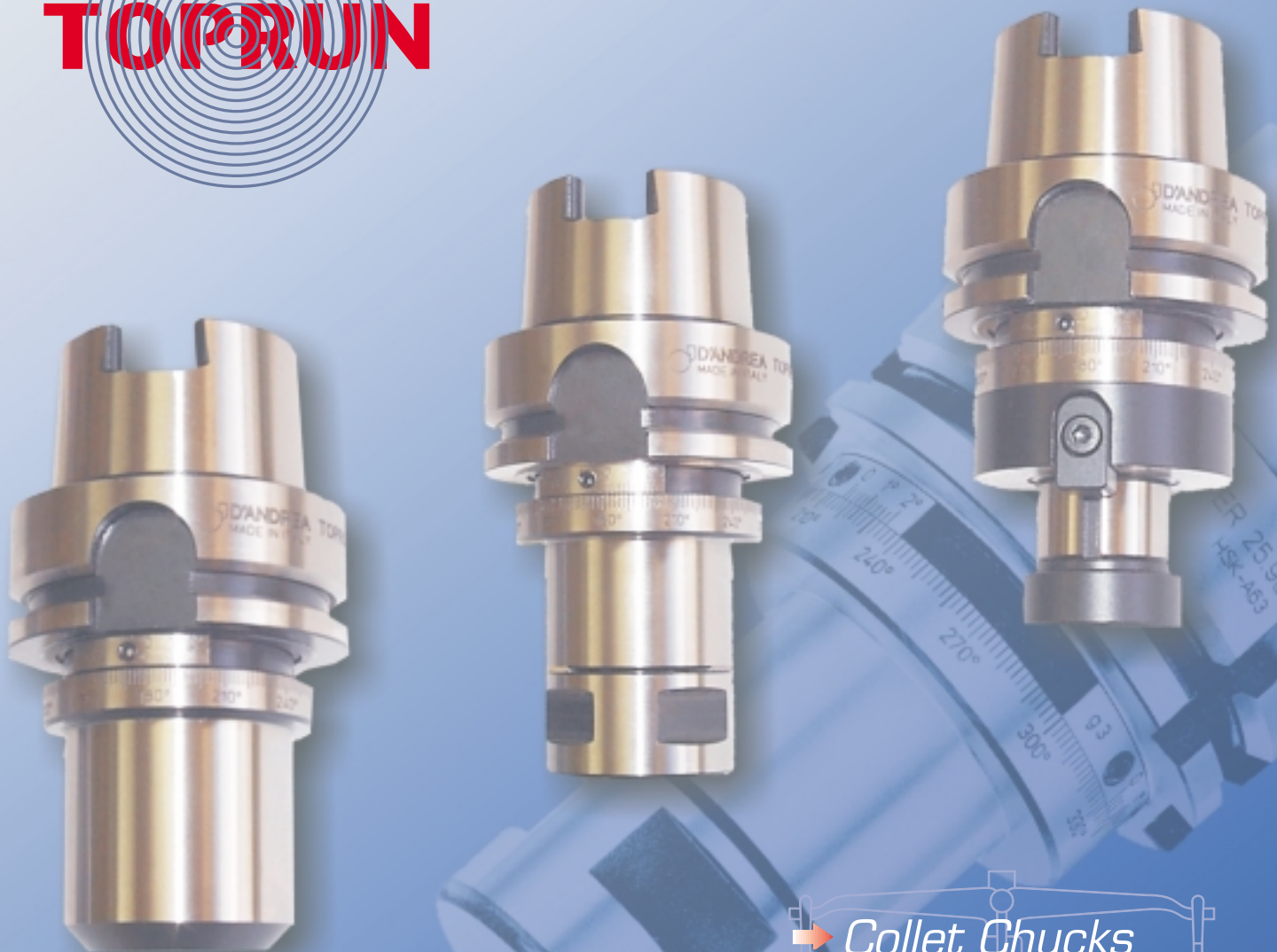
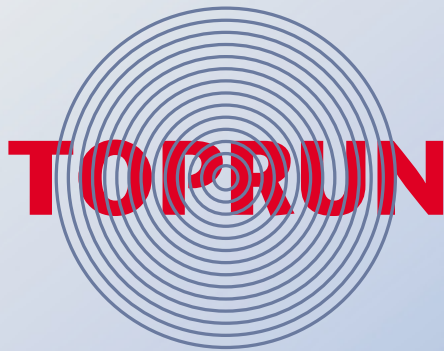


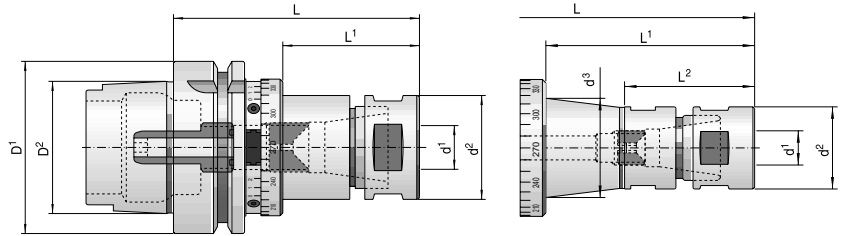
HSK-A63 INCH TOOLING & COLLET CHUCKS

BALANCEABLE FOR
HIGH SPEED MACHINING



- ➔ *Collet Chucks*
- ➔ *End Mill Holders*
- ➔ *Shell Mill Holders*
- ➔ *Morse Taper Holders*
- ➔ *Tapping Chucks*

HSK COLLET CHUCKS



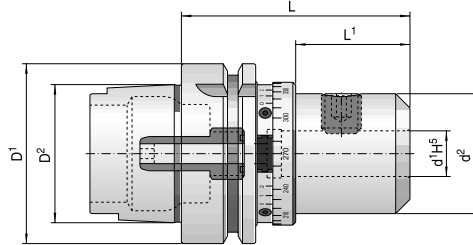
- **PRECISION TOLERANCES**
- **ACCURATE GRIPPING**
- **HIGH CONCENTRICITY**
- ➔ **ALLOW OPERATIONS AT HIGH SPINDLE SPEEDS FOR INCREASED CUTTING EFFICIENCY.**

DESIGNATION	Collet Type	d ¹ Inch (Metric)	d ²	d ³	L	L ¹	L ²	lbs.
HSK-E40 Collet Chucks			D ¹ = 1.575" (40mm)		D ² = 1.181" (30mm)			
HSK-E40CC-0016-TR	ER16	1/64" - 3/8" (0.5mm - 10mm)	.945	---	2.362	1.122	---	1.32
HSK-E40CC-0016L-TR				1.102	3.937	2.697	1.417	1.54
HSK-E40CC-0025-TR	ER25	1/32" - 5/8" (1mm - 16mm)	1.496	---	2.756	---	---	1.76
HSK-E50 Collet Chucks			D ¹ = 1.969" (50mm)		D ² = 1.496" (38mm)			
HSK-E50CC-0016-TR	ER16	1/64" - 3/8" (0.5mm - 10mm)	.945	---	2.756	1.221	---	1.54
HSK-E50CC-0016L-TR				1.142	3.937	2.402	1.496	1.76
HSK-E50CC-0025-TR	ER25	1/32" - 5/8" (1mm - 16mm)	1.496	---	2.756	1.221	---	2.20
HSK-A63 Collet Chucks			D ¹ = 2.480" (63mm)		D ² = 1.890" (48mm)			
HSK-A63CC-0016-TR	ER16	1/64" - 3/8" (0.5mm - 10mm)	.945	---	3.150	1.575	---	1.98
HSK-A63CC-0016L-TR				1.339	4.724	3.150	1.575	2.42
HSK-A63CC-0025-TR	ER25	1/32" - 5/8" (1mm - 16mm)	1.496	---	3.150	1.575	---	2.64
HSK-A63CC-0025L-TR				1.772	5.512	3.937	1.969	3.52
HSK-A63CC-0032-TR	ER32	5/64" - 3/4" (2mm - 20mm)	1.969	---	3.543	2.913	---	3.30
HSK-A80 Collet Chucks			D ¹ = 3.150" (80mm)		D ² = 2.362" (60mm)			
HSK-A80CC-0025-TR	ER25	1/32" - 5/8" (1mm - 16mm)	1.496	---	3.543	1.890	---	3.74
HSK-A80CC-0025L-TR				2.008	5.512	3.858	1.969	4.62
HSK-A80CC-0032-TR	ER32	5/64" - 3/4" (2mm - 20mm)	1.969	---	3.740	2.087	---	4.40
HSK-A80CC-0032L-TR				2.205	5.709	4.055	2.165	6.16
HSK-A80CC-0040-TR	ER40	1/8" - 1" (3mm - 26mm)	2.480	---	4.134	---	---	4.84
HSK-A100 Collet Chucks			D ¹ = 3.937" (100mm)		D ² = 2.953" (75mm)			
HSK-A100CC-0025-TR	ER25	1/32" - 5/8" (1mm - 16mm)	1.496	---	3.740	1.969	---	5.94
HSK-A100CC-0025L-TR				2.087	5.512	3.740	1.969	6.82
HSK-A100CC-0032-TR	ER32	5/64" - 3/4" (2mm - 20mm)	1.969	---	3.937	2.165	---	6.60
HSK-A100CC-0032L-TR				2.362	5.906	4.134	2.165	8.36
HSK-A100CC-0040-TR	ER40	1/8" - 1" (3mm - 26mm)	2.480	---	4.331	2.559	---	7.04
HSK-A100CC-0040L-TR				2.677	6.299	4.528	2.559	9.90

Other shank styles available

If balancing any of the above tools, it is recommended that our Ultra Precision Collets be used. For complete listing of Ultra Precision Collets, please refer to the back cover.

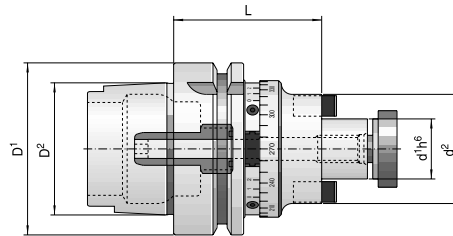
HSK-A63 END MILL HOLDERS



DESIGNATION	d ¹	d ²	L	L ¹	lbs.
<i>HSK-A63 End Mill Holders</i>			D ¹ = 2.480" (63mm) D ² = 1.890" (48mm)		
HSK-A63EM-0500-TR	.500	1.339	2.756	1.181	3.08
HSK-A63EM-0625-TR	.625	1.654	3.150	1.575	3.74
HSK-A63EM-0750-TR	.750	1.969	3.150	---	3.96
HSK-A63EM-1000-TR	1.000	2.480	4.331	---	5.28
HSK-A63EM-1250-TR	1.250	2.756	4.331	---	5.72

Metric sizes and other shank styles available

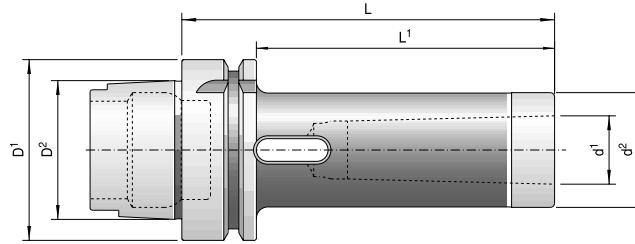
HSK-A63 SHELL MILL HOLDERS



DESIGNATION	d ¹	d ²	L	lbs.
<i>HSK-A63 Shell Mill Holders</i>			D ¹ = 2.480" (63mm) D ² = 1.890" (48mm)	
HSK-A63SM-0750-TR	.750	1.575	1.969	2.42
HSK-A63SM-1000-TR	1.000	1.969	2.165	2.86
HSK-A63SM-1250-TR	1.250	2.362	2.362	3.74

Metric sizes and other shank styles available

HSK MORSE TAPER HOLDERS



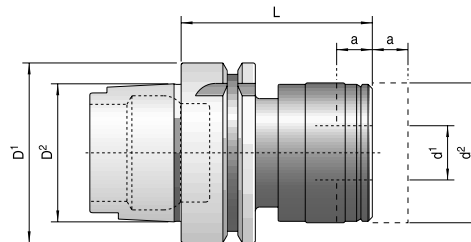
DESIGNATION	Morse Taper	d ¹	d ²	L	L ¹	lbs.
HSK-A63 Morse Taper Holders		D ¹ = 2.480" (63mm)		D ² = 1.890" (48mm)		
HSK-A63MT2	2	.700	1.260	4.330	3.307	4.40
HSK-A63MT3	3	.938	1.575	5.118	4.094	4.84
HSK-A80 Morse Taper Holders		D ¹ = 3.150" (80mm)		D ² = 2.362" (60mm)		
HSK-A80MT2	2	.700	1.260	4.330	3.307	7.92
HSK-A80MT3	3	.938	1.575	5.118	4.094	8.36
HSK-A80MT4	4	1.231	1.890	6.102	5.079	9.24
HSK-A100 Morse Taper Holders		D ¹ = 3.937" (100mm)		D ² = 2.953" (75mm)		
HSK-A100MT2	2	.700	1.260	4.724	3.583	8.36
HSK-A100MT3	3	.938	1.575	5.512	4.370	8.80
HSK-A100MT4	4	1.231	1.890	6.300	5.158	10.12

Other shank styles available

Due to the application in which these tools are used, the balanceability feature is not included; however, these tools are still manufactured to the same high tolerances as all other TopRun Tools

HSK TAPPING CHUCKS

with Tension & Compression



Uses popular Bilz style quick change collet systems.

DESIGNATION	Range Inch (Metric)	d ¹	d ²	L	a	lbs.
HSK-A63 Tapping Chucks		D ¹ = 2.480" (63mm)		D ² = 1.890" (48mm)		
HSK-A63TC1	#0 - 9/16" (M3 - M12)	.748	1.890	2.638	.295	2.20
HSK-A63TC2	5/16" - 7/8" (M8 - M20)	1.220	2.362	4.213	.492	3.74
HSK-A80 Tapping Chucks		D ¹ = 3.150" (80mm)		D ² = 2.362" (60mm)		
HSK-A80TC1	#0 - 9/16" (M3 - M12)	.748	1.890	2.953	.295	3.96
HSK-A80TC2	5/16" - 7/8" (M8 - M20)	1.220	2.362	4.252	.492	4.40
HSK-A80TC3	13/16" - 1-3/8" (M14 - M33)	1.890	3.543	5.551	.689	5.06
HSK-A100 Tapping Chucks		D ¹ = 3.937" (100mm)		D ² = 2.953" (75mm)		
HSK-A100TC1	#0 - 9/16" (M3 - M12)	.748	1.890	3.150	.295	5.94
HSK-A100TC2	5/16" - 7/8" (M8 - M20)	1.220	2.362	4.252	.492	6.60
HSK-A100TC3	13/16" - 1-3/8" (M14 - M33)	1.890	3.543	5.670	.689	7.26

Other shank styles available

Due to the application in which these tools are used, the balanceability feature is not included; however, these tools are still manufactured to the same high tolerances as all other TopRun Tools

TOPRUN High Precision Toolholders for Machining Centers and Balanceable for High Speed Machining.

HSK (Hollow Shaft Taper)

The system (see table below) was designed with a positive face contact to insure consistent accuracy throughout the life of the tool, and to eliminate costly set-up time and first-piece scrap.

HSK tooling is much more rigid than V-flange tooling. Axial and radial deflection is reduced to several microns, whereas in V-flange tooling deflection is much greater particularly axially. HSK offers a significant reduction in size and weight while increasing performance.

HSK tooling has shown dramatic improvements in virtually all machining processes, but particularly in heavy milling. Higher spindle speeds, better finishes, lower operating temperatures and shorter cycle times are some of the key advantages.

HSK tooling coupled with a high speed spindle offers the benefit of increased rigidity due to centrifugal forces. Centrifugal force is directly proportional to spindle speed, in that, as spindle speed is increased, the forces are increased and spreads the hollow taper which increases taper contact.

Force is usually the cause of problems in the drawbar and the spindle, in that the V-flange tooling transmits force through most of the spindle shaft including the bearings. In contrast, HSK tools transmit forces a very short distance, containing the forces in the spindle nose and in front of the bearings. The advantage is that the possibility of fatigue is lessened, therefore there is less chance of failure.

HSK tools have principally been used in automotive & aerospace manufacturing, but have now been migrating into small to medium sized shops.

HSK offers much quicker return on investment than conventional tooling,

- higher metal removal rates
- increased accuracy

QUALITY

The TOPRUN toolholders are manufactured and guaranteed by design, manufacturing and sales standards. The arbors are manufactured within AT3 tolerance and the concentricity with the tool seat is lower than .00012".

BALANCING

To obtain the best performances of the TOPRUN toolholders at high speed, the two counterweights in the patented graduated balancing groove have to be positioned according to an electronic balancing unit (as seen below). For spindle speeds up to 8,000 RPM, it's sufficient to position the counterweights at 0° and at 180°.



Best Balance 1000



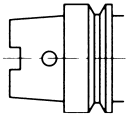
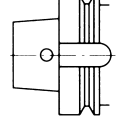
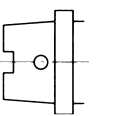
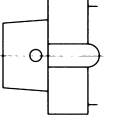
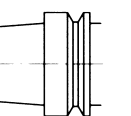
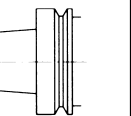
Best Balance 2000

ADVANTAGES

The use of balanced tooling provides the following advantages:

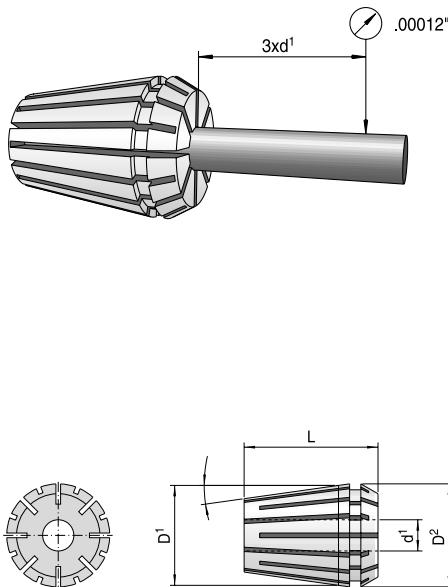
- improved accuracy and surface finish
- marked improvement of tool life
- greatly reduced wear of spindle bearings
- reduction of vibration and noise levels

HSK TOOLHOLDER IDENTIFICATION TABLE

Standard	DIN 69893-A	DIN 69893-B	DIN 69893-C	DIN 69893-D	DIN 69893-E UGV/HSC	DIN 69893-F UGV/HSC
						
Tool Change	Automatic Change (manual)	Automatic Change (manual)	Manual Change	Manual Change	Automatic Change	Automatic Change
Drive	with drive clutches at rear of taper	with drive clutches on flange	with drive clutches at rear of taper	with drive clutches on flange	by friction between taper/face	by friction between taper/face
Cooling	Through center of toolholder	Through face (or center) of toolholder	Through center of toolholder	Through face (or center) of toolholder	Through center of toolholder	---

ER ULTRA PRECISION COLLETS

Specification: DIN 6499-B
Accuracy: .00012" or .003mm



		ER16	ER25	ER32	ER40
d ¹ Range Inch (Metric)		1/64" - 3/8" (0.5mm - 10mm)	1/32" - 5/8" (1mm - 16mm)	5/64" - 3/4" (2mm - 20mm)	1/8" - 1" (3mm - 26mm)
D ¹		.630	.984	1.260	1.575
D ²		.669	1.024	1.299	1.614
L		1.083	1.339	1.575	1.811
RANGE (d ¹)		ER16	ER25	ER32	ER40
INCH	METRIC				
.0394 - .0197	1.0 - 0.5	ER16UP-010			
.0591 - .0394	1.5 - 1.0	ER16UP-015			
.0787 - .0591	2.0 - 1.5	ER16UP-020	ER25UP-020		
.0984 - .0787	2.5 - 2.0	ER16UP-025	ER25UP-025	ER32UP-025	
.1181 - .0984	3.0 - 2.5	ER16UP-030	ER25UP-030	ER32UP-030	
.1378 - .1181	3.5 - 3.0	ER16UP-035	ER25UP-035	ER32UP-035	ER40UP-035
.1575 - .1378	4.0 - 3.5	ER16UP-040	ER25UP-040	ER32UP-040	ER40UP-040
.1772 - .1575	4.5 - 4.0	ER16UP-045	ER25UP-045	ER32UP-045	ER40UP-045
.1969 - .1772	5.0 - 4.5	ER16UP-050	ER25UP-050	ER32UP-050	ER40UP-050
.2165 - .1969	5.5 - 5.0	ER16UP-055	ER25UP-055	ER32UP-055	ER40UP-055
.2362 - .2165	6.0 - 5.5	ER16UP-060	ER25UP-060	ER32UP-060	ER40UP-060
.2559 - .2362	6.5 - 6.0	ER16UP-065	ER25UP-065	ER32UP-065	ER40UP-065
.2756 - .2559	7.0 - 6.5	ER16UP-070	ER25UP-070	ER32UP-070	ER40UP-070
.2953 - .2756	7.5 - 7.0	ER16UP-075	ER25UP-075	ER32UP-075	ER40UP-075
.3150 - .2953	8.0 - 7.5	ER16UP-080	ER25UP-080	ER32UP-080	ER40UP-080
.3346 - .3150	8.5 - 8.0	ER16UP-085	ER25UP-085	ER32UP-085	ER40UP-085
.3543 - .3346	9.0 - 8.5	ER16UP-090	ER25UP-090	ER32UP-090	ER40UP-090
.3740 - .3543	9.5 - 9.0	ER16UP-095	ER25UP-095	ER32UP-095	ER40UP-095
.3937 - .3740	10.0 - 9.5	ER16UP-100	ER25UP-100	ER32UP-100	ER40UP-100
.4134 - .3937	10.5 - 10.0		ER25UP-105	ER32UP-105	ER40UP-105
.4331 - .4134	11.0 - 10.5		ER25UP-110	ER32UP-110	ER40UP-110
.4528 - .4331	11.5 - 11.0		ER25UP-115	ER32UP-115	ER40UP-115
.4724 - .4528	12.0 - 11.5		ER25UP-120	ER32UP-120	ER40UP-120
.4921 - .4724	12.5 - 12.0		ER25UP-125	ER32UP-125	ER40UP-125
.5118 - .4921	13.0 - 12.5		ER25UP-130	ER32UP-130	ER40UP-130
.5315 - .5118	13.5 - 13.0		ER25UP-135	ER32UP-135	ER40UP-135
.5512 - .5315	14.0 - 13.5		ER25UP-140	ER32UP-140	ER40UP-140
.5709 - .5512	14.5 - 14.0		ER25UP-145	ER32UP-145	ER40UP-145
.5906 - .5709	15.0 - 14.5		ER25UP-150	ER32UP-150	ER40UP-150
.6102 - .5906	15.5 - 15.0		ER25UP-155	ER32UP-155	ER40UP-155
.6299 - .6102	16.0 - 15.5		ER25UP-160	ER32UP-160	ER40UP-160
.6496 - .6299	16.5 - 16.0			ER32UP-165	ER40UP-165
.6693 - .6496	17.0 - 16.5			ER32UP-170	ER40UP-170
.6890 - .6693	17.5 - 17.0			ER32UP-175	ER40UP-175
.7087 - .6890	18.0 - 17.5			ER32UP-180	ER40UP-180
.7283 - .7087	18.5 - 18.0			ER32UP-185	ER40UP-185
.7480 - .7283	19.0 - 18.5			ER32UP-190	ER40UP-190
.7677 - .7480	19.5 - 19.0			ER32UP-195	ER40UP-195
.7874 - .7677	20.0 - 19.5			ER32UP-200	ER40UP-200
.8071 - .7874	20.5 - 20.0				ER40UP-205
.8268 - .8071	21.0 - 20.5				ER40UP-210
.8465 - .8268	21.5 - 21.0				ER40UP-215
.8661 - .8465	22.0 - 21.5				ER40UP-220
.8858 - .8661	22.5 - 22.0				ER40UP-225
.9055 - .8858	23.0 - 22.5				ER40UP-230
.9252 - .9055	23.5 - 23.0				ER40UP-235
.9449 - .9252	24.0 - 23.5				ER40UP-240
.9646 - .9449	24.5 - 24.0				ER40UP-245
.9843 - .9646	25.0 - 24.5				ER40UP-250
1.0039 - .9843	25.5 - 25.0				ER40UP-255
1.0236 - 1.0039	26.0 - 25.5				ER40UP-260

For Precision Collets, please ask for infoTECH™ #4

TYSON TOOL

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