
ER50 SPR .474-.553	1/2, 17/32 (.474-.553)	12-14
ER50 SPR .553-.632	9/16, 5/8 (.553-.632)	14-16
ER50 SPR .632-.711	21/32, 11/16 (.632-.711)	16-18
ER50 SPR .711-.789	3/4, 25/32 (.711-.789)	18-20
ER50 SPR .789-.868	13/16, 27/32 (.789-.868)	20-22
ER50 SPR .868-.947	7/8, 15/16 (.868-.947)	22-24
ER50 SPR .947-1.025	31/32, 1 (.947-1.025)	24-26
ER50 SPR 1.025-1.102	1-1/16 (1.025-1.102)	26-28
ER50 SPR 1.102-1.181	1-1/8 (1.102-1.181)	28-30
ER50 SPR 1.181-1.260	1-1/4 (1.181-1.260)	30-32
ER50 SPR 1.260-1.338	1-5/16 (1.260-1.338)	32-34

ER-EX* (single diameter spring collets)

Designation	Diameter	Diameter (mm)
ER32 EX .125	.125 (1/8)	3.175
ER32 EX .250	.250 (1/4)	6.350
ER32 EX .312	.312 (5/16)	7.924
ER32 EX .375	.375 (3/8)	9.525
ER32 EX .500	.500 (1/2)	12.700
ER32 EX .625	.625 (5/8)	15.875
ER32 EX .750	.750 (3/4)	19.050
ER40 EX .250	.250 (1/4)	6.350
ER40 EX .312	.312 (5/16)	7.924
ER40 EX .375	.375 (3/8)	9.525
ER40 EX .500	.500 (1/2)	12.700
ER40 EX .625	.625 (5/8)	15.875
ER40 EX .750	.750 (3/4)	19.050
ER40 EX .875	.875 (7/8)	22.225
ER40 EX 1.000	1.000	25.400

* Recommended for improved runout and clamping torque.

ER - SPRING COLLET DIN 6499 'AA'



Ultra Precision 'AA'



46-48 HRC



Ra 4µm



ER11, 16, 20, 25-SPR-AA

Designation	Diameter Range	Diameter Range (mm)
ER11 SPR .022-.041 AA	1/32 (.022-.041)	0.5- 1
ER11 SPR .041-.080 AA	1/16 (.041-.080)	1.0- 2
ER11 SPR .080-.120 AA	3/32 (.080-.120)	2.0- 3
ER11 SPR .120-.159 AA	1/8 (.120-.159)	3.0- 4
ER11 SPR .159-.199 AA	3/16 (.159-.199)	4.0- 5
ER11 SPR .199-.238 AA	7/32 (.199-.238)	5.0- 6
ER11 SPR .238-.278 AA	1/4 (.238-.278)	6.0- 7
ER16 SPR .022-.041 AA	1/32 (.022-.041)	0.5- 1
ER16 SPR .041-.080 AA	1/16 (.041-.080)	1.0- 2
ER16 SPR .080-.120 AA	3/32 (.080-.120)	2.0- 3
ER16 SPR .120-.159 AA	1/8 (.120-.159)	3.0- 4
ER16 SPR .159-.199 AA	3/16 (.159-.199)	4.0- 5
ER16 SPR .199-.238 AA	7/32 (.199-.238)	5.0- 6
ER16 SPR .238-.278 AA	1/4 (.238-.278)	6.0- 7
ER16 SPR .278-.317 AA	5/16 (.278-.317)	7.0- 8
ER16 SPR .317-.356 AA	11/32 (.317-.356)	8.0- 9
ER16 SPR .356-.396 AA	3/8 (.356-.396)	9.0-10
ER20 SPR .041-.080 AA	1/16 (.041-.080)	1.0- 2
ER20 SPR .080-.120 AA	3/32 (.080-.120)	2.0- 3
ER20 SPR .120-.159 AA	1/8 (.120-.159)	3.0- 4
ER20 SPR .159-.199 AA	3/16 (.159-.199)	4.0- 5
ER20 SPR .199-.238 AA	7/32 (.199-.238)	5.0- 6
ER20 SPR .238-.278 AA	1/4 (.238-.278)	6.0- 7
ER20 SPR .278-.317 AA	5/16 (.278-.317)	7.0- 8
ER20 SPR .317-.356 AA	11/32 (.317-.356)	8.0- 9
ER20 SPR .356-.396 AA	3/8 (.356-.396)	9.0-10
ER20 SPR .396-.435 AA	13/32 (.396-.435)	10.0-11
ER20 SPR .435-.474 AA	7/16 (.435-.474)	11.0-12
ER20 SPR .474-.514 AA	1/2 (.474-.514)	12.0-13
ER25 SPR .041-.080 AA	1/16 (.041-.080)	1 - 2
ER25 SPR .080-.120 AA	3/32 (.080-.120)	2 - 3
ER25 SPR .120-.159 AA	1/8 (.120-.159)	3 - 4
ER25 SPR .159-.199 AA	3/16 (.159-.199)	4 - 5
ER25 SPR .199-.238 AA	7/32 (.199-.238)	5 - 6
ER25 SPR .238-.278 AA	1/4 (.238-.278)	6 - 7
ER25 SPR .278-.317 AA	5/16 (.278-.317)	7 - 8
ER25 SPR .317-.356 AA	11/32 (.317-.356)	8 - 9
ER25 SPR .356-.396 AA	3/8 (.356-.396)	9 -10
ER25 SPR .396-.435 AA	13/32 (.396-.435)	10 -11
ER25 SPR .435-.474 AA	7/16 (.435-.474)	11 -12
ER25 SPR .474-.514 AA	1/2 (.474-.514)	12 -13
ER25 SPR .514-.553 AA	17/32 (.514-.553)	13 -14
ER25 SPR .553-.593 AA	9/16 (.553-.593)	14 -15
ER25 SPR .593-.632 AA	5/8 (.593-.632)	15 -16

ER32, 40-SPR-AA

Designation	Diameter Range	Diameter Range (mm)
ER32 SPR .080-.120 AA	3/32 (.080-.120)	2- 3
ER32 SPR .120-.159 AA	1/8 (.120-.159)	3- 4
ER32 SPR .159-.199 AA	3/16 (.159-.199)	4- 5
ER32 SPR .199-.238 AA	7/32 (.199-.238)	5- 6
ER32 SPR .238-.278 AA	1/4 (.238-.278)	6- 7
ER32 SPR .278-.317 AA	5/16 (.278-.317)	7- 8
ER32 SPR .317-.356 AA	11/32 (.317-.356)	8- 9
ER32 SPR .356-.396 AA	3/8 (.356-.396)	9-10
ER32 SPR .396-.435 AA	13/32 (.396-.435)	10-11
ER32 SPR .435-.474 AA	7/16 (.435-.474)	11-12
ER32 SPR .474-.514 AA	1/2 (.474-.514)	12-13
ER32 SPR .514-.553 AA	17/32 (.514-.553)	13-14
ER32 SPR .553-.593 AA	9/16 (.553-.593)	14-15
ER32 SPR .593-.632 AA	5/8 (.593-.632)	15-16
ER32 SPR .632-.671 AA	21/32 (.632-.671)	16-17
ER32 SPR .671-.711 AA	11/16 (.671-.711)	17-18
ER32 SPR .711-.750 AA	3/4 (.711-.750)	18-19
ER32 SPR .750-.789 AA	25/32 (.750-.789)	19-20
ER40 SPR .120-.159 AA	1/8 (.120-.159)	3- 4
ER40 SPR .159-.199 AA	3/16 (.159-.199)	4- 5
ER40 SPR .199-.238 AA	7/32 (.199-.238)	5- 6
ER40 SPR .238-.278 AA	1/4 (.238-.278)	6- 7
ER40 SPR .278-.317 AA	5/16 (.278-.317)	7- 8
ER40 SPR .317-.356 AA	11/32 (.317-.356)	8- 9
ER40 SPR .356-.396 AA	3/8 (.356-.396)	9-10
ER40 SPR .396-.435 AA	13/32 (.396-.435)	10-11
ER40 SPR .435-.474 AA	7/16 (.435-.474)	11-12
ER40 SPR .474-.514 AA	1/2 (.474-.514)	12-13
ER40 SPR .514-.553 AA	17/32 (.514-.553)	13-14
ER40 SPR .553-.593 AA	9/16 (.553-.593)	14-15
ER40 SPR .593-.632 AA	5/8 (.593-.632)	15-16
ER40 SPR .632-.671 AA	21/32 (.632-.671)	16-17
ER40 SPR .671-.711 AA	11/16 (.671-.711)	17-18
ER40 SPR .711-.750 AA	3/4 (.711-.750)	18-19
ER40 SPR .750-.789 AA	25/32 (.750-.789)	19-20
ER40 SPR .789-.829 AA	13/16 (.789-.829)	20-21
ER40 SPR .829-.868 AA	27/32 (.829-.868)	21-22
ER40 SPR .868-.907 AA	7/8 (.868-.907)	22-23
ER40 SPR .907-.947 AA	15/16 (.907-.947)	23-24
ER40 SPR .947-.986 AA	31/32 (.947-.986)	24-25
ER40 SPR .986-1.025 AA	1 (.986-1.025)	25-26

TG + SPRING COLLET



TG100+-SPR

Designation	Diameter Range	Diameter Range (mm)
TG100+ SPR .093-.150	1/8, 9/64 (.093-.150)	2.5- 3.5
TG100+ SPR .150-.199	5/32, 11/64, 3/16 (.150-.199)	4.0- 5
TG100+ SPR .199-.238	13/64, 7/32, 15/64 (.199-.238)	5.0- 6
TG100+ SPR .238-.278	1/4, 17/64 (.238-.278)	6.0- 7
TG100+ SPR .278-.317	9/32, 19/64, 5/16 (.278-.317)	7.0- 8
TG100+ SPR .317-.356	21/64, 11/32 (.317-.356)	8.0- 9
TG100+ SPR .356-.396	23/64, 3/8, 25/64 (.356-.396)	9.0-10
TG100+ SPR .396-.435	13/32, 27/64 (.396-.435)	10.0-11
TG100+ SPR .435-.474	7/16, 29/64, 15/32 (.435-.474)	11.0-12
TG100+ SPR .474-.514	31/64, 1/2 (.474-.514)	12.0-13
TG100+ SPR .514-.553	33/64, 17/32, 35/64 (.514-.553)	13.0-14
TG100+ SPR .553-.593	9/16, 37/64, 19/32 (.553-.593)	14.0-15
TG100+ SPR .593-.632	39/64, 5/8 (.593-.632)	15.0-16
TG100+ SPR .632-.671	41-64, 21-32, 43/64 (.632-.671)	16.0-17
TG100+ SPR .671-.711	11/16, 45/64 (.671-.711)	17.0-18
TG100+ SPR .711-.750	23/32, 47/32, 3/4 (.711-.750)	18.0-19
TG100+ SPR .750-.789	49/64, 25/32 (.750-.789)	19.0-20
TG100+ SPR .789-.829	51/64, 13/16, 53/64 (.789-.829)	20.0-21
TG100+ SPR .829-.868	27/32, 55/64 (.829-.868)	21.0-22
TG100+ SPR .868-.907	7/8, 57/64, 29/32 (.868-.907)	22.0-23
TG100+ SPR .907-.947	59/64, 15/16 (.907-.947)	23.0-24
TG100+ SPR .947-.986	61/64, 31/32, 63/64 (.947-.986)	24.0-25
TG100+ SPR .986-1.025	1 (.986-1.025)	25.0-26



SET TG100+-SPR

Designation	Diameter Range	Diameter Range (mm)	Pcs.
SET TG100+ SPR .093-1.025 23	1/8-1 (.093-1.025)	2.5-26	23
SET TG100+ SPR .093-.514 10	1/8-1/2 (.093-.514)	2.5-13	10
SET TG100+ SPR .511-1.025 13	33/64-1 (.511-1.025)	13-26	13

ER COOLIT - SEALED JET COLLET 1450 PSI



ER16, 20, 25-SEAL

Designation	Diameter Range	Diameter Range (mm)
ER16 SEAL .120-.159	1/8 (.120-.159)	3- 4
ER16 SEAL .159-.199	3/16 (.159-.199)	4- 5
ER16 SEAL .199-.238	7/32 (.199-.238)	5- 6
ER16 SEAL .238-.278	1/4 (.238-.278)	6- 7
ER16 SEAL .278-.317	5/16 (.278-.317)	7- 8
ER16 SEAL .317-.356	11/32 (.317-.356)	8- 9
ER16 SEAL .356-.396	3/8 (.356-.396)	9-10
ER20 SEAL .120-.159	1/8 (.120-.159)	3- 4
ER20 SEAL .159-.199	3/16 (.159-.199)	4- 5
ER20 SEAL .199-.238	7/32 (.199-.238)	5- 6
ER20 SEAL .238-.278	1/4 (.238-.278)	6- 7
ER20 SEAL .278-.317	5/16 (.278-.317)	7- 8
ER20 SEAL .317-.356	11/32 (.317-.356)	8- 9
ER20 SEAL .356-.396	3/8 (.356-.396)	9-10
ER20 SEAL .396-.435	13/32 (.396-.435)	10-11
ER20 SEAL .435-.474	7/16 (.435-.474)	11-12
ER20 SEAL .474-.514	1/2 (.474-.514)	12-13
ER25 SEAL .120-.159	1/8 (.120-.159)	3- 4
ER25 SEAL .159-.199	3/16 (.159-.199)	4- 5
ER25 SEAL .199-.238	7/32 (.199-.238)	5- 6
ER25 SEAL .238-.278	1/4 (.238-.278)	6- 7
ER25 SEAL .278-.317	5/16 (.278-.317)	7- 8
ER25 SEAL .317-.356	11/32 (.317-.356)	8- 9
ER25 SEAL .356-.396	3/8 (.356-.396)	9-10
ER25 SEAL .396-.435	13/32 (.396-.435)	10-11
ER25 SEAL .435-.474	7/16 (.435-.474)	11-12
ER25 SEAL .474-.514	1/2 (.474-.514)	12-13
ER25 SEAL .514-.553	17/32 (.514-.553)	13-14
ER25 SEAL .553-.593	9/16 (.553-.593)	14-15
ER25 SEAL .593-.632	5/8 (.593-.632)	15-16

Note: When clamping a tool in the lower .012" (for example .323") of the clamping range (the full collapsibility range is .40"), the runout of the tool in the sealed collet may sometimes exceed the .0004" tolerance. In these cases a special collet of the exact size should be ordered.

ER32, 20, 40-SEAL

Designation	Diameter Range	Diameter Range (mm)
ER32 SEAL .120-.159	1/8 (.120-.159)	3- 4
ER32 SEAL .159-.199	3/16 (.159-.199)	4- 5
ER32 SEAL .199-.238	7/32 (.199-.238)	5- 6
ER32 SEAL .238-.278	1/4 (.238-.278)	6- 7
ER32 SEAL .278-.317	5/16 (.278-.317)	7- 8
ER32 SEAL .317-.356	11/32 (.317-.356)	8- 9
ER32 SEAL .356-.396	3/8 (.356-.396)	9-10
ER32 SEAL .396-.435	13/32 (.396-.435)	10-11
ER32 SEAL .435-.474	7/16 (.435-.474)	11-12
ER32 SEAL .474-.514	1/2 (.474-.514)	12-13
ER32 SEAL .514-.553	17/32 (.514-.553)	13-14
ER32 SEAL .553-.593	9/16 (.553-.593)	14-15
ER32 SEAL .593-.632	5/8 (.593-.632)	15-16
ER32 SEAL .632-.671	21/32 (.632-.671)	16-17
ER32 SEAL .671-.711	11/16 (.671-.711)	17-18
ER32 SEAL .711-.750	3/4 (.711-.750)	18-19
ER32 SEAL .750-.789	25/32 (.750-.789)	19-20
ER40 SEAL .120-.159	1/8 (.120-.159)	3- 4
ER40 SEAL .159-.199	3/16 (.159-.199)	4- 5
ER40 SEAL .199-.238	7/32 (.199-.238)	5- 6
ER40 SEAL .238-.278	1/4 (.238-.278)	6- 7
ER40 SEAL .278-.317	5/16 (.278-.317)	7- 8
ER40 SEAL .317-.356	11/32 (.317-.356)	8- 9
ER40 SEAL .356-.396	3/8 (.356-.396)	9-10
ER40 SEAL .396-.435	13/32 (.396-.435)	10-11
ER40 SEAL .435-.474	7/16 (.435-.474)	11-12
ER40 SEAL .474-.514	1/2 (.474-.514)	12-13
ER40 SEAL .514-.553	17/32 (.514-.553)	13-14
ER40 SEAL .553-.593	9/16 (.553-.593)	14-15
ER40 SEAL .593-.632	5/8 (.593-.632)	15-16
ER40 SEAL .632-.671	21/32 (.632-.671)	16-17
ER40 SEAL .671-.711	11/16 (.671-.711)	17-18
ER40 SEAL .711-.750	3/4 (.711-.750)	18-19
ER40 SEAL .750-.789	25/32 (.750-.789)	19-20
ER40 SEAL .789-.829	13/16 (.789-.829)	20-21
ER40 SEAL .829-.868	27/32 (.829-.868)	21-22
ER40 SEAL .868-.907	7/8 (.868-.907)	22-23
ER40 SEAL .907-.947	15/16 (.907-.947)	23-24
ER40 SEAL .947-.986	31/32 (.947-.986)	24-25
ER40 SEAL .986-1.025	1 (.986-1.025)	25-26

ER COOLIT - SEALED JET2 SPRING COLLETS 1450 PSI



ER16, 20, 25-SEAL-JET2

Designation	Diameter Range	Diameter Range (mm)
ER16 SEAL .120-.159 JET2	1/8 (.120-.159)	3- 4
ER16 SEAL .159-.199 JET2	3/16 (.159-.199)	4- 5
ER16 SEAL .199-.238 JET2	7/32 (.199-.238)	5- 6
ER16 SEAL .238-.278 JET2	1/4 (.238-.278)	6- 7
ER16 SEAL .278-.317 JET2	5/16 (.278-.317)	7- 8
ER16 SEAL .317-.356 JET2	11/32 (.317-.356)	8- 9
ER16 SEAL .356-.396 JET2	3/8 (.356-.396)	9-10
ER20 SEAL .120-.159 JET2	1/8 (.120-.159)	3- 4
ER20 SEAL .159-.199 JET2	3/16 (.159-.199)	4- 5
ER20 SEAL .199-.238 JET2	7/32 (.199-.238)	5- 6
ER20 SEAL .238-.278 JET2	1/4 (.238-.278)	6- 7
ER20 SEAL .278-.317 JET2	5/16 (.278-.317)	7- 8
ER20 SEAL .317-.356 JET2	11/32 (.317-.356)	8- 9
ER20 SEAL .356-.396 JET2	3/8 (.356-.396)	9-10
ER20 SEAL .396-.435 JET2	13/32 (.396-.435)	10-11
ER20 SEAL .435-.474 JET2	7/16 (.435-.474)	11-12
ER20 SEAL .474-.514 JET2	1/2 (.474-.514)	12-13
ER25 SEAL .120-.159 JET2	1/8 (.120-.159)	3- 4
ER25 SEAL .159-.199 JET2	3/16 (.159-.199)	4- 5
ER25 SEAL .199-.238 JET2	7/32 (.199-.238)	5- 6
ER25 SEAL .238-.278 JET2	1/4 (.238-.278)	6- 7
ER25 SEAL .278-.317 JET2	5/16 (.278-.317)	7- 8
ER25 SEAL .317-.356 JET2	11/32 (.317-.356)	8- 9
ER25 SEAL .356-.396 JET2	3/8 (.356-.396)	9-10
ER25 SEAL .396-.435 JET2	13/32 (.396-.435)	10-11
ER25 SEAL .435-.474 JET2	7/16 (.435-.474)	11-12
ER25 SEAL .474-.514 JET2	1/2 (.474-.514)	12-13
ER25 SEAL .514-.553 JET2	17/32 (.514-.553)	13-14
ER25 SEAL .553-.593 JET2	9/16 (.553-.593)	14-15
ER25 SEAL .593-.632 JET2	5/8 (.593-.632)	15-16

Note: When clamping a tool in the lower .012" (for example .323") of the clamping range (the full collapsibility range is .40"), the runout of the tool in the sealed collet may sometimes exceed the .0004" tolerance. In these cases a special collet of the exact size should be ordered.

ER32, 40-SEAL-jet2

Designation	Diameter Range	Diameter Range (mm)
ER32 SEAL .120-.159 JET2	1/8 (.120-.159)	3- 4
ER32 SEAL .159-.199 JET2	3/16 (.159-.199)	4- 5
ER32 SEAL .199-.238 JET2	7/32 (.199-.238)	5- 6
ER32 SEAL .238-.278 JET2	1/4 (.238-.278)	6- 7
ER32 SEAL .278-.317 JET2	5/16 (.278-.317)	7- 8
ER32 SEAL .317-.356 JET2	11/32 (.317-.356)	8- 9
ER32 SEAL .356-.396 JET2	3/8 (.356-.396)	9-10
ER32 SEAL .396-.435 JET2	13/32 (.396-.435)	10-11
ER32 SEAL .435-.474 JET2	7/16 (.435-.474)	11-12
ER32 SEAL .474-.514 JET2	1/2 (.474-.514)	12-13
ER32 SEAL .514-.553 JET2	17/32 (.514-.553)	13-14
ER32 SEAL .553-.593 JET2	9/16 (.553-.593)	14-15
ER32 SEAL .593-.632 JET2	5/8 (.593-.632)	15-16
ER32 SEAL .632-.671 JET2	21/32 (.632-.671)	16-17
ER32 SEAL .671-.711 JET2	11/16 (.671-.711)	17-18
ER32 SEAL .711-.750 JET2	3/4 (.711-.750)	18-19
ER32 SEAL .750-.789 JET2	25/32 (.750-.789)	19-20
ER40 SEAL .120-.159 JET2	1/8 (.120-.159)	3- 4
ER40 SEAL .159-.199 JET2	3/16 (.159-.199)	4- 5
ER40 SEAL .199-.238 JET2	7/32 (.199-.238)	5- 6
ER40 SEAL .238-.278 JET2	1/4 (.238-.278)	6- 7
ER40 SEAL .278-.317 JET2	5/16 (.278-.317)	7- 8
ER40 SEAL .317-.356 JET2	11/32 (.317-.356)	8- 9
ER40 SEAL .356-.396 JET2	3/8 (.356-.396)	9-10
ER40 SEAL .396-.435 JET2	13/32 (.396-.435)	10-11
ER40 SEAL .435-.474 JET2	7/16 (.435-.474)	11-12
ER40 SEAL .474-.514 JET2	1/2 (.474-.514)	12-13
ER40 SEAL .514-.553 JET2	17/32 (.514-.553)	13-14
ER40 SEAL .553-.593 JET2	9/16 (.553-.593)	14-15
ER40 SEAL .593-.632 JET2	5/8 (.593-.632)	15-16
ER40 SEAL .632-.671 JET2	21/32 (.632-.671)	16-17
ER40 SEAL .671-.711 JET2	11/16 (.671-.711)	17-18
ER40 SEAL .711-.750 JET2	3/4 (.711-.750)	18-19
ER40 SEAL .750-.789 JET2	25/32 (.750-.789)	19-20
ER40 SEAL .789-.829 JET2	13/16 (.789-.829)	20-21
ER40 SEAL .829-.868 JET2	27/32 (.829-.868)	21-22
ER40 SEAL .868-.907 JET2	7/8 (.868-.907)	22-23
ER40 SEAL .907-.947 JET2	15/16 (.907-.947)	23-24
ER40 SEAL .947-.986 JET2	31/32 (.947-.986)	24-25
ER40 SEAL .986-1.025 JET2	1 (.986-1.025)	25-26

Ingersoll

TG100 COOLIT - SEALED SPRING COLLETS 500 PSI



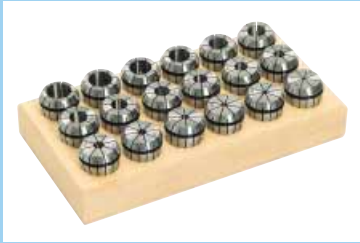
TG100-SEAL

Designation TG100 SEAL .172-.187	Diameter Range 3/16 (.172-.187)
TG100 SEAL .188-.203	13/64 (.188-.203)
TG100 SEAL .204-.219	7/32 (.204-.219)
TG100 SEAL .219-.234	15/64 (.219-.234)
TG100 SEAL .235-.250	1/4 (.235-.250)
TG100 SEAL .251-.266	17/64 (.251-.266)
TG100 SEAL .266-.281	9/32 (.266-.281)
TG100 SEAL .282-.297	19/64 (.282-.297)
TG100 SEAL .297-.313	5/16 (.297-.313)
TG100 SEAL .313-.328	21/64 (.313-.328)
TG100 SEAL .329-.344	11/32 (.329-.344)
TG100 SEAL .344-.359	23/64 (.344-.359)
TG100 SEAL .360-.375	3/8 (.360-.375)
TG100 SEAL .376-.391	25/64 (.376-.391)
TG100 SEAL .391-.406	13/32 (.391-.406)
TG100 SEAL .407-.422	27/64 (.407-.422)
TG100 SEAL .422-.437	7/16 (.422-.437)
TG100 SEAL .438-.453	29/64 (.438-.453)
TG100 SEAL .454-.469	15/32 (.454-.469)
TG100 SEAL .469-.484	31/64 (.469-.484)
TG100 SEAL .485-.500	1/2 (.485-.500)
TG100 SEAL .501-.516	33/64 (.501-.516)
TG100 SEAL .516-.531	17/32 (.516-.531)
TG100 SEAL .532-.547	35/64 (.532-.547)
TG100 SEAL .547-.562	9/16 (.547-.562)
TG100 SEAL .563-.578	37/64 (.563-.578)
TG100 SEAL .579-.594	19/32 (.579-.594)

TG100-SEAL

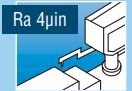
Designation TG100 SEAL .594-.609	Diameter Range 39/64 (.594-.609)
TG100 SEAL .610-.625	5/8 (.610-.625)
TG100 SEAL .626-.641	41/64 (.626-.641)
TG100 SEAL .641-.656	21/32 (.641-.656)
TG100 SEAL .657-.672	43/64 (.657-.672)
TG100 SEAL .673-.688	11/16 (.673-.688)
TG100 SEAL .688-.703	45/64 (.688-.703)
TG100 SEAL .704-.719	23/32 (.704-.719)
TG100 SEAL .719-.734	47/64 (.719-.734)
TG100 SEAL .735-.750	3/4 (.735-.750)
TG100 SEAL .751-.766	49/64 (.751-.766)
TG100 SEAL .766-.781	25/32 (.766-.781)
TG100 SEAL .782-.797	51/64 (.782-.797)
TG100 SEAL .798-.813	13/16 (.798-.813)
TG100 SEAL .813-.828	53/64 (.813-.828)
TG100 SEAL .829-.844	27/32 (.829-.844)
TG100 SEAL .844-.859	55/64 (.844-.859)
TG100 SEAL .860-.875	7/8 (.860-.875)
TG100 SEAL .876-.891	57/64 (.876-.891)
TG100 SEAL .891-.906	29/32 (.891-.906)
TG100 SEAL .907-.922	59/64 (.907-.922)
TG100 SEAL .923-.938	15/16 (.923-.938)
TG100 SEAL .938-.953	61/64 (.938-.953)
TG100 SEAL .954-.968	31/32 (.954-.968)
TG100 SEAL .968-.984	63/64 (.969-.984)
TG100 SEAL .985-.1.00	1 (.985-1.00)

ER SPRING COLLET SETS



SET-ER SPR Spring Collets DIN 6499

Designation	Pcs.	Diameter Range	Diameter Range (mm)
SET ER11 SPR 7	7	.022- .278	0.5- 7
SET ER16 SPR 10	10	.022- .396	0.5-10
SET ER20 SPR 12	12	.041- .514	1.0-13
SET ER25 SPR 15	15	.041- .632	1.0-16
SET ER32 SPR 18	18	.080- .789	2.0-20
SET ER40 SPR 23	23	.120-1.025	3.0-26
SET ER50 SPR 12	12	.396-1.338	10.0-34



SET-ER-SPR-AA Spring Collets DIN 6499 "AA"



Designation	Pcs.	Diameter Range	Diameter Range (mm)
SET ER11 SPR 7 AA	7	.022- .278	0.5- 7
SET ER16 SPR 10 AA	10	.022- .396	0.5-10
SET ER20 SPR 12 AA	12	.041- .514	1.0-13
SET ER25 SPR 15 AA	15	.041- .632	1.0-16
SET ER32 SPR 18 AA	18	.080- .789	2.0-20
SET ER40 SPR 23 AA	23	.120-1.025	3.0-26

ER COOLIT - SEALED JETS COLLET SETS 1450 PSI



SET-ER-SEAL Collets DIN 6499

Designation	Pcs.	Diameter Range	Diameter Range (mm)
SET ER16 SEAL 7	7	.120- .396	3-10
SET ER20 SEAL 10	10	.120- .514	3-13
SET ER25 SEAL 13	13	.120- .632	3-16
SET ER32 SEAL 17	17	.120- .789	3-20
SET ER40 SEAL 23	23	.120-1.025	3-26



SET-ER-SEAL-JET2 Collet DIN 6499

Designation	Pcs.	Diameter Range	Diameter Range (mm)
SET ER16 SEAL 7 JET2	7	.120- .396	3-10
SET ER20 SEAL 10 JET2	10	.120- .514	3-13
SET ER25 SEAL 13 JET2	13	.120- .632	3-16
SET ER32 SEAL 17 JET2	17	.120- .789	3-20
SET ER40 SEAL 23 JET2	23	.120-1.025	3-26

Note: When clamping a tool in the lower .012" (for example .323") of the clamping range (the full collapsibility range is .40"), the runout of the tool in the sealed collet may sometimes exceed the .0004" tolerance. In these cases a special collet of the exact size should be ordered.

ER SPRING EMI COLLET SETS DIN 6499



SET ER SPR-EMI ⁽¹⁾

Designation	Pcs.	Collet Sizes
SET ER16 SPR 5 EMI	5	1/8, 3/16, 1/4, 5/16, 3/8
SET ER20 SPR 5 EMI	5	3/16, 1/4, 5/16, 3/8, 1/2
SET ER25 SPR 6 EMI	6	3/16, 1/4, 5/16, 3/8, 1/2, 5/8
SET ER32 SPR 6 EMI	6	1/4, 3/16, 5/16, 3/8, 1/2, 5/8, 3/4
SET ER40 SPR 7 EMI	7	1/4, 3/16, 5/16, 3/8, 1/2, 5/8, 3/4, 1

⁽¹⁾ EMI-Endmill cutter in inch sizes.



ER COOLIT - SEALED JET EMI COLLET SETS

SET ER SPR-EMI ⁽¹⁾

Designation	Pcs.	Collet Sizes
SET ER 16 SEAL 5 EMI	5	1/8, 3/16, 1/4, 5/16, 3/8
SET ER 20 SEAL 5 EMI	5	1/8, 3/16, 1/4, 5/16, 3/8, 1/2
SET ER 25 SEAL 6 EMI	6	1/8, 3/16, 1/4, 5/16, 3/8, 1/2, 5/8
SET ER 32 SEAL 6 EMI	6	3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4
SET ER 40 SEAL 7 EMI	7	3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 1

⁽¹⁾ EMI-Endmill cutter in inch sizes.



SET-ER SEAL-EMI JET2

Designation	Set Pcs.	Collet Sizes
SET ER 16 SEAL 5 EMI JET2	5	1/8, 3/16, 1/4, 5/16, 3/8
SET ER 20 SEAL 5 EMI JET2	5	1/8, 3/16, 1/4, 5/16, 3/8, 1/2
SET ER 25 SEAL 6 EMI JET2	6	1/8, 3/16, 1/4, 5/16, 3/8, 1/2, 5/8
SET ER 32 SEAL 6 EMI JET2	6	3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4
SET ER 40 SEAL 7 EMI JET2	7	3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 1

Note: When clamping a tool in the lower .012" (for example .323") of the clamping range (the full collapsibility range is .40"), the runout of the tool in the sealed collet may sometimes exceed the .0004" tolerance. In these cases a special collet of the exact size should be ordered.



SHRINKIN - THERMAL SHRINK CHUCKING SYSTEMS

SHRINKIN thermal shrinking collets are an enhancement to the existing popular ER collet system. The SHRINKIN collets utilize the thermal expansion and shrink phenomenon for rigid clamping of steel, HSS and solid carbide tools. SHRINKIN collets provide high torque, precision runout and excellent repeatability.

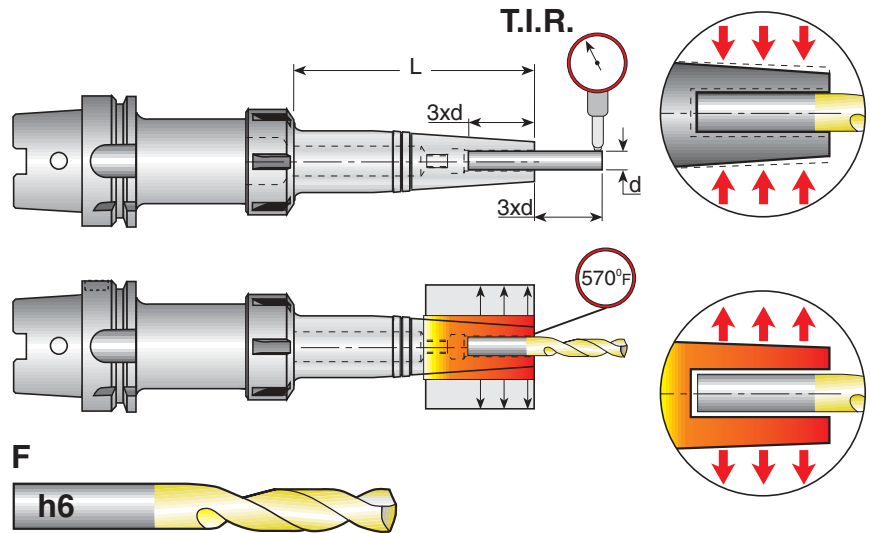
The SHRINKIN ER collets with their slim design and various projection lengths allow the user to reach deep cavities and perform narrow milling applications.

Ingersoll offers a complete system for the SHRINKIN collets with integral ER or other standard, integral tapered shanks.

The conventional, thermal shrink chucking unit can be used only for solid carbide tools, clamped into SRK ER collets. The induction thermal unit can be used for steel, HSS and solid carbide tools. It can be used for both SRK and SRKIN collets with ER or other integral tapered shanks.



Clamping Time
15-45 seconds



L (inch)	Max T.I.R
1.500	.00030
2.500	.00035
3.500	.00040

Features:

- Slim design with various projections
- Flexible - fits into standard ER chucks
- High torque transfer
- Rigid clamping of carbide tools
- Precision runout
- Perfect repeatability
- Vibration damping
- Coolant through the tool
- Coolant Jet2 available
- Symmetrical design for high speed machining
- Quick and easy tool changing
- Two types of thermal heating units

SHRINKIN - THERMAL SHRINK CHUCKING SYSTEM

Standard ER Collet Chucks

...HSK 40, 50, 63, 100



...BT 30, 40, 50



...CAT 30, 40, 50



...ISO 30, 40, 50



SHORTIN

CAT 40, 50

BT 40, 50

HSK 63, 100



Integral Holder

HSK A/E-SRK

CAT-SRK

BT-SRK



SHRINKIN ER Collet

Compatible with Standard ER Collets DIN 6499

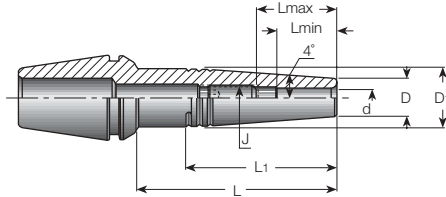
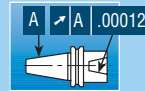
ER20

ER25

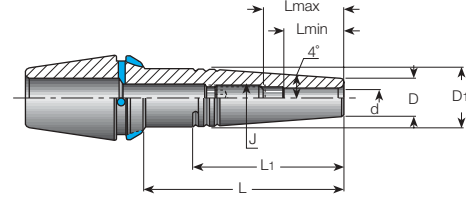
ER32



ER - THERMAL SHRINKING ER COLLET DIN 6499



ER.. SRK..



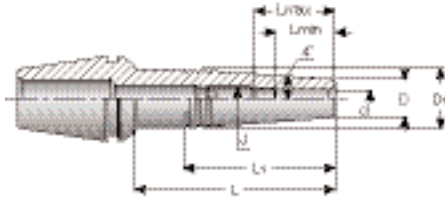
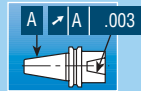
(1) ER.. SRK JET2..

Designation	d	L	L1	Lmin	Lmax	D1	D	J	Hex Key ⁽²⁾
ER20 SRK 1/8X1.500	.125	1.500	.970	.394	.630	.530	.394	M6	3
ER20 SRK 1/8X2.500	.125	2.500	.970	.394	.630	.530	.394	M6	3
ER20 SRK 3/16X1.500	.187	1.500	.970	.590	.830	.530	.394	M6	3
ER20 SRK 3/16X2.500	.187	2.500	.970	.590	.830	.530	.394	M6	3
ER20 SRK 1/4X1.500	.250	1.500	1.140	.709	.950	.590	.433	M8	4
ER20 SRK 1/4X2.500	.250	2.500	1.310	.709	.950	.620	.433	M8	4
ER25 SRK 1/8X1.500	.125	1.500	1.110	.394	.630	.550	.394	M6	3
ER25 SRK 1/8X2.500	.125	2.500	1.710	.394	.630	.630	.394	M6	3
ER25 SRK 3/16X1.500	.187	1.500	1.110	.590	.830	.550	.394	M6	3
ER25 SRK 3/16X2.500	.187	2.500	1.710	.590	.830	.630	.394	M6	3
ER25 SRK 1/4X1.500	.250	1.500	1.140	.709	.950	.590	.433	M8	4
ER25 SRK 1/4X2.500	.250	2.500	1.900	.709	.950	.700	.433	M8	4
ER25 SRK 5/16X1.500	.313	1.500	1.080	.984	1.220	.710	.551	M10	5
ER25 SRK 5/16X2.500	.313	2.500	1.710	.984	1.220	.790	.551	M10	5
ER32 SRK 1/8X1.500	.125	1.500	1.100	.394	.630	.550	.394	M6	3
ER32 SRK 1/8X2.500	.125	2.500	2.000	.394	.630	.680	.394	M6	3
ER32 SRK 1/8X3.500	.125	3.500	3.000	.394	.630	.820	.394	M6	3
ER32 SRK 3/16X1.500	.187	1.500	1.110	.590	.830	.550	.394	M6	3
ER32 SRK 3/16X2.500	.187	2.500	1.900	.590	.830	.660	.394	M6	3
ER32 SRK 3/16X3.500	.187	3.500	2.900	.590	.830	.800	.394	M6	3
ER32 SRK 1/4X1.500	.250	1.500	1.140	.709	.950	.590	.433	M8	4
ER32 SRK 1/4X2.500	.250	2.500	1.910	.709	.965	.700	.433	M8	4
ER32 SRK 1/4X3.500	.250	3.500	2.900	.709	1.020	.840	.433	M8	4
ER32 SRK 5/16X1.500	.312	1.500	1.440	.984	1.220	.760	.551	M10	5
ER32 SRK 5/16X2.500	.312	2.500	1.910	.984	1.220	.820	.551	M10	5
ER32 SRK 5/16X3.500	.312	3.500	2.710	.984	1.220	.930	.551	M10	5
ER32 SRK 3/8X1.500	.375	1.500	1.460	1.181	1.380	.840	.629	M12	6
ER32 SRK 3/8X2.500	.375	2.500	1.900	1.181	1.420	.900	.629	M12	6
ER32 SRK 3/8X3.500	.375	3.500	2.120	1.181	1.420	.930	.629	M12	6
ER32 SRK 7/16X1.500	.437	1.500	1.110	1.220	1.420	.940	.787	M14	6
ER32 SRK 7/16X2.500	.437	2.500	1.110	1.220	1.460	.940	.787	M14	6
ER32 SRK 7/16X3.500	.437	3.500	1.110	1.220	1.460	.940	.787	M14	6
ER32 SRK 1/2X1.500	.500	1.500	1.100	1.260	1.460	.940	.787	M14	6
ER32 SRK 1/2X2.500	.500	2.500	1.100	1.260	1.500	.940	.787	M14	6
ER32 SRK 1/2X3.500	.500	3.500	1.410	1.260	1.500	.940	.787	M14	6

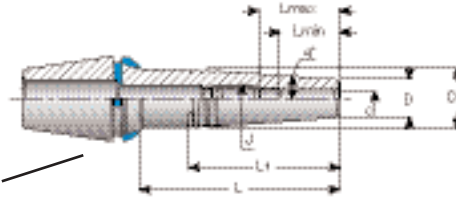
(1) For JET2 collet, add JET2 to the designation (i.e. ER20 SRK 1/8X1 JET2).

(2) Metric

ER - SHRINKIN ER COLLET DIN 6499 - METRIC



ER.. SRK..



(1) ER.. SRK JET2..

Coolant JET2

Designation	d	L	L1	Lmin	Lmax	D1	D	J	Hex Key
ER20 SRK 3X35	3.00	35.00	24.5	10.0	16.00	13.5	10.0	M6	3
ER20 SRK 3X60	3.00	60.00	24.5	10.0	16.00	13.5?	10.0	M6	3
ER20 SRK 4X35	4.00	35.00	24.5	12.0	18.00	13.5	10.0	M6	3
ER20 SRK 4X60	4.00	60.00	24.5	12.0	18.00	13.5	10.0	M6	3
ER20 SRK 5X35	5.00	35.00	24.5	15.0	21.00	13.5	10.0	M6	3
ER20 SRK 5X60	5.00	60.00	24.5	15.0	21.00	13.5	10.0	M6	3
ER20 SRK 6X35	6.00	35.00	25.5	18.0	24.00	14.7	11.0	M8	4
ER20 SRK 6X60	6.00	60.00	29.5	18.0	24.00	15.2	11.0	M8	4
ER25 SRK 3X35	3.00	35.00	24.5	10.0	16.00	13.5	10.0	M6	3
ER25 SRK 3X60	3.00	60.00	44.5	10.0	16.00	16.3	10.0	M6	3
ER25 SRK 4X35	4.00	35.00	24.5	12.0	18.00	13.5	10.0	M6	3
ER25 SRK 4X60	4.00	60.00	44.5	12.0	18.00	16.3	10.0	M6	3
ER25 SRK 5X35	5.00	35.00	24.5	15.0	21.00	13.5	10.0	M6	3
ER25 SRK 5X60	5.00	60.00	44.5	15.0	21.00	16.3	10.0	M6	3
ER25 SRK 6X35	6.00	35.00	26.0	18.0	24.00	14.7	11.0	M8	4
ER25 SRK 6X60	6.00	60.00	44.5	18.0	24.00	17.3	11.0	M8	4
ER25 SRK 8X35	8.00	35.00	26.5	25.0	30.00	17.8	14.0	M10	5
ER25 SRK 8X60	8.00	60.00	39.5	25.0	31.00	19.7	14.0	M10	5
ER32 SRK 3X35	3.00	35.00	22.5	10.0	16.00	13.2	10.0	M6	3
ER32 SRK 3X60	3.00	60.00	44.5	10.0	16.00	16.3	10.0	M6	3
ER32 SRK 3X85	3.00	85.00	70.0	10.0	16.00	19.8	10.0	M6	3
ER32 SRK 4X35	4.00	35.00	23.5	12.0	18.00	13.4	10.0	M6	3
ER32 SRK 4X60	4.00	60.00	44.5	12.0	18.00	16.3	10.0	M6	3
ER32 SRK 4X85	4.00	85.00	70.0	12.0	18.00	19.8	10.0	M6	3
ER32 SRK 5X35	5.00	35.00	24.5	15.0	21.00	13.5	10.0	M6	3
ER32 SRK 5X60	5.00	60.00	44.5	15.0	21.00	16.3	10.0	M6	3
ER32 SRK 5X85	5.00	85.00	70.0	15.0	21.00	19.8	10.0	M6	3
ER32 SRK 6X35	6.00	35.00	25.5	18.0	24.00	14.7	11.0	M8	4
ER32 SRK 6X60	6.00	60.00	45.0	18.0	24.00	17.3	11.0	M8	4
ER32 SRK 6X85	6.00	85.00	69.5	18.0	26.00	20.8	11.0	M8	4
ER32 SRK 8X35	8.00	35.00	33.0	25.0	31.00	18.8	14.0	M10	5
ER32 SRK 8X60	8.00	60.00	45.0	25.0	31.00	20.4	14.0	M10	5
ER32 SRK 8X85	8.00	85.00	65.0	25.0	31.00	23.2	14.0	M10	5
ER32 SRK 10X35	10.00	35.00	34.0	30.0	35.00	20.8	16.0	M12	6
ER32 SRK 10X60	10.00	60.00	44.5	30.0	36.00	22.4	16.0	M12	6
ER32 SRK 10X85	10.00	85.00	49.5	30.0	36.00	23.0	16.0	M12	6
ER32 SRK 12X35	12.00	35.00	28.0	32.0		24.0	20.0		
ER32 SRK 12X60	12.00	60.00	28.0	32.0	38.00	24.0	20.0	M14	6
ER32 SRK 12X85	12.00	85.00	28.0	32.0	38.00	24.0	20.0	M14	6

(1) For JET2 collet, add JET2 to the designations (i.e. ER32 SRK 10x35 JET2).

■ QWIK DRAW - INDUCTION HEATING UNIT



- High operating power (10 kW)
- 3 independent tool post
- Easy and efficient to operate
- Quick tool changing (5 sec.)
- Short cooling time (30 sec.)
- Solid carbide range (1/8- 1 1/4")
- H.S.S. cutter range (1/4- 1 1/4")

Suitable for:

- Integral tooling
- Integral heavy duty tooling
- Extensions
- ER...SRK...unique collets

Technical Specifications:

Clamping range	1/8-11/4"	Carbide tool shank
Clamping range	1/4-11/4"	HSS & steel shank
Main power supply	3 x 380-500V 50/60Hz	
Nominal power	13.4 Hp	
Nominal current	16 AMP	
Cooling unit power supply	110V 50/60Hz	
Nominal power	.67 Hp	
Max. tool length	17.3" (from gauge line)	
Max. dia. clamping chuck	2.04"	
Effective induction field length	1.77"	
Expansion time	approx. 5-12 seconds	
Cooling time	approx. 0.5-1.5 min	
Weight	330 lbs.	
Overall dimensions	66.9 x 28.7 x 28.7"	

QWIK DRAW - SHRINKIN THERMAL ELECTRICAL UNIT

SHRINKIN Thermal Electrical Unit

Designation: IND SHRINKIN UNIT USA

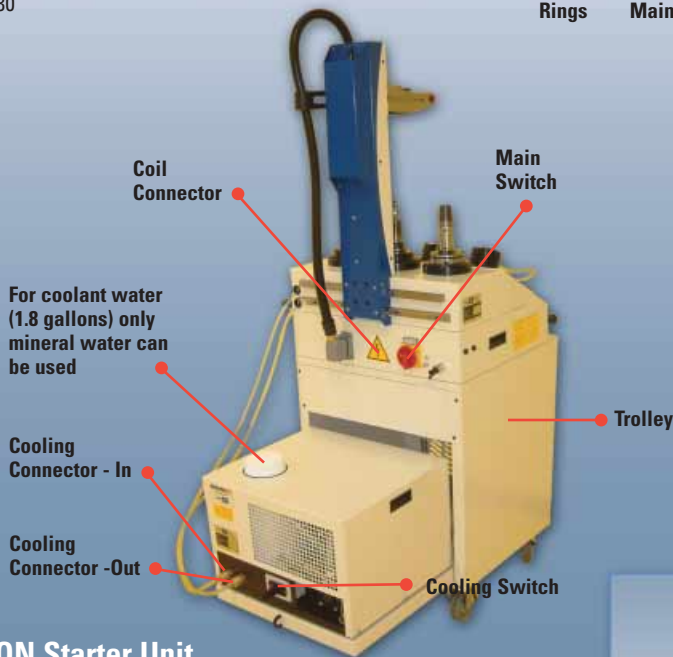
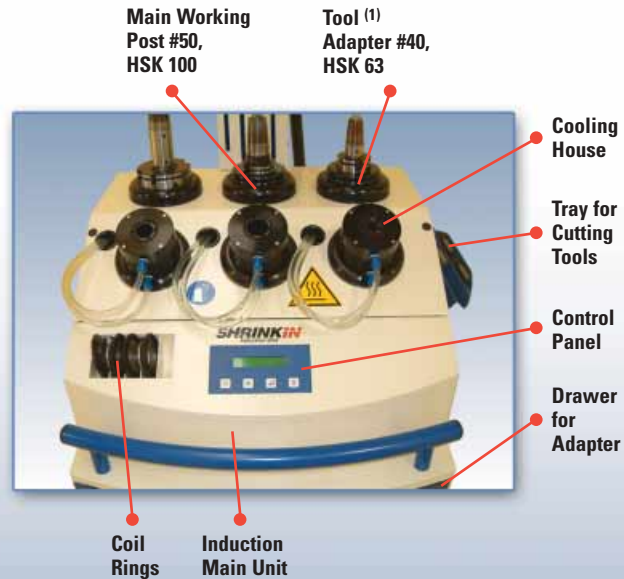
Includes:

Induction Unit, Cooling Unit, Trolley
Three Tool Adapter ⁽¹⁾

Cooling Sleeves	Used for
IND COOLING COLLET 6-8 IND COOLING COLLET 10-12 IND COOLING COLLET 14-16 IND COOLING COLLET 18-20	SRKIN
IND COOLING COLLET ER 3-5 IND COOLING COLLET ER 6 IND COOLING COLLET ER 8 IND COOLING COLLET ER 10 IND COOLING COLLET ER 12	SRK

Optional Tool Adapter for HSK
IND 32 TOOL ADAPTER IND 40 TOOL ADAPTER IND 50 TOOL ADAPTER ⁽¹⁾

⁽¹⁾ For taper #30



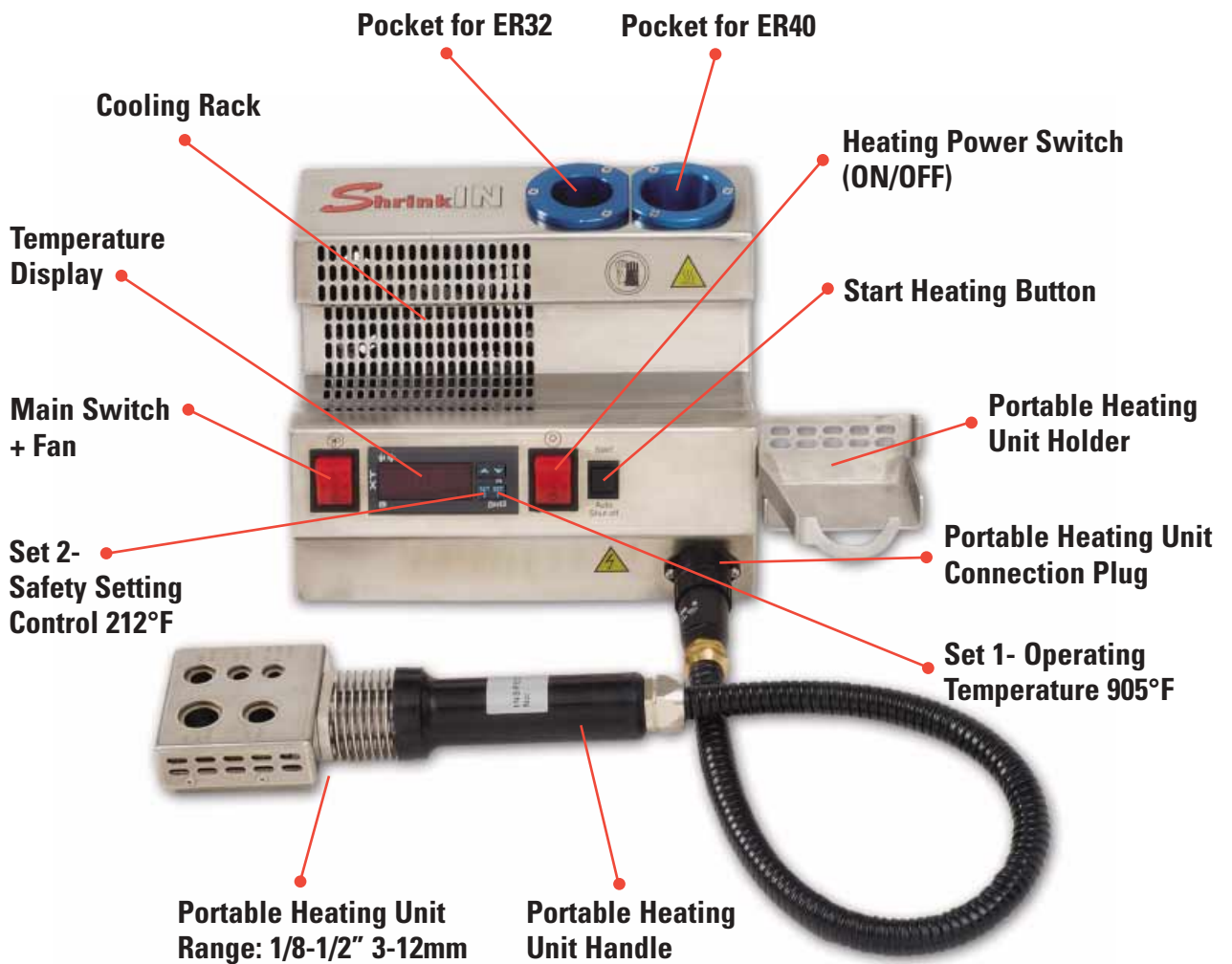
INDUCTION Starter Unit

1 tool post without cooling unit.
The induction starter unit is an economical starter version of the SHRINKIN induction unit. It was designed to help the enduser to purchase the modern shrink chucking technology in a low cost device. The starter unit is actually a simplified and limited version of the complete inductive system that we offer today:

INDUCTION Starter Unit
IND SHRINKIN START UNIT USA



■ DRAW IN - THERMAL HEATING UNIT V2 VERSION



Standard ER Collet Chucks

Designation

SHRINKIN UNIT V2 USA

110V 60 HZ

* Unit includes portable heating handle 110V V2.

Portable Heating Unit Handle

Designation

HEATING HANDLE 110V V2

HEATING HANDLE 16/110V V2

HEATING HANDLE 20/110V V2

Important Note: This thermal heating unit can be used only for heating ER... SRK and ER... SRF collets.

DRAW IN - THERMAL SHRINKIN SRK ER 32 COLLET SET

SET ER32 SHRINKIN

Designation

SET ER32 SRK S 6 USA
SET ER32 SRK M 6 USA
SET ER32 SRK L 6 USA

(6 Pieces) (3/16, 1/4, 5/16, 3/8, 7/16, 1/2)

For JET2 collet, add JET2 to the designation
(SET ER 32 SRK M 6 JET2 USA)



Thermal Shrink Kit

Designation

KIT SHRINKIN L V2 USA
KIT SHRINKIN M V2 USA
KIT SHRINKIN S V2 USA

Includes:

ER32 SRK 6 Piece Collet Set (3/16, 1/4, 5/16,
3/8, 7/16, 1/2)



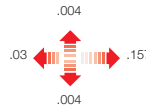
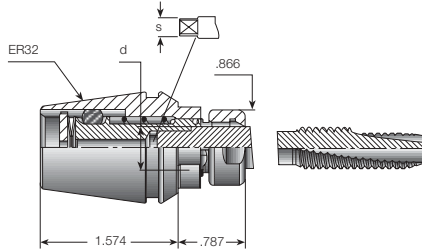
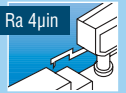
GTIN - ER TAPPING COLLET

TAPPING COLLET ISO/DIN/JIS TYPE TENSION AND COMPRESSION FOR CNC & MILLING MACHINES & TURRET LATHES

58-60 HRC



Ra 4µm



GTIN ER Tapping Collet

Features:

- Fits every type of ER 32 collet chuck stationary and rotating.
- Compensates for machine feed and tap pitch variance.
- Floating mechanism compensates for misalignment between tap and workpiece.
- Hard start for rigid tapping.
- Compact design for minimal clearance.

Designation	d	s	Tap Size
GTIN ER32 ANSI .141X.110	.141	.110	#0-6
GTIN ER32 ANSI .168X.131	.168	.131	#8
GTIN ER32 ANSI .194X.152	.194	.152	#10
GTIN ER32 ANSI .220X.165	.220	.165	#12
GTIN ER32 ANSI .255X.191	.255	.191	1/4
GTIN ER32 ANSI .318X.238	.318	.238	5/16
GTIN ER32 ANSI .381X.286	.381	.286	3/8
GTIN ER32 ANSI .323X.242	.323	.242	7/16
GTIN ER32 ANSI .367X.275	.367	.275	1/2
GTIN ER32 ANSI .429X.322	.429	.322	9/16
GTIN ER32 ANSI .480X.360	.480	.360	5/8

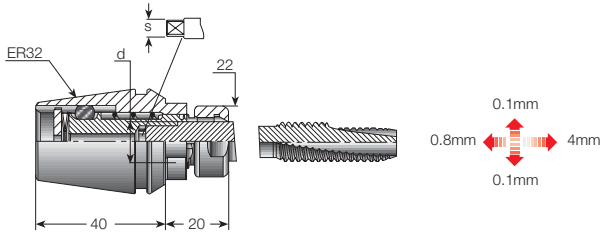
No coolant should be induced through the tapping collet.
It will cause malfunctioning of the mechanism.

GTIN - ER TAPPING COLLET

TAPPING COLLET ISO/DIN/JIS TYPE TENSION AND COMPRESSION FOR CNC & MILLING MACHINES & TURRET LATHES

58-60 HRC

√ N5



GTIN ER Tapping Collet

Features:

- Fits every type of ER 32 collet chuck stationary and rotating.
- Compensates for machine feed and tap pitch variance.
- Floating mechanism compensates for misalignment between tap and workpiece.
- Hard start for rigid tapping.
- Compact design for minimal clearance.

Designation	d	S	T Wrench	Tap Size
GTIN ER32 ISO 2.24X1.80	2.24	1.80	20	M3
GTIN ER32 ISO 2.50X2.00	2.50	2.00	20	M3.5
GTIN ER32 ISO 2.80X2.24	2.80	2.24	20	M2.2-M2.5
GTIN ER32 ISO 3.15X2.50	3.15	2.50	20	M3-M4
GTIN ER32 ISO 3.55X2.80	3.55	2.80	20	M3.5-M4.5
GTIN ER32 ISO 4.00X3.15	4.00	3.15	20	M4-M5
GTIN ER32 ISO 4.50X3.55	4.50	3.55	20	M6
GTIN ER32 ISO 5.00X4.00	5.00	4.00	20	M5
GTIN ER32 ISO 5.60X4.50	5.60	4.50	20	*
GTIN ER32 ISO 6.30X5.00	6.30	5.00	20	M6-M8
GTIN ER32 ISO 7.10X5.60	7.10	5.60	20	**
GTIN ER32 ISO 8.00X6.30	8.00	6.30	20	M8-M10
GTIN ER32 ISO 9.00X7.10	9.00	7.10	20	M12
GTIN ER32 ISO 10.0X8.00	10.00	8.00	20	M10
GTIN ER32 ISO 11.20X9.00	11.20	9.00	20	M14
GTIN ER32 ISO 12.5X10.0	12.50	10.00	20	M16

* Tap size UNC#12-24

** Tap size UNC#-3/8-16

Designation	d	S	T Wrench	Tap Size
GTIN ER32 DIN 2.50X2.10	2.50	2.10	20	M1-M1.8
GTIN ER32 DIN 2.80X2.10	2.80	2.10	20	M2-M4
GTIN ER32 DIN 3.50X2.70	3.50	2.70	20	M3-M5
GTIN ER32 DIN 4.00X3.00	4.00	3.00	20	M3.M5
GTIN ER32 DIN 4.50X3.40	4.50	3.40	20	M4-M6
GTIN ER32 DIN 6.00X4.90	6.00	4.90	20	M5-M8
GTIN ER32 DIN 7.00X5.50	7.00	5.50	20	M10
GTIN ER32 DIN 8.00X6.20	8.00	6.20	20	M8
GTIN ER32 DIN 9.00X7.00	9.00	7.00	20	M12
GTIN ER32 DIN 10.00X8.00	10.00	8.00	20	M10
GTIN ER32 DIN 11.00X9.00	11.00	9.00	20	M14
GTIN ER32 DIN 12.00X9.00	12.00	9.00	20	M16

Designation	d	S	T Wrench	Tap Size
GTIN ER32 JIS 3.0X2.5	3.0	2.5	20	M1-M2.6
GTIN ER32 JIS 4.0X3.2	4.0	3.2	20	M3-M3.5
GTIN ER32 JIS 5.0X4.0	5.0	4.0	20	M4
GTIN ER32 JIS 5.5X4.5	5.5	4.5	20	M5
GTIN ER32 JIS 6.0X4.5	6.0	4.5	20	M6
GTIN ER32 JIS 6.2X5.0	6.2	5.0	20	M8
GTIN ER32 JIS 7.0X5.5	7.0	5.5	20	M10
GTIN ER32 JIS 8.5X6.5	8.5	6.5	20	M12
GTIN ER32 JIS 10.5X8.0	10.5	8.0	20	M14
GTIN ER32 JIS 12.5X10.0	12.5	10.0	20	M16

No coolant should be induced through the tapping collet.
It will cause malfunctioning of the mechanism.

Ingersoll



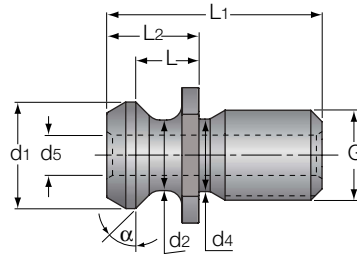
CUTTING TOOLS
CUTTING TOOLS

ACCESSORIES

Cutting Tools



ACCESSORIES – PULL STUD - CAT ANSI



Designation	G	d ₁	d ₂	d ₄	d ₅	L	L ₁	L ₂	a°
PS CAT30 45° 1/2 ANSI	1/2-13	.520	.390	.385	-	.320	1.100	.460	45
PS CAT40 45° 5/8 ANSI	5/8-11	.740	.490	.490	-	.439	1.500	.640	45
PS CAT40 45° 5/8 ANSI B	5/8-11	.740	.490	.490	.280	.439	1.500	.640	45
PS CAT50 45° 1 ANSI	1-8	1.140	.820	.820	-	.703	2.300	1.000	45
PS CAT50 45° 1 ANSI B	1-8	1.140	.820	.820	.315	.703	2.300	1.000	45

"B" = with internal coolant

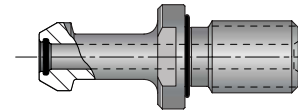
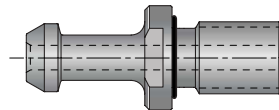
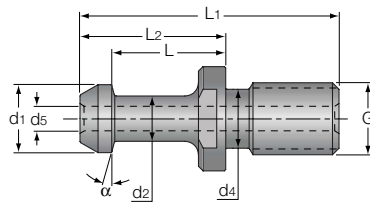
ACCESSORIES – PULL STUD - CAT MAS



Fig. 1

Fig. 2

Fig. 3



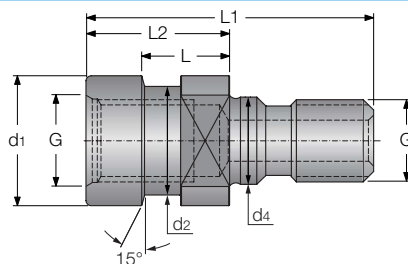
Designation	G	d ₁	d ₂	d ₄	d ₅	L	L ₁	L ₂	a°	Fig.
PS CAT40 45° 5/8 MAS1	5/8-11	.590	.390	.512	-	.990	2.250	1.266	45	1
PS CAT40 45° 5/8 MAS1 B	5/8-11	.590	.390	.512	.217	.990	2.250	1.266	45	1
PS CAT40 60° 5/8 MAS2	5/8-11	.590	.390	.512	-	.990	2.250	1.266	60	1
PS CAT40 60° 5/8 MAS2 B	5/8-11	.590	.390	.512	.217	.990	2.250	1.266	60	1
PS CAT40 90° 5/8 MAS3	5/8-11	.590	.390	.512	-	.990	2.250	1.266	90	1
PS CAT40 90° 5/8 MAS3 B	5/8-11	.590	.390	.512	.217	.990	2.250	1.266	90	1
PS CAT50 45° 1" MAS1	1-8	.906	.670	.827	-	1.378	3.346	1.772	45	1
PS CAT50 45° 1" MAS1 B	1-8	.906	.670	.827	.236	1.378	3.346	1.772	45	1
PS CAT50 45° 1" MAS1 O B	1-8	.906	.670	.827	.236	1.386	3.346	1.772	45	2
PS CAT50 45° 1" MAS1 O B O	1-8	.906	.670	.827	.236	1.386	3.346	1.772	45	3
PS CAT50 60° 1" MAS2 B	1-8	.906	.670	.827	-	1.378	3.346	1.772	60	1
PS CAT50 60° 1" MAS2	1-8	.906	.670	.827	.236	1.378	3.346	1.772	60	1
PS CAT50 90° 1" MAS3	1-8	.906	.670	.827	-	1.378	3.346	1.772	90	1
PS CAT50 90° 1" MAS3 B	1-8	.906	.670	.827	.236	1.378	3.346	1.772	90	1

ACCESSORIES – PULL STUD - OTT SYSTEM - METRIC

58-60 HRc



√ N5



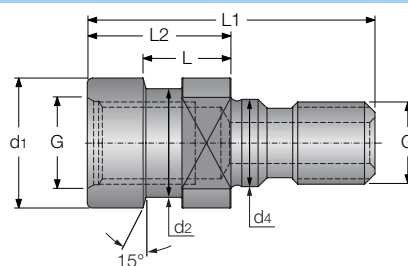
Designation	G	d ₁	d ₂	d ₄	L	L ₁	L ₂
PS OTT BT40 M16	M16	25.0	21.1	17	16.60	56	28
PS OTT SK40 M16	M16	25.0	21.1	17	13.60	53	25
PS OTT BT50 M24	M24	39.3	32.0	25	13.35	65	25

ACCESSORIES – PULL STUD - BT-MAS - METRIC

58-60 HRc



√ N5

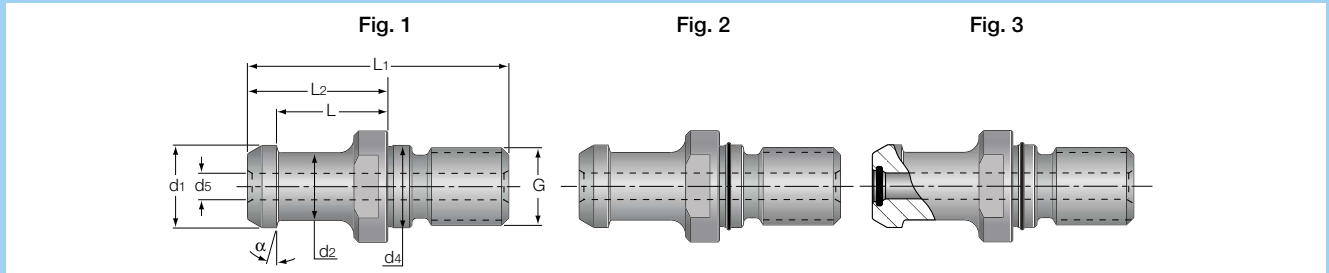
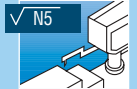


Designation	G	d ₁	d ₂	d ₄	d ₅	L	L ₁	L ₂	a°	Fig.
PS BT30 45° M12 MAS1	M12	11	7	12.5	-	18	43	23	45	1
PS BT30 45° M12 MAS1 B	M12	11	7	12.5	3	18	43	23	45	1
PS BT30 60° M12 MAS2	M12	11	7	12.5	-	18	43	23	30	1
PS BT30 60° M12 MAS2 B	M12	11	7	12.5	3	18	43	23	30	1
PS BT40 45° M16 MAS1	M16	15	10	17.0	-	28	60	35	45	1
PS BT40 45° M16 MAS1 B	M16	15	10	17.0	5.5	28	60	35	45	1
PS BT40 60° M16 MAS2	M16	15	10	17.0	-	28	60	35	30	1
PS BT40 60° M16 MAS2 B	M16	15	10	17.0	5.5	28	60	35	30	1
PS BT40 90° M16 MAS3	M16	15	10	17.0	-	28	60	35	90	1
PS BT40 90° M16 MAS3 B	M16	15	10	17.0	5.5	28	60	35	90	1
PS BT50 45° M24 MAS1	M24	23	17	25.0	-	35	85	45	45	1
PS BT50 45° M24 MAS1 B	M24	23	17	25.0	6.0	35	85	45	45	1
PS BT50 45° M24 MAS1 O B	M24	23	17	25.0	6.0	35	85	45	45	2
PS BT50 45° M24 MAS1 O B O	M24	23	17	25.0	6.0	35	85	45	45	3
PS BT50 60° M24 MAS2	M24	23	17	25.0	-	35	85	45	30	1
PS BT50 60° M24 MAS2 B	M24	23	17	25.0	6.0	35	85	45	30	1
PS BT50 60° M24 MAS2 O B	M24	23	17	25.0	6.0	35	85	45	30	2
PS BT50 90° M24 MAS3	M24	23	17	25.0	-	35	85	45	90	1
PS BT50 90° M24 MAS3 B	M24	23	17	25.0	6.0	35	85	45	90	1
PS BT50 90° M24 MAS3 O B	M24	23	17	25.0	6.0	35	85	45	90	2

"O" = O-Ring on dimension d4

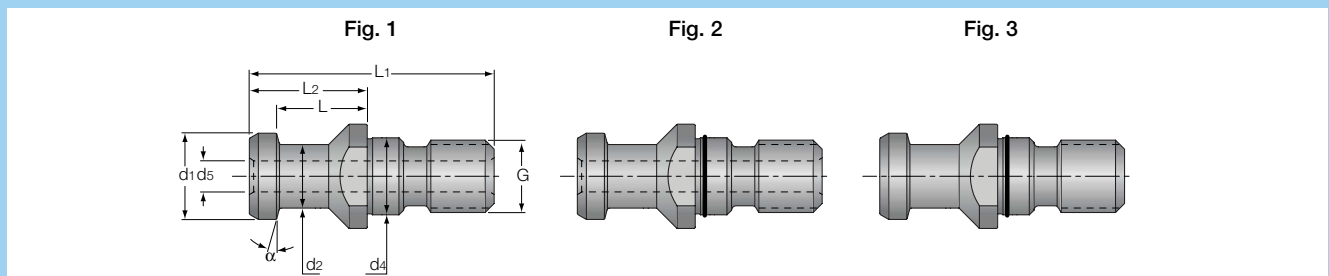
"B" = internal coolant

ACCESSORIES – PULL STUD - BT-JIS/ANSI - METRIC



Designation	G	d ₁	d ₂	d ₄	d ₅	L	L ₁	L ₂	a°	Fig.
PS BT30 15° M12 JIS B	M12	12.00	8.0	13	4.0	18.4	43.0	23.4	15	1
PS BT40 15° M16 JIS B	M16	19.00	14.0	17	5.5	23	54.0	29.0	15	1
PS BT40 15° M16 JIS O B	M16	19.00	14.0	17	5.5	23	54.0	29.0	15	2
PS BT40 15° M16 JIS O B O	M16	19.00	14.0	17	5.5	23	54.0	29.0	15	3
PS BT50 15° M24 JIS B	M24	28.00	21.0	25	8.0	25	74.0	34.0	15	1
PS BT50 15° M24 JIS O B	M24	28.00	21.0	25	8.0	25	74.0	34.0	15	2
PS BT50 15° M24 JIS O B O	M24	28.00	21.0	25	8.0	25	74.0	34.0	15	3
PS BT40 45° M16 MAZAK B	M16	18.79	12.4	17	7.0	14.026	44.1	19.1	45	1
PS BT50 45° M24 MAZAK B	M24	28.95	20.8	25	8.0	17.58	65.2	25.2	45	1

ACCESSORIES – PULL STUD - DIN69872/ISO 7388 - METRIC

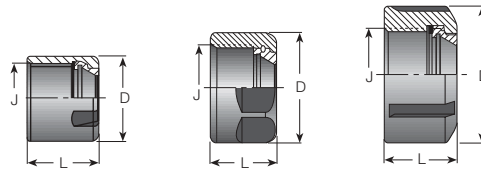


Designation	G	d ₁	d ₂	d ₄	d ₅	L	L ₁	L ₂	a°	Fig.
PS SK30 15° M12 DIN	M12	13	9	13	-	19	44	24	15	1
PS SK40 15° M16 DIN	M16	19	14	17	-	20	54	26	15	1
PS SK40 15° M16 DIN O	M16	19	14	17	-	20	54	26	15	3
PS SK40 15° M16 DIN B	M16	19	14	17	7.0	20	54	26	15	1
PS SK40 15° M16 DIN O B	M16	19	14	17	7.0	20	54	26	15	2
PS SK50 15° M24 DIN	M24	28	21	25	-	25	74	34	15	1
PS SK50 15° M24 DIN O	M24	28	21	25	-	25	74	34	15	3
PS SK50 15° M24 DIN B	M24	28	21	25	11.5	25	74	34	15	1
PS CAT30 45° M12 ISO B	M12	13.35	9.3	13	4.75	8.13	34.0	11.80	45	1
PS CAT40 45° M16 ISO B	M16	18.95	12.9	17	7.35	11.15	44.5	16.40	45	1
PS CAT50 45° M24 ISO B	M24	29.10	19.6	25	8	17.95	65.5	25.55	45	1

"O" = O-Ring on dimension d₄

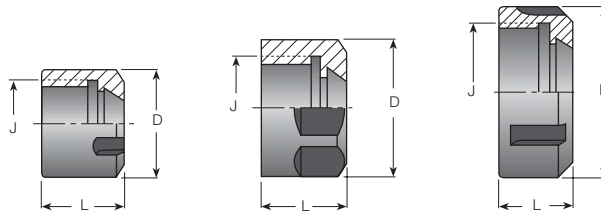
"B" = internal coolant

ACCESSORIES - ER CLAMPING NUT DIN 6499 - METRIC



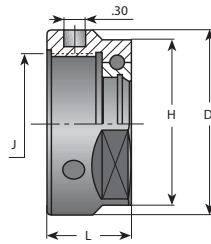
Designation	D	L	J	Kg•m	Lb•in
NUTER16 TOP Mini	22	18	M19X1.0	4	347
NUT ER16 TOP	28	17	M22X1.5	7	608
NUT ER20 TOP	34	19	M25X1.5	12	1042
NUT ER25 TOP	42	20	M32X1.5	20	1736
NUT ER32 TOP	50	22	M40X1.5	22	1910
NUT ER40 TOP	63	25	M50X1.5	25	2170

ACCESSORIES - ER-UM & MINI CLAMPING NUT DIN 6499 - METRIC



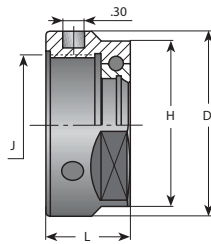
Designation	D	L	J	Kg•m	Lb•in
NUT ER11 Mini	16	10.8	M13X0.75	3	260
NUT ER11 UM	19	11.3	M14X0.75	5	434
NUT ER16 Mini	22	18.0	M19X1.0	4	347
NUT ER16 UM	28	17.0	M22X1.5	7	608
NUT ER20 Mini	28	19.0	M24X1.0	8	694
NUT ER20 UM	34	19.0	M25X1.5	12	1042
NUT ER25 MINI	35	20.0	M30X1.0	10	868
NUT ER25 UM	42	20.0	M32X1.5	20	1736
NUT ER32 UM	50	22.0	M40X1.5	22	1910
NUT ER40 UM	63	25.0	M50X1.5	25	2170
NUT ER50 UM	78	35.0	M64X2.0	35	3038

■ ACCESSORIES - CLAMPING NUT



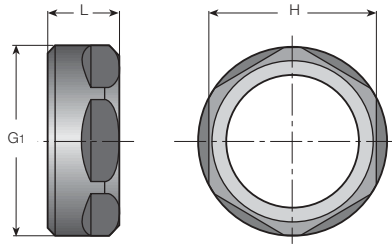
Designation	D	L	H	J
NUT TG100	2.44	1.14	2.25	1-7/8-12 ACME 26

■ ACCESSORIES - CLAMPING NUT



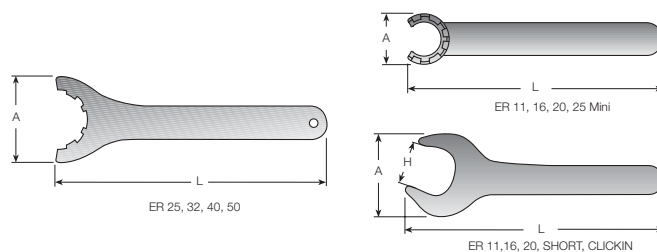
Designation	D	L	H	J
NUT TG100	2.44	1.14	2.25	1-7/8-12 ACME 26

ACCESSORIES - NUT E32 SHORTIN - METRIC



Designation	H	L	G ₁	Kgxm
NUT ER20 SHORT	22	10.7	M25X1.5	12
NUT ER32 SHORT	36	15.0	M40X1.5	22
NUT ER40 SHORT	46	16.0	M50X1.5	25

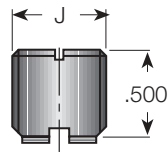
■ ACCESSORIES - WRENCH FOR ER DIN 6499 - METRIC



Designation	A	H	L
WRENCH ER11 Mini	16.8	—	295
WRENCH ER11	32	17	295
WRENCH ER16 Mini	22.5	—	117
WRENCH ER16	42	25	143
WRENCH ER20 Mini	28	—	128
WRENCH ER20	54	30	172
WRENCH ER25 Mini	36	—	130
WRENCH ER25	70	—	207
WRENCH ER32	78	—	255
WRENCH ER40	95	—	285
WRENCH ER50	110	—	350
WRENCH ER20 SHORT	48	22	260
WRENCH ER32 SHORT	36	74	303
WRENCH ER40 SHORT	46	93	378

ACCESSORIES - STANDARD PRESET SCREW FOR ER COLLET CHUCK

Fig. 1

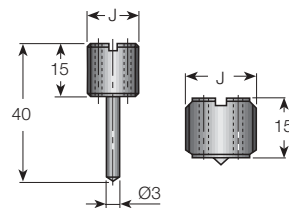


Designation	J	Fig.
PRESET SCREW (Inch)		
PRESET TG100 1-1/8x16 L.H.	UNC 1-1/8x16 L.H.	1

ACCESSORIES - PRESET SCREW WITH COOLANT HOLE FOR ER COOLIT SEALED COLLETS - METRIC

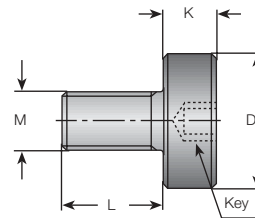
Fig. 4

Fig. 3



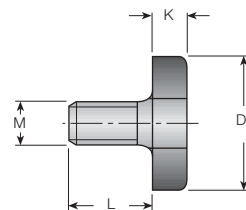
Designation	J	Fig.
PRESET ER-JET 8X1.0	M8X1.0	3
PRESET ER-JET 8X1.25	M8X1.25	3
PRESET ER-JET 10X1.5	M10X1.5	3
PRESET ER-JET 12X1.0	M12X1.0	3
PRESET ER-JET 12X1.75L	M12X1.75	4
PRESET ER-JET 12X1.75	M12X1.75	3
PRESET ER-JET 14X1.0	M14X1.0	3
PRESET ER-JET 16X2	M16X2	3
PRESET ER-JET 16X2L	M16X2	4
PRESET ER-JET 18X1.0	M18X1.0	3
PRESET ER-JET 18X1.5	M18X1.5	3
PRESET ER-JET 18X1.5L	M18X1.5	4
PRESET ER-JET 22X1.5	M22X1.5	3
PRESET ER-JET 22X1.5L	M22X1.5	4
PRESET ER-JET 28X1.5	M28X1.5	3

■ ACCESSORIES - LOCK SCREW FOR SHELL MILL HOLDER



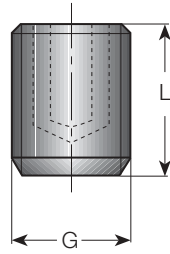
Designation	Shell Mill	M	D ₂	key	K	L
SCREW 1/4-28 SEM 1/2	1/2	1/4-28	.656	.250	.312	.719
SCREW 3/8-24 SEM 3/4	3/4	3/8-24	.890	.312	.390	.719
SCREW 1/2-20 SEM 1	1	1/2-20	1.187	.312	.484	.719
SCREW 5/8-18 SEM 1-1/4	1-1/4	5/8-18	1.500	.312	.516	.875
SCREW 3/4-16 SEM 1-1/2	1-1/2	3/4-16	1.875	.500	.516	.937
SCREW 1-14 SEM 2	2	1-14	2.484	.500	.516	.937
SCREW 1-14 SEM 2-1/2	2-1/2	1-14	3.125	.500	.516	1.375

■ ACCESSORIES - LOCK SCREW FOR SHELL MILL HOLDER - METRIC



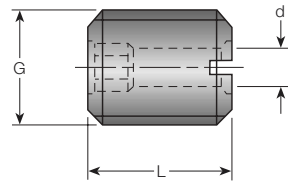
Designation	Shell Mill	M	D ₂	K	L
M 8 CLAMP SCREW SEM 16	16	M8	20	6	16
M 10 CLAMP SCREW SEM 22	22	M10	28	7	18
M 12 CLAMP SCREW SEM 27	27	M12	35	8	22
M 16 CLAMP SCREW SEM 32	32	M16	42	9	26
M 20 CLAMP SCREW SEM 40	40	M20	52	10	30
M 24 CLAMP SCREW SEM 50	50	M24	63	12	36

ACCESSORIES - LOCK SCREW FOR ENDMILL HOLDER



Designation	G	L	Used for Shanks
SCREW 1/4-28x.313 EM	1/4-28	.313	3/16, 1/4
SCREW 3/8-24x.4375 EM	3/8-24	.438	3/8
SCREW 7/16-20x.438 EM	7/16-20	.438	1/2
SCREW 1/2-20x.500 EM	1/2-20	.500	5/8
SCREW 5/8-18x.500 EM	5/8-18	.500	3/4, 7/8
SCREW 3/4-16x.625 EM	3/4-16	.625	1, 1-1/4, 1-1/2
SCREW 1-1/4x7/8 EM	1-14	.875	2
SCREW 1-1/4x1.250 EM	1-14	1.250	2-1/2

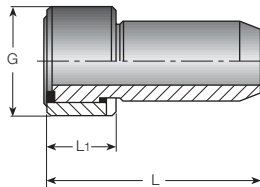
■ ACCESSORIES - PRESET SCREW FOR SRKIN THERMAL SHRINK COLLETS - METRIC



Designation	G	L	d	Used for Shanks	Hex key
PRESET SCREW M 5X20 B	M 5X0.8	20	2.1	EM E / SRKIN	2.5
PRESET SCREW M 6X20 B	M 6X1	20	2.5	EM E / SRKIN	3.0
PRESET SCREW M 8X20 B	M 8X1.25	20	3.5	EM E / SRKIN	4.0
PRESET SCREW M10X18 B	M 10X1.5	18	4.5	EM E / SRKIN	5.0
PRESET SCREW M12X18 B	M 12X1.75	18	5.5	EM E / SRKIN	6.0
PRESET SCREW M16X20 B	M 16X2	20	7.5	EM E / SRKIN	8.0
PRESET SCREW M16X25 B	M 16X2	25	7.5	SRKIN	8.0
PRESET SCREW M20X20 B	M 20X2.5	20	6.0	EM E	6.0
PRESET SCREW M20X25 B	M 20X2	25	9.5	EM E	10.0

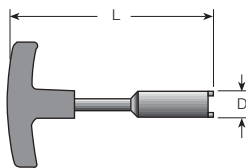


■ ACCESSORIES - HSK COOLING TUBE - METRIC



Designation	HSK-A	L	L ₁	G
COOLING TUBE HSK A 40	40	29.1	7.5	M12X1
COOLING TUBE HSK A 50	50	32.7	9.5	M16X1
COOLING TUBE HSK A 63	63	36.0	11.5	M18X1
COOLING TUBE HSK A 80	80	36.6	13.5	M20X1.5
COOLING TUBE HSK A 100	100	43.6	15.5	M24X1.5

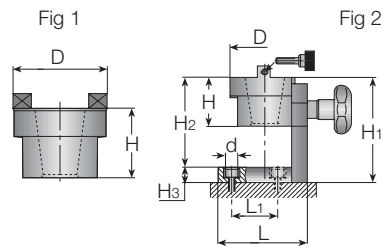
■ ACCESSORIES - WRENCH FOR HSK COOLING TUBE - METRIC



Designation	HSK-A	D	L
WRENCH COOL TUBE HSK 40	40	11.0	120
WRENCH COOL TUBE HSK 50	50	15.0	120
WRENCH COOL TUBE HSK 63	63	17.0	122
WRENCH COOL TUBE HSK 80	80	18.5	186
WRENCH COOL TUBE HSK100	100	22.0	141

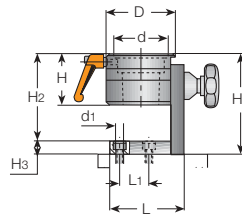
ACCESSORIES - TOOL CLAMP FIXTURE

FIXTURE FOR ISO, DIN 69871 AND BT MAS-403 TOOL SHANK



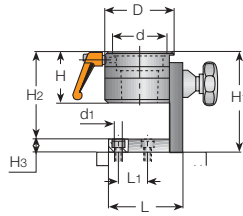
Designation	D	H	H ₁	H ₂	H ₃	L	L ₁	d	figure
TOOL CLAMP 30 ROTARY	2.76	2.20	5.00	4.30	.75	4.10	1.57	.49	2
TOOL CLAMP 40 ROTARY	3.23	2.20	5.00	4.30	.75	4.10	1.57	.49	2
TOOL CLAMP 50 ROTARY	4.06	2.80	6.70	5.95	.75	5.67	3.35	.49	2
TOOL CLAMP 30 FIX	3.23	2.28							1
TOOL CLAMP 40 FIX	3.23	2.28							1
TOOL CLAMP 50 FIX	4.06	2.80							1

ACCESSORIES - MULTI CLAMP HSK E/F ROTARY FIXTURE FOR HSK-E/F TYPE SHANK



Designation	D	d	d ₁	L	L ₁	H	H ₁	H ₂	H ₃
MULTI CLAMP 50 A/C	3.23	1.97	.49	4.09	1.57	2.83	5.59	4.84	.75
MULTI CLAMP 63 A/C	3.74	2.48	.49	4.09	1.57	2.83	5.59	4.84	.75
MULTI CLAMP 100 A/C	5.12	3.94	.49	5.67	3.35	3.54	7.00	6.26	.75

ACCESSORIES - MULTI-CLAMP HSK A/C ROTARY FIXTURE FOR HSK-A/C TYPE SHANK



Designation	D	d	d ₁	L	L ₁	H	H ₁	H ₂	H ₃
MULTI CLAMP 40 E/F	2.89	1.57	.49	4.09	1.57	2.17	4.92	4.17	.75
MULTI CLAMP 50 E/F	2.89	1.97	.49	4.09	1.57	2.17	4.92	4.17	.75
MULTI CLAMP 63 E/F	4.20	2.48	.49	5.67	3.35	2.76	4.50	3.75	.75

■ EASYLOCK - ELECTRICAL NUT-CLAMP TORQUE CONTROL DEVICE

- Ensures controlled clamping of cutting tools
- Maintains collet chuck accuracy
- Easy clamping and unclamping of cutting tools
- Handy set for various collet chuck sizes
- Main spindle taper #50
- Suitable for main shank standards #30, #40, #50, HSK 63, HSK 100

Table Model

Specifications

Power Supply:	3 phase 440/460 50/60 HZ
Weight:	Table model - 190 lbs. Trolley (optional) - 33 lbs.

EasyLock Unit/Trolley

Designation

EasyLock T.C. USA
EasyLock Trolley

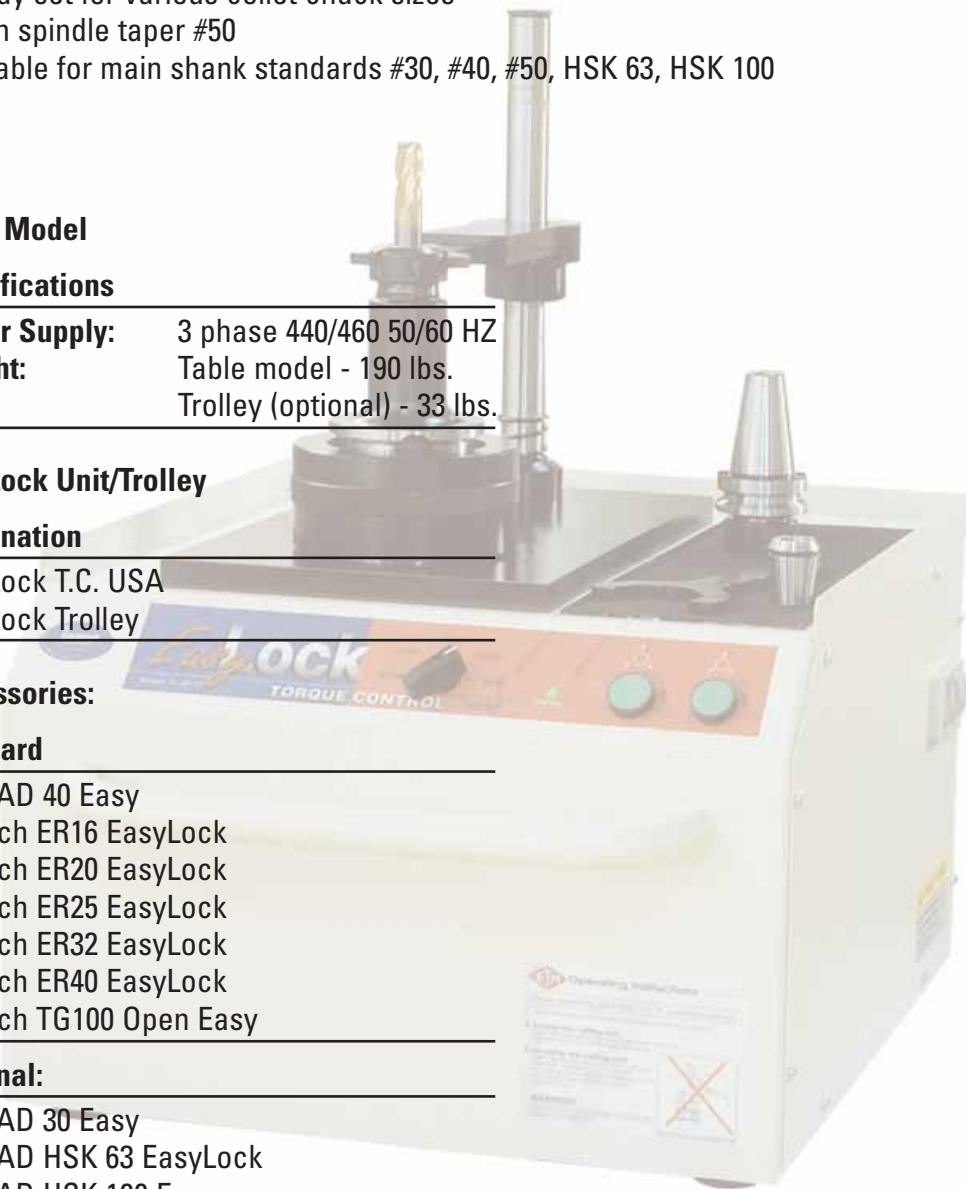
Accessories:

Standard

TP50 AD 40 Easy
Wrench ER16 EasyLock
Wrench ER20 EasyLock
Wrench ER25 EasyLock
Wrench ER32 EasyLock
Wrench ER40 EasyLock
Wrench TG100 Open Easy

Optional:

TP40 AD 30 Easy
TP50 AD HSK 63 EasyLock
TP50 AD HSK 100 Easy
Wrench ER50 EasyLock



EASYLOCK - ELECTRICAL NUT-CLAMP TORQUE CONTROL DEVICE

Power Clamping Unit for Collet Chucks

1. Assemble the collet and cutting tool. By hand, place the nut onto the collet chuck.

2. Mount the collet chuck into the unit spindle.

Power Lamp

6. **To Unclamp** – Push and hold in the unclamp button until the collet chuck is totally open.



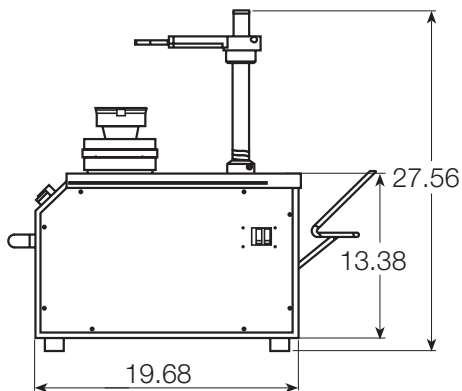
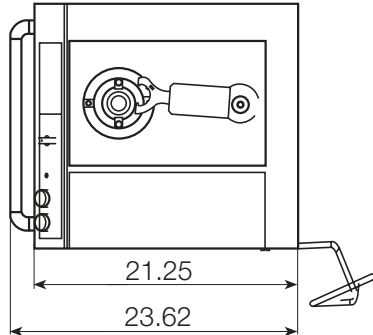
3. Choose the correct wrench size. Mount it on the wrench holder.

4. Place the wrench on the collet chuck nut.

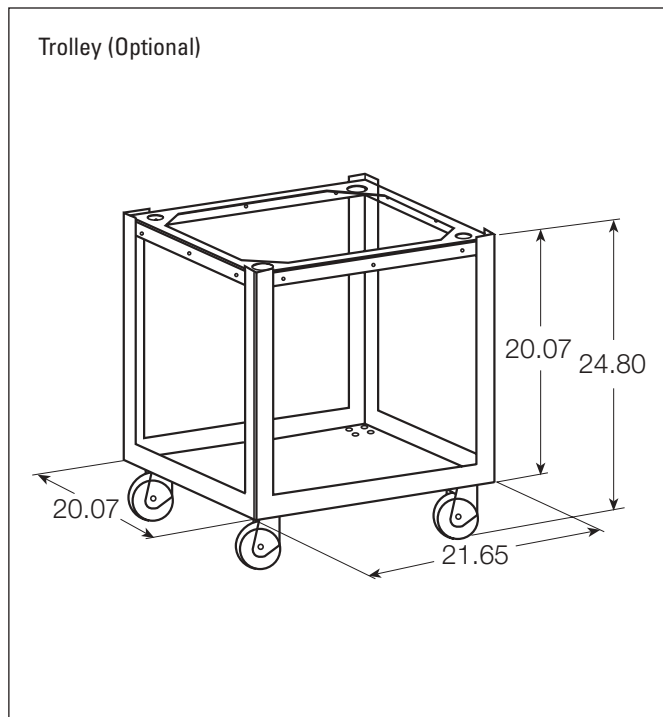
5. Ensure that main power switch is on and that the power supply cable is connected.

6. **To Clamp** – Push and hold in the clamp button until the bottom light goes off.

7. Torque Selector



Trolley (Optional)



Ingersoll



D'ANDREA TOOL HOLDERS

Cutting Tools



Member IMC Group
Ingersoll
Cutting Tools

■ MONOFORCE - HIGH PRECISION ULTRA-TIGHT TOOLHOLDER

MONOforce is a new addition to D'Andrea range of tool holders, which complements the existing balanceable FORCE chuck from Toprun family. This new chuck provides an economical and innovative solution for tool holding, where precision and high clamping forces for the cutting tool are required.

MONOforce is available with tapers conforming to DIN 69871, MAS-BT and CAT both in ISO 40 and 50 sizes, and also HSK 63. The chuck accepts reduction bushes to suit cutters having shank sizes ranging from 3 mm. to 25 mm.

MONOforce can also be supplied in kit form, which includes of a set of reduction bushes and clamping wrench. **MONOforce** toolholders are manufactured by D'Andrea in their modern manufacturing plants in Italy.



INSTRUCTIONS

- After lightly tightening by hand, tighten further by spanner (fig.1).
- Tighten by hand. Don't use hammer!
- Only for finishing operations and when higher run-out accuracy is required, return chuck ring just a little (1-2°) after face contact (fig. 2).
- Don't clamp without end mill



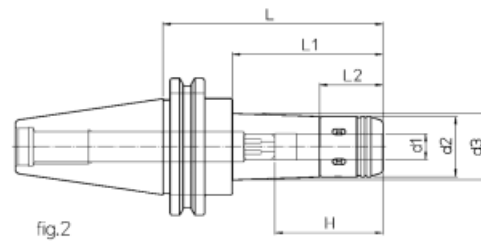
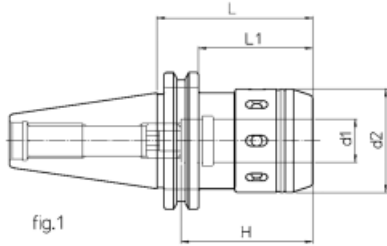
fig.1



fig.2

CAT – MONOFORCE HIGH PRECISION ULTRA TIGHT TOOLHOLDER

Taper Size
CAT-40 and 50



CAT	REF.	CODE	d1	d2	d3	H	L	L1	L2	kg	fig.
40	CAT40 UNC MF1/2 2.50	71CAT-40-MF1306	1/2"	1.10"	-	1.85"	2.50"	1.25"	-	0.6	1
40	CAT40 UNC MF1/2 4.00	71CAT-40-MF1310	1/2"	1.10"	1.21"	1.85"	4.00"	2.75"	1.16"	1.2	2
40	CAT40 UNC MF3/4 3.00	71CAT-40-MF1907	3/4"	1.89"	-	2.48"	3.00"	2.25"	-	1.1	1
40	CAT40 UNC MF3/4 5.00	71CAT-40-MF1912	3/4"	1.89"	-	2.48"	5.00"	4.25"	-	1.7	2
40	CAT40 UNC MF1-1/4 4.25	71CAT-40-MF3110	1-1/4"	2.59"	-	3.15"	4.25"	-	-	1.6	1
40	CAT40 UNC MF1-1/4 5.50	71CAT-40-MF3114	1-1/4"	2.59"	-	3.15"	5.50"	-	-	2.5	2
50	CAT50 UNC MF3/4 3.00	71CAT-50-MF1907	3/4"	1.89"	-	2.48"	3.00"	1.56"	-	2.3	1
50	CAT50 UNC MF3/4 6.00	71CAT-50-MF1915	3/4"	1.89"	-	2.48"	6.00"	4.56"	-	2.9	2
50	CAT50 UNC MF1-1/4 3.25	71CAT-50-MF3108	1-1/4"	2.59"	-	3.54"	3.25"	2.50"	-	2.8	1
50	CAT50 UNC MF1-1/4 6.50	71CAT-50-MF3116	1-1/4"	2.59"	-	3.54"	6.50"	5.75"	-	3.9	2

CAT - MONOd' - COLLET CHUCK HOLDER ER DIN 6499

Taper Size
CAT-40

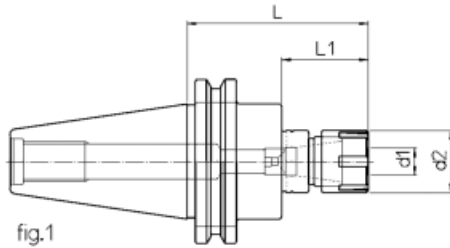


fig.1

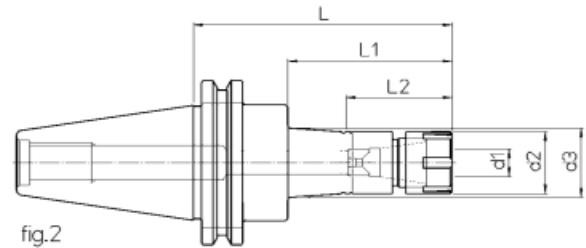
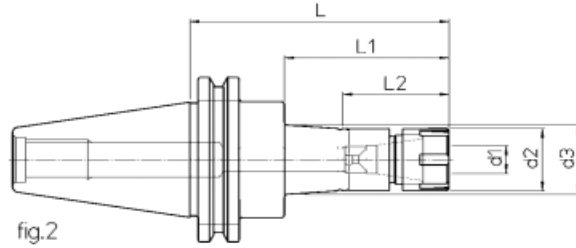
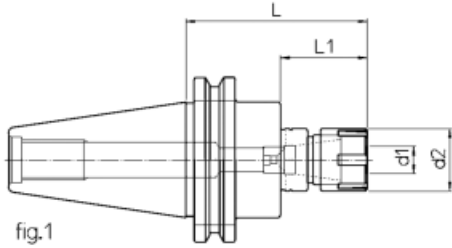


fig.2

CAT	REF.	CODE	TYPE	d ₁	d ₂	d ₃	L	L ₁	L ₂	kg	fig.
40	CAT40 UNC ER16 2.75	71CAT-40-ER1607	ER 16	.019-.40"	.94"	-	2.75"	1.31"	-	0.7	1
40	CAT40 UNC ER16 4.00	71CAT-40-ER1610	ER 16	.019-.40"	.94"	1.06"	4.00"	2.56"	1.61"	0.8	2
40	CAT40 UNC ER16 6.00	71CAT-40-ER1616	ER 16	.019-.40"	.94"	1.34"	6.00"	4.56"	1.61"	1.8	2
40	CAT40 UNC ER25 2.75	71CAT-40-ER2507	ER 25	.039-.63"	1.65"	-	2.75"	1.99"	-	0.9	1
40	CAT40 UNC ER25 4.00	71CAT-40-ER2510	ER 25	.039-.63"	1.65"	-	4.00"	2.56"	-	1.4	1
40	CAT40 UNC ER25 6.00	71CAT-40-ER2516	ER 25	.039-.63"	1.65"	-	6.00"	4.56"	-	1.9	1
40	CAT40 UNC ER32 3.00	71CAT-40-ER3207	ER 32	.078-.79"	1.96"	-	3.00"	2.24"	-	0.9	1
40	CAT40 UNC ER32 4.25	71CAT-40-ER3211	ER 32	.078-.79"	1.96"	-	4.25"	2.81"	-	1.5	1
40	CAT40 UNC ER32 6.00	71CAT-40-ER3216	ER 32	.078-.79"	1.96"	-	6.00"	4.56"	-	2.5	1
40	CAT40 UNC ER40 3.25	71CAT-40-ER4008	ER 40	.118-1.02"	2.48"	-	3.25"	2.49"	-	1.1	1
40	CAT40 UNC ER40 4.75	71CAT-40-ER4012	ER 40	.118-1.02"	2.48"	-	4.75"	3.31"	-	2.1	1
40	CAT40 UNC ER40 6.00	71CAT-40-ER4016	ER 40	.118-1.02"	2.48"	-	6.00"	4.56"	-	3.1	1

CAT - MONOd' - COLLET CHUCK HOLDER ER DIN 6499

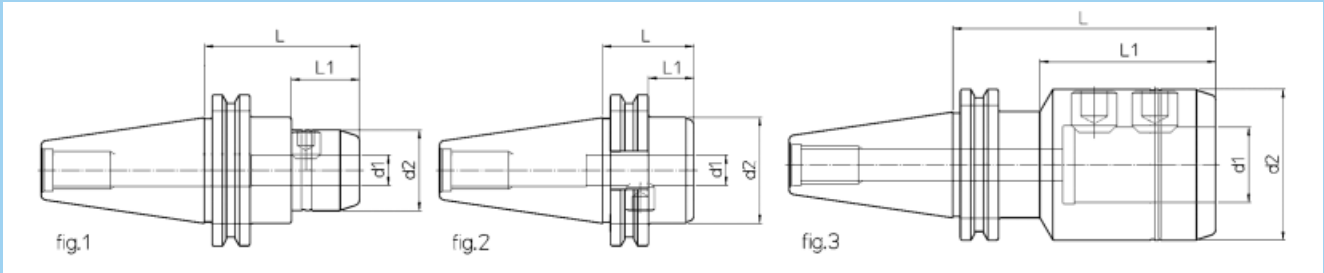
Taper Size
CAT-50



CAT	REF.	CODE	TYPE	d ₁	d ₂	d ₃	L	L ₁	L ₂	kg	fig.
50	CAT50 UNC ER16 4.00	71CAT-50-ER1610	ER 16	.019-.40"	.94"	1.06"	4.00"	2.56"	1.61"	2.3	2
50	CAT50 UNC ER16 6.00	71CAT-50-ER1616	ER 16	.019-.40"	.94"	1.34"	6.00"	4.56"	1.61"	3.1	2
50	CAT50 UNC ER25 2.75	71CAT-50-ER2507	ER 25	.039-.63"	1.65"	-	2.75"	1.99"	-	2.3	1
50	CAT50 UNC ER25 4.00	71CAT-50-ER2510	ER 25	.039-.63"	1.65"	-	4.00"	2.56"	-	2.6	1
50	CAT50 UNC ER25 6.00	71CAT-50-ER2516	ER 25	.039-.63"	1.65"	-	6.00"	4.56"	-	3.4	1
50	CAT50 UNC ER32 3.00	71CAT-50-ER3207	ER 32	.078-.79"	1.96"	-	3.00"	2.24"	-	2.7	1
50	CAT50 UNC ER32 4.25	71CAT-50-ER3211	ER 32	.078-.79"	1.96"	-	4.25"	2.81"	-	3.2	1
50	CAT50 UNC ER32 6.00	71CAT-50-ER3216	ER 32	.078-.79"	1.96"	-	6.00"	4.56"	-	3.8	1
50	CAT50 UNC ER40 4.00	71CAT-50-ER4010	ER 40	.118-1.02"	2.48"	-	4.00"	2.56"	-	3.6	1
50	CAT50 UNC ER40 6.00	71CAT-50-ER4016	ER 40	.118-1.02"	2.48"	-	6.00"	4.56"	-	4.1	1

CAT - MONOd' - WELDON TOOLHOLDER WD-DIN 1835-B

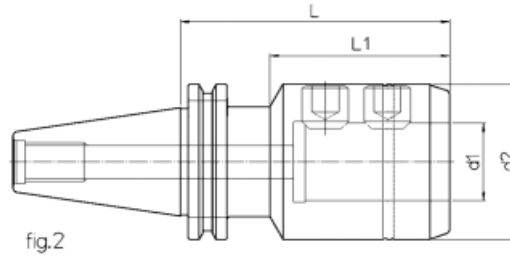
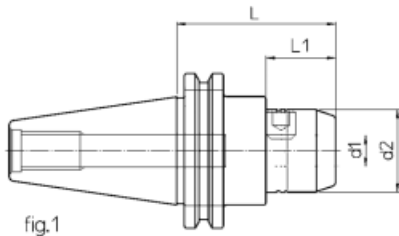
Taper Size
CAT-40



CAT	REF.	CODE	d _{1H5}	d ₂	L	L ₁	kg	fig.
40	CAT40 UNC WD1/4 2.50	71CAT-40-WD0606	1/4"	.79"	2.50"	1.06"	0.9	1
40	CAT40 UNC WD1/4 4.00	71CAT-40-WD0610	1/4"	.79"	4.00"	2.56"	1.1	1
40	CAT40 UNC WD3/8 2.50	71CAT-40-WD0906	3/8"	1.06"	2.50"	1.06"	1	1
40	CAT40 UNC WD3/8 4.00	71CAT-40-WD0910	3/8"	1.06"	4.00"	2.56"	1.2	1
40	CAT40 UNC WD3/8 6.00	71CAT-40-WD0915	3/8"	1.06"	6.00"	4.56"	1.4	1
40	CAT40 UNC WD1/2 1.50	71CAT-40-WD1304	1/2"	1.76"	1.50"	.74"	1.1	2
40	CAT40 UNC WD1/2 2.50	71CAT-40-WD1306	1/2"	1.33"	2.50"	1.06"	1.2	1
40	CAT40 UNC WD1/2 4.00	71CAT-40-WD1310	1/2"	1.33"	4.00"	2.56"	1.5	1
40	CAT40 UNC WD1/2 6.00	71CAT-40-WD1315	1/2"	1.33"	6.00"	4.56"	1.8	1
40	CAT40 UNC WD5/8 1.50	71CAT-40-WD1504	5/8"	1.76"	1.50"	.74"	1	2
40	CAT40 UNC WD5/8 3.00	71CAT-40-WD1507	5/8"	1.65"	3.00"	1.56"	1.4	1
40	CAT40 UNC WD5/8 4.50	71CAT-40-WD1511	5/8"	1.65"	4.50"	3.06"	1.6	1
40	CAT40 UNC WD5/8 6.00	71CAT-40-WD1515	5/8"	1.65"	6.00"	4.56"	2.1	1
40	CAT40 UNC WD3/4 1.75	71CAT-40-WD1904	3/4"	1.76"	1.75"	.99"	1.2	2
40	CAT40 UNC WD3/4 3.00	71CAT-40-WD1907	3/4"	1.89"	3.00"	1.56"	1.5	1
40	CAT40 UNC WD3/4 4.50	71CAT-40-WD1911	3/4"	1.89"	4.50"	3.06"	2	1
40	CAT40 UNC WD3/4 6.00	71CAT-40-WD1915	3/4"	1.89"	6.00"	4.56"	2.5	1
40	CAT40 UNC WD1 1.75	71CAT-40-WD2604	1"	1.76"	1.75"	.99"	1.5	2
40	CAT40 UNC WD1 4.00	71CAT-40-WD2610	1"	2.20"	4.00"	2.56"	2.1	3
40	CAT40 UNC WD1 6.00	71CAT-40-WD2615	1"	2.20"	6.00"	4.56"	3.3	3
40	CAT40 UNC WD1-1/4 2.00	71CAT-40-WD3105	1-1/4"	2.25"	2.00"	1.24"	1.3	2
40	CAT40 UNC WD1-1/4 4.00	71CAT-40-WD3111	1-1/4"	2.50"	4.00"	2.56"	2.4	3
40	CAT40 UNC WD1-1/4 6.00	71CAT-40-WD3115	1-1/4"	2.50"	6.00"	4.56"	3.8	3

CAT - MONOd' - WELDON TOOLHOLDER WD-DIN 1835-B

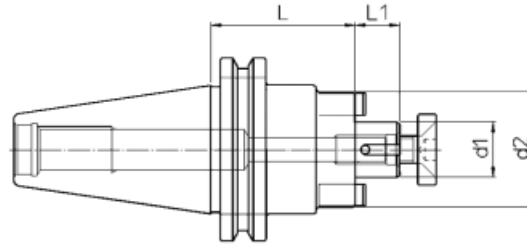
Taper Size
CAT-50



CAT	REF.	CODE	d ₁ H5	d ₂	L	L ₁	kg	fig.
50	CAT50 UNC WD1/4 2.50	71CAT-50-WD0606	1/4"	.79"	2.50"	1.06"	2.1	1
50	CAT50 UNC WD1/4 4.00	71CAT-50-WD0610	1/4"	.79"	4.00"	2.56"	2.3	1
50	CAT50 UNC WD1/4 6.00	71CAT-50-WD0615	1/4"	.79"	6.00"	4.56"	2.4	1
50	CAT50 UNC WD3/8 2.50	71CAT-50-WD0906	3/8"	1.06"	2.50"	1.06"	2.3	1
50	CAT50 UNC WD3/8 4.00	71CAT-50-WD0910	3/8"	1.06"	4.00"	2.56"	2.4	1
50	CAT50 UNC WD3/8 6.00	71CAT-50-WD0915	3/8"	1.06"	6.00"	4.56"	2.6	1
50	CAT50 UNC WD1/2 2.50	71CAT-50-WD1306	1/2"	1.33"	2.50"	1.06"	2.4	1
50	CAT50 UNC WD1/2 4.00	71CAT-50-WD1310	1/2"	1.33"	4.00"	2.56"	2.6	1
50	CAT50 UNC WD1/2 6.00	71CAT-50-WD1315	1/2"	1.33"	6.00"	4.56"	3	1
50	CAT50 UNC WD5/8 3.00	71CAT-50-WD1507	5/8"	1.65"	3.00"	1.56"	2.6	1
50	50 CAT50 UNC WD5/8 4.50	71CAT-50-WD1511	5/8"	1.65"	4.50"	3.06"	3	1
50	CAT50 UNC WD5/8 6.00	71CAT-50-WD1515	5/8"	1.65"	6.00"	4.56"	3.5	1
50	CAT50 UNC WD3/4 3.00	71CAT-50-WD1907	3/4"	1.89"	3.00"	1.56"	2.7	1
50	CAT50 UNC WD3/4 4.50	71CAT-50-WD1911	3/4"	1.89"	4.50"	3.06"	3.4	1
50	CAT50 UNC WD3/4 6.00	71CAT-50-WD1915	3/4"	1.89"	6.00"	4.56"	4	1
50	CAT50 UNC WD1 4.00	71CAT-50-WD2610	1"	2.20"	4.00"	2.56"	4.1	2
50	CAT50 UNC WD1 6.00	71CAT-50-WD2615	1"	2.20"	6.00"	4.56"	5.1	2
50	CAT50 UNC WD1-1/4 4.00	71CAT-50-WD3110	1-1/4"	2.50"	4.00"	2.56"	4.3	2
50	CAT50 UNC WD1-1/4 6.00	71CAT-50-WD3115	1-1/4"	2.50"	6.00"	4.56"	5.8	2
50	CAT50 UNC WD1-1/2 4.50	71CAT-50-WD3810	1-1/2"	2.95"	4.00"	3.06"	4.6	2
50	CAT50 UNC WD1-1/2 6.00	71CAT-50-WD3815	1-1/2"	2.95"	6.00"	4.56"	6.3	2

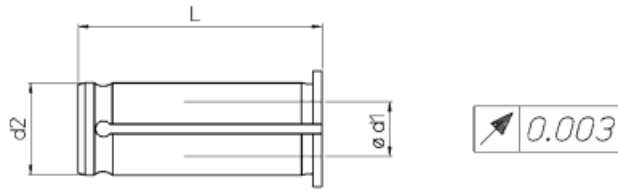
CAT - MONOd' - MILL HOLDER PF COOLANT THRU

Taper Size
CAT-40 and 50



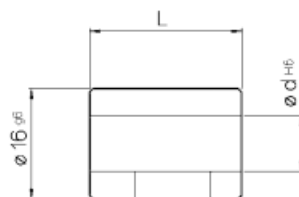
CAT	REF.	CODE	d ₁	d ₂	L	L ₁	kg
40	CAT40 UNC PF3/4 2.00	71CAT-40-PF1905	3/4"	1.57"	2.00"	.68"	0.7
40	CAT40 UNC PF3/4 4.00	71CAT-40-PF1910	3/4"	1.57"	4.00"	.68"	0.9
40	CAT40 UNC PF1 2.00	71CAT-40-PF2605	1"	1.96"	2.00"	.68"	0.9
40	CAT40 UNC PF1 4.00	71CAT-40-PF2610	1"	1.96"	4.00"	.68"	1.2
40	CAT40 UNC PF1-1/4 2.25	71CAT-40-PF3105	1-1/4"	2.36"	2.25"	.68"	1.5
40	CAT40 UNC PF1-1/4 4.00	71CAT-40-PF3110	1-1/4"	2.36"	4.00"	.68"	1.8
40	CAT40 UNC PF1-1/2 2.25	71CAT-40-PF3806	1-1/2"	2.75"	2.25"	.94"	2.6
40	CAT40 UNC PF1-1/2 4.00	71CAT-40-PF3810	1-1/2"	2.75"	4.00"	.94"	2.9
50	CAT50 UNC PF3/4 2.00	71CAT-50-PF1905	3/4"	1.57"	2.00"	.68"	2.3
50	CAT50 UNC PF3/4 4.00	71CAT-50-PF1910	3/4"	1.57"	4.00"	.68"	2.8
50	CAT50 UNC PF3/4 6.00	71CAT-50-PF1915	3/4"	1.57"	6.00"	.68"	4.5
50	CAT50 UNC PF1 2.00	71CAT-50-PF2605	1"	1.96"	2.00"	.68"	2.5
50	CAT50 UNC PF1 4.00	71CAT-50-PF2610	1"	1.96"	4.00"	.68"	3.1
50	CAT50 UNC PF1 6.00	71CAT-50-PF2615	1/2"	1.96"	6.00"	.68"	5.5
50	CAT50 UNC PF1-1/4 2.25	71CAT-50-PF3105	1-1/4"	2.36"	2.25"	.68"	3.4
50	CAT50 UNC PF1-1/4 4.00	71CAT-50-PF3110	1-1/4"	2.36"	4.00"	.68"	4
50	CAT50 UNC PF1-1/4 6.00	71CAT-50-PF3115	1-1/4"	2.36"	6.00"	.68"	6.5
50	CAT50 UNC PF1-1/2 2.25	71CAT-50-PF3806	1-1/2"	3.46"	2.25"	.94"	3.8
50	CAT50 UNC PF1-1/2 4.00	71CAT-50-PF3810	1-1/2"	3.46"	4.00"	.94"	4.3
50	CAT50 UNC PF1-1/2 6.00	71CAT-50-PF3815	1-1/2"	3.46"	6.00"	.94"	7.5

COLLETS FOR MONOFORCE



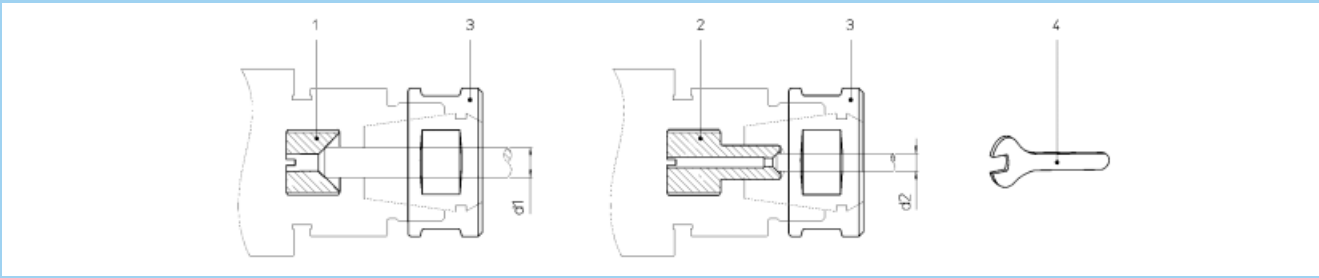
FORCE (d_2)	REF.	CODE	d_1	L
1/2"	RC 1/2.1/4	49 70 8 0013063	1/4"	1.73"
1/2"	RC 1/2.5/16	49 70 8 0013079	5/16"	1.73"
1/2"	RC 1/2.3/8	49 70 8 0013095	3/8"	1.73"
3/4"	RC 3/4.1/4	49 70 8 0019063	1/4"	1.97"
3/4"	RC 3/4.5/16	49 70 8 0019079	5/16"	1.97"
3/4"	RC 3/4.3/8	49 70 8 0019095	3/8"	1.97"
3/4"	RC 3/4.7/16	49 70 8 0019111	7/16"	1.97"
3/4"	RC 3/4.1/2	49 70 8 0019127	1/2"	1.97"
3/4"	RC 3/4.5/8	49 70 8 0019158	5/8"	1.97"
1-1/4"	RC 1-1/4.3/8	49 70 8 0031095	3/8"	2.48"
1-1/4"	RC 1-1/4.1/2	49 70 8 0031127	1/2"	2.48"
1-1/4"	RC 1-1/4.5/8	49 70 8 0031158	5/8"	2.48"
1-1/4"	RC 1-1/4.3/4	49 70 8 0031190	3/4"	2.48"
1-1/4"	RC 1-1/4.1	49 70 8 0031254	1"	2.48"

■ REDUCTIONS



REF.	CODE	L	Ø d H ₆
D04.16	20 056 01 16 04 0	23	4
D08.16	20 056 01 16 08 2	22	8
D10.16	20 056 01 16 10 0	23	10
D12.16	20 056 01 16 12 0	23	12

TOP RUN



REF.	CODE 1	d_1	CODE2	d_2	CODE3	CODE4
ER 16	20 108 20 10 001	5 ~ 10	20 108 20 10 002	1 ~ 4	20 104 19 100 01	20 127 150 2200
ER 25	20 108 20 18 001	8 ~ 16	20 108 20 18 002	2 ~ 7	20 104 30 100 02	20 127 150 3400
ER 32	20 108 20 22 001	8 ~ 20	20 108 20 22 002	3 ~ 7	20 104 40 150 01	20 127 150 4500
ER 40	20 108 20 28 001	9 ~ 26	20 108 20 28 002	4 ~ 8	20 104 50 150 01	20 127 150 5500







Ingersoll Cutting Tools for the Americas

Marketing & Technology Center

845 S. Lyford Road
Rockford, IL 61108-2749 U.S.A.
Tel: 815/387-6600
Fax: 815/387-6968
Email: info@ingersoll-imc.com
Internet: www.ingersoll-imc.com

Ingersoll Cutting Tool Ltd.

4510 Rhodes Drive, Unit #100
Windsor, Ontario N8W 5K5, Canada
Tel: 519/974-1019
Fax: 519/974-2260

Ingersoll Cutting Tools de México S.A. de C.V.

Carr. Saltillo Monterrey Km. 5.5, Local 2 y 3
Saltillo, Coahuila C.P. 25200, México
Tel: (844) 432-2546, (844) 432-2547
Fax: (844) 432-2544

Ingersoll Cutting Tools for Europe

Marketing & Technology Center

Ingersoll Werkzeuge GmbH
Kalteiche-Ring 21-25
35708 Haiger, Germany
Tel: 02773.742 0
Fax; 02773.742 812/814
Email: info@ingersoll-imc.de
Internet: www.ingersoll-imc.de