



MASA

MICROCONIC SYSTEM



**GAME CHANGING WORKHOLDING SYSTEM
FOR SMALL PARTS**

MASATOOL.COM



MASA MICROCONIC SYSTEM

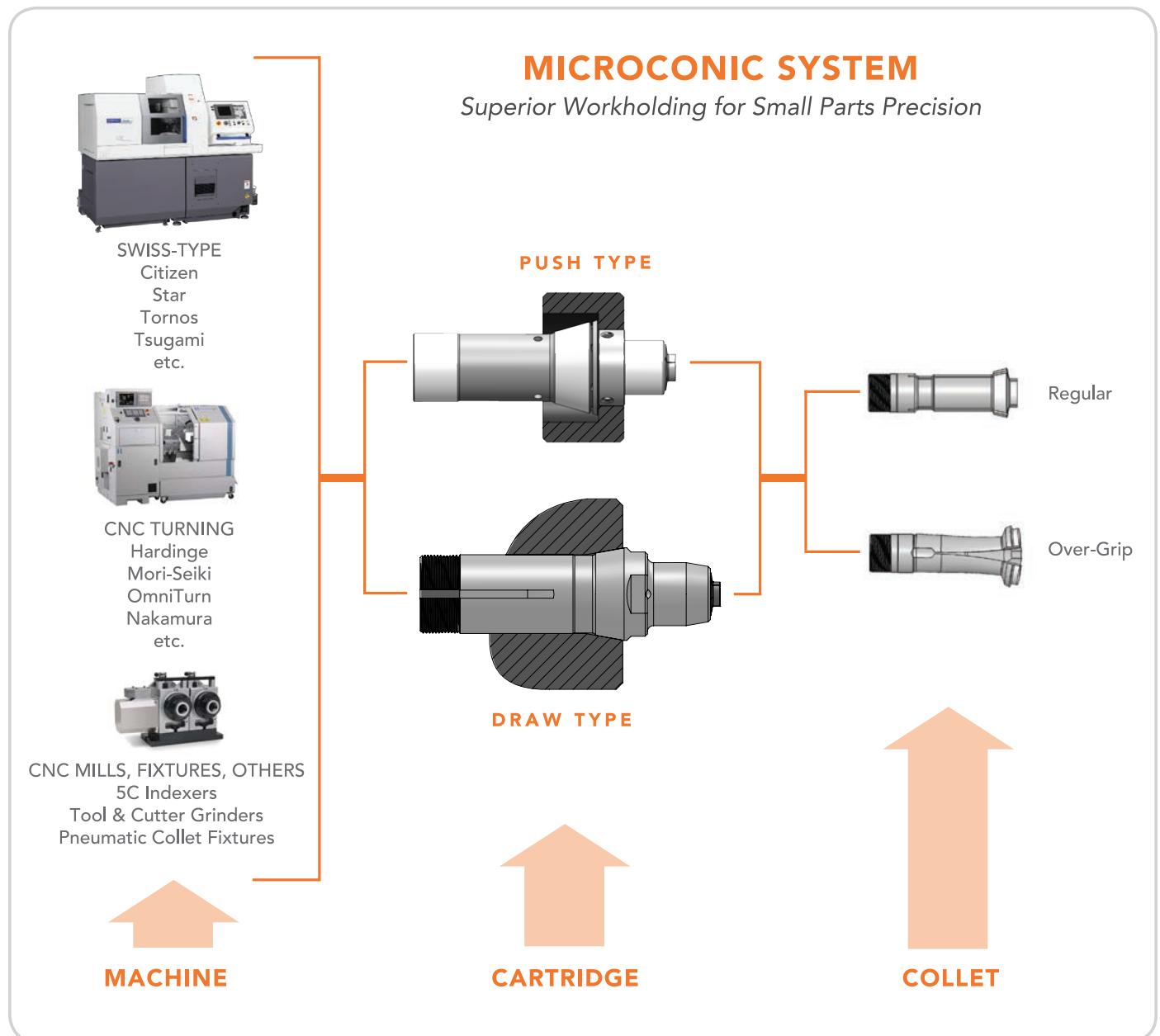
Masa Tool has developed the Microconic™ system specifically for holding workpieces from Ø0.15mm to 10mm (Ø0.006" to 0.394"). The system consists of two major components:

- The Microconic cartridge, which fits into your CNC machine spindle without modification
- The Microconic collet, which fits in the Microconic cartridge.

The Microconic system has unsurpassed concentricity. It works with either draw-type or push-type standard collet systems that are in many machines.

The over-grip collet capabilities of the Masa Microconic System introduce a whole new world of time saving opportunities. They open up to an amazing 4mm (0.157") diameter larger than the clamping diameter.

We designed our products and our production system to ensure that every component of the Microconic system ships within 2 days of order. 100% made in the USA.



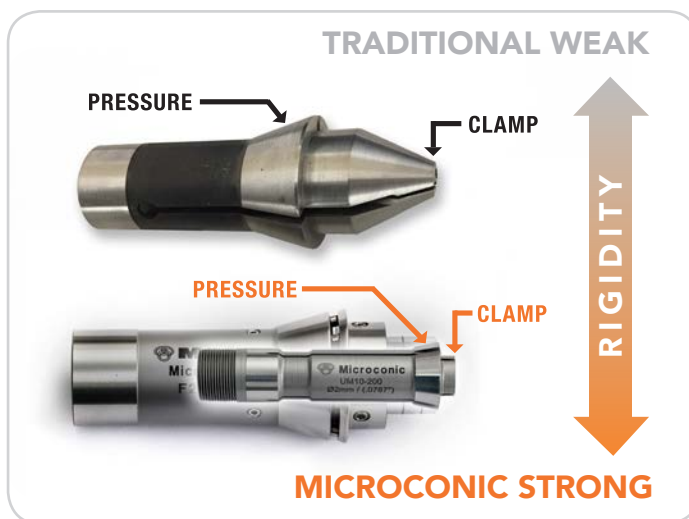


The Microconic™ system can do things that are impossible with traditional collets.

THE MICROCONIC DIFFERENCE

The Microconic™ system consists of the cartridge, which fits in like a standard collet, and the Microconic collets which fit into our cartridge.

- Accuracy – Concentricity guaranteed to 5µm (.0002") runout.
- Regular collets available from Ø0.15mm to 10mm (0.006"-0.394").
- Over-grip collets from Ø0.5mm-8.2mm (0.020"-0.323").
- Over-grip collets open up to 4mm (0.157") diameter larger than the clamping diameter. See complete details in the table "Microconic Over-Grip Collets".
- Every Microconic collet fits in every Microconic cartridge, no matter which machine.
- Every Microconic cartridge has an extended nose with unsurpassed rigidity and accuracy due to solid one-piece construction.
- The Microconic cartridge can be used as a gauge to verify machine spindle accuracy under true working conditions.



The difference is unsurpassed rigidity.

- Micrograd™ Dial Wrench allows you to set your collet clamping force with calibrated precision. Now, even the most fragile parts can be held safely and firmly.
- Microconic collets are hardened and precision ground to the highest quality standards.

MICROCONIC CARTRIDGES

ADVANTAGES OF THE MICROCONIC™ CARTRIDGE

- Installed like a standard collet in your machine, and actuated like a normal collet.
- Solid extended nose for unsurpassed rigidity.
- Extreme accuracy. Concentricity typically within 5 microns (.0002") runout.
- The Microconic cartridge can be used as a gauge to verify machine spindle accuracy.
- Available for draw-type collet systems like 5C used on conventional CNC machines, and push-type "dead length" systems, such as TF20, TF25 & TF37 used on "Swiss-type" machines.
- Delicate parts are held firmly and precisely, every time;
 - parts with thin walls
 - micro-size parts
 - plastic parts



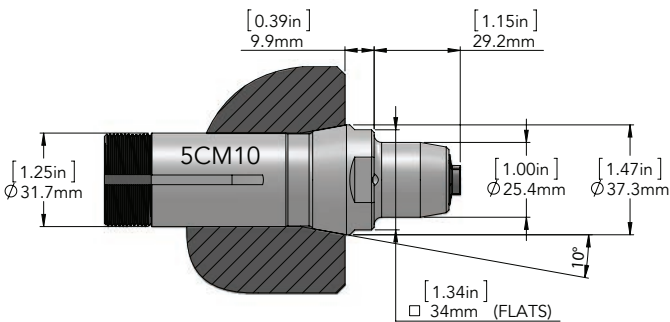
- Micrograd™ adjustment dial wrench gives you precise & repeatable control of collet clamping force. This is unique to our system!
- All Microconic cartridges in any machine use the same Microconic collets.
- Designed with an extended nose that is solid and rigid, yet small in diameter so tooling and coolant have easy access to workpiece.
- Eliminates the need for extended nose collets.

SKU	PART NUMBER	FITS INTO MACHINES THAT USE THESE COLLET TYPES:
122006	F20M10	Southwick & Meister TF20, Schaublin F20 76-87, DIN 138 E
122026	F201M10	Tornos-type Schaublin F20 76-201, DIN 136 E
122001	F25M10	Southwick & Meister TF25, Schaublin F25 76-64, DIN 145 E
122027	F37M10	Southwick & Meister TF37, Schaublin F37 76-740, DIN 1536 E
122009	5CM10	Hardinge 5C, Schaublin W31.75 80-842, DIN 385 E

5CM10 CARTRIDGE

Fits any machine or fixture that uses 5C collets.

- Great for gang-tool CNC lathes like Hardinge GT, OmniTurn, etc.
 - tighter tool spacing
 - precision chucking force control
 - better concentricity
- Ideal for rotary fixtures on CNC mills



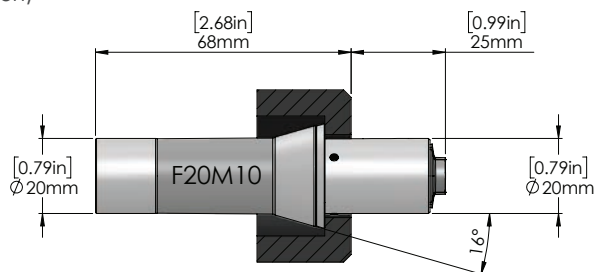
- Tool and cutter grinders
- Eliminate the hassle of extended nose collets
- Solid extended nose gives superior access for tooling while maintaining 5 micron/.0002" concentricity
- MicroGrad dial control of collet closure regardless of the machine's hydraulic or pneumatic pressure
- Workpiece stop mount available (SMT5)

The Microconic™ cartridge fits into your conventional CNC or Swiss-type machine and transforms the spindle into a highly accurate miniature workholding system. Precision ground high-chromium tool steel, triple tempered and cryogenically treated

for extreme durability. Now you can have the confidence to move more machining operations to the sub-spindle from the main spindle, to balance cutting time and reduce overall cycle time. PUT THAT SUB-SPINDLE TO WORK!

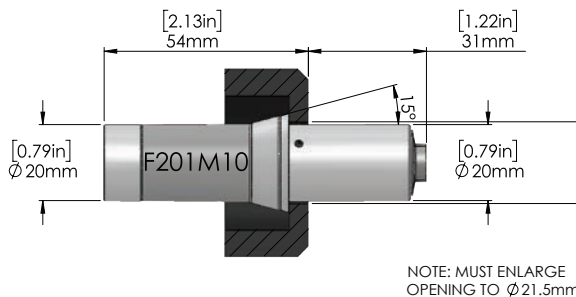
F20M10 CARTRIDGE

Fits many 12mm and 16mm capacity machines from Citizen, Star, Tsugami, Traub, Nomura, Maier, etc.



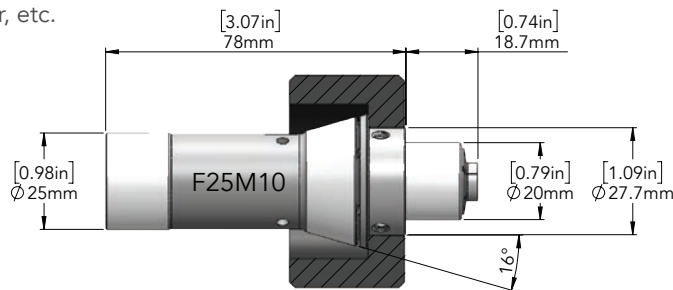
F201M10 CARTRIDGE

Fits many 13mm and 16mm capacity Tornos Deco machines. Note that some enlargement of the spindle cap nut through-hole is required (see diagram at right). Contact us for details.



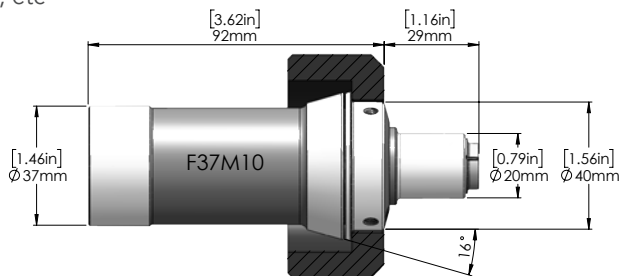
F25M10 CARTRIDGE

Fits many 20mm and 16mm capacity machines from Citizen, Star, Tsugami, Tornos, Traub, Nomura, Hanwha, Nexturn, Maier, etc.



F37M10 CARTRIDGE

Fits many 25mm and 32mm capacity machines from Citizen, Star, Tsugami, Tornos, Traub, Nomura, Hanwha, Nexturn, Maier, etc



MICROCONIC COLLETS



Microconic™ collets work in concert with our Microconic cartridges to deliver the most accurate, rigid, and reliable work holding system for high-precision small parts machining. The word “Microconic” comes from the unique way we produce each conical segment of the precision ground clamping surfaces to ensure centralized contact for extreme repeatability.

Our proprietary heat treatment and 5-step grinding process results in the most accurate and rigid collets made. Whether you need our regular or over-grip collets, they are the absolute best! Every size available to ship within 2 days.

MICROCONIC REGULAR COLLETS

Our Microconic regular collets have game-changing rigidity with superb accuracy that will allow you to perform challenging operations that were difficult or impossible with conventional collets. Used with our Microconic cartridges, they eliminate the need for extended nose collets. They grip tighter yet can hold the most fragile workpiece without damage.

- Concentricity 5 microns (.0002”) or less TIR
- Eliminates the need for extended nose collets



- Rigidity for the most demanding operations
- Internal thread for available EGS work support
- Available for any size from Ø0.15mm --10mm (.006”-.394”)

MICROCONIC OVER-GRIP COLLETS

Microconic over-grip collets are like nothing else you have ever seen. They open up to Ø4mm (.156”) larger to reach behind flanges, headed parts, and any enlarged feature. Due to our proprietary Microconic geometry, they have the same accuracy and rigidity as our industry-best regular collets! Now you can over-grip and do real machining like heavy drilling/milling/turning, blind hole broaching, etc. Choose to run parts the best way out, rather than be limited by conventional collets. Make serious profit from your sub-spindle!

- Available from Ø0.5mm – 8.2mm (.020” – .323”)
- Opens up to Ø4mm (.156”) larger than holding diameter
- Concentricity 5 microns (.0002”) TIR
- Rigidity for heavy operations
- Supplied with EGS guide sleeve blank to help part ejection
- Eliminate secondary operations
- Turn parts around to run “the right way out”
- Profit from your sub-spindle!
- All sizes available to ship in 2 days or less



W-TYPE: Our most popular over-grip type, these open about Ø4mm (.15”) larger and have a gripping length of about 1x diameter (see table on page 9).



LONGER LAND

T-TYPE: Intended for longer parts, this type opens about Ø3.4mm (.13”) larger and has a gripping length of about 2x-3x diameter, with a slightly longer nose (see page 9).



LARGER DIAMETER

V-TYPE: Similar to W-type but optimized for larger diameter parts, these open about Ø3mm (.12”) larger (see page 9).

MICROCONIC™ SYSTEM ACCESSORIES



MICROGRAD™ DIAL WRENCH

Included with each cartridge, the Micrograd™ Dial Wrench is a dual-purpose tool used to install and adjust the collet in the cartridge. With dial graduations in either .02mm or .001-inch increments, the closure of the Microconic collet can be set with calibrated precision using a common pin gage the diameter of

the work piece. This setting is held internally by the cartridge and remains stable regardless of variations in the machine's closing pressure. In fact, the setting can be recorded in the job setup plan and precisely repeated in a later setup or even on a different machine! No guesswork or skilled "feel" is needed.

MACHINING CONDITION	MICROGRAD SETTING	
VERY LIGHT – thin walls, micro-size parts	0 – 0.02 mm	0 – .001"
LIGHT TO MODERATE – skim cutting, facing, ID chamfer, smaller parts	0.02 – 0.06 mm	.001 – .002"
MODERATE – turning, boring, small drilling, small threading	0.04 – 0.08 mm	.0015 – .003"
HEAVY – turning, milling, drilling, threading, cross-drilling	0.08 – 0.1 mm	.003 – .004"
EXTREME – large drilling, blind hole broaching, heavy milling	0.1+ mm	.004"+

MICROGUIDE EGS EJECTION GUIDE SLEEVES

Each Microconic™ Over-grip collet is supplied with a brass Microguide EGS ejection guide sleeve blank. The Microguide EGS sleeve can be bored, drilled or machined to match the part profile and support the part and guide it for reliable ejection into the part catcher.

Due to the extreme opening capability of our over-grip collets, workpiece ejection must be 100% reliable to prevent a part from getting stuck in the slots of the collets. This would cause collet damage or breakage.

You will need to machine the Microguide EGS to fit your particular part setup. We suggest using programmed cycle stops while validating the production setup to make sure part ejection is reliable.



MicroGuide EGS bored to workpiece size and installed in T-type over-grip collet.



Stainless Steel, Brass, and Plastic available.

MICROCONIC REGULAR COLLET

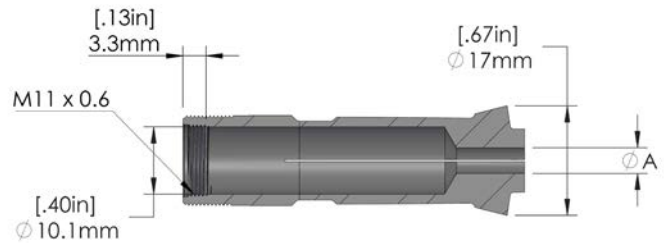
Microconic Collets get their name from our proprietary 5 step grinding process that produces the most accurate workholding collets in the industry. Absolutely the best for high-precision small parts and micromachining production. Our UM10 collets fit in any M10 series Microconic cartridge, no matter which machine. Use the same collet on your Swiss-type pick-off spindle, your 2nd Op gang-tool lathe, CNC mill indexer, or anywhere a Microconic cartridge is installed.



Part Size Range ØA mm inch	SKU	Item Number	Part Size Range ØA mm inch	SKU	Item Number	Part Size Range ØA mm inch	SKU	Item Number
.22-.27 .0086-.0106	123001	UM10-25	2.2 - 2.28 .0866-.0898	123078	UM10-225	4.3 - 4.38 .1693-.1725	123162	UM10-435
.25-.3 .0098-.0118	123002	UM10-28	2.25 - 2.33 .0866-.0918	123080	UM10-230	4.35 - 4.43 .1712-.1744	123164	UM10-440
.28-.33 .0110-.0130	123003	UM10-31	2.3 - 2.38 .0905-.0937	123082	UM10-235	4.4 - 4.48 .1732-.1764	123166	UM10-445
.31-.36 .0122-.0142	123004	UM10-34	2.35 - 2.43 .0925-.0957	123084	UM10-240	4.45 - 4.53 .1752-.1784	123168	UM10-450
.34-.39 .0134-.0154	123005	UM10-37	2.4 - 2.48 .0945-.0977	123086	UM10-245	4.5 - 4.58 .1771-.1803	123170	UM10-455
.37-.42 .0145-.0165	123006	UM10-40	2.45 - 2.53 .0964-.0996	123088	UM10-250	4.55 - 4.63 .1791-.1823	123172	UM10-460
.4-.48 .0157-.0189	123007	UM10-45	2.5 - 2.58 .0984-.1016	123090	UM10-255	4.6 - 4.68 .1811-.1843	123174	UM10-465
.45-.53 .0177-.0209	123008	UM10-50	2.55 - 2.63 .1004-.1036	123092	UM10-260	4.65 - 4.73 .1830-.1862	123176	UM10-470
.5-.58 .0197-.0229	123010	UM10-55	2.6 - 2.68 .1023-.1055	123094	UM10-265	4.7 - 4.78 .1850-.1882	123178	UM10-475
.55-.63 .0216-.0248	123012	UM10-60	2.65 - 2.73 .1043-.1075	123096	UM10-270	4.75 - 4.83 .1870-.1902	123180	UM10-480
.6-.68 .0236-.0268	123014	UM10-65	2.7 - 2.78 .1063-.1095	123098	UM10-275	4.8 - 4.88 .1889-.1921	123182	UM10-485
.65-.73 .0256-.0288	123016	UM10-70	2.75 - 2.83 .1082-.1114	123100	UM10-280	4.85 - 4.93 .1909-.1941	123184	UM10-490
.7-.78 .0275-.0307	123018	UM10-75	2.8 - 2.88 .1102-.1134	123102	UM10-285	4.9 - 4.98 .1929-.1961	123186	UM10-495
.75-.83 .0295-.0327	123020	UM10-80	2.85 - 2.93 .1122-.1154	123104	UM10-290	4.95 - 5.03 .1949-.1981	123188	UM10-500
.8-.88 .0315-.0374	123022	UM10-85	2.9 - 2.98 .1141-.1173	123106	UM10-295	5 - 5.08 .1968-.2000	123190	UM10-505
.85-.9 .0334-.0366	123024	UM10-90	2.95 - 3.03 .1161-.1193	123108	UM10-300	5.05 - 5.13 .1988-.2020	123192	UM10-510
.9-.98 .0354-.0386	123026	UM10-95	3 - 3.08 .1181-.1213	123110	UM10-305	5.1 - 5.18 .2008-.2040	123194	UM10-515
.95-1.03 .0374-.0406	123028	UM10-100	3.05 - 3.13 .1200-.1232	123112	UM10-310	5.15 - 5.23 .2027-.2059	123196	UM10-520
1 - 1.08 .0393-.0425	123030	UM10-105	3.1 - 3.18 .1220-.1252	123114	UM10-315	5.2 - 5.28 .2047-.2079	123198	UM10-525
1.05 - 1.13 .0413-.0445	123032	UM10-110	3.15 - 3.23 .1240-.1272	123116	UM10-320	5.25 - 5.33 .2067-.2099	123200	UM10-530
1.1 - 1.18 .0433-.0465	123034	UM10-115	3.2 - 3.28 .1260-.1292	123118	UM10-325	5.3 - 5.38 .2086-.2118	123202	UM10-535
1.15 - 1.23 .0452-.0484	123036	UM10-120	3.25 - 3.33 .1279-.1311	123120	UM10-330	5.35 - 5.43 .2106-.2138	123204	UM10-540
1.2 - 1.28 .0472-.0504	123038	UM10-125	3.3 - 3.38 .1299-.1331	123122	UM10-335	5.4 - 5.48 .2126-.2158	123206	UM10-545
1.25 - 1.33 .0492-.0524	123040	UM10-130	3.35 - 3.43 .1319-.1351	123124	UM10-340	5.45 - 5.53 .2145-.2177	123208	UM10-550
1.3 - 1.38 .0511-.0543	123042	UM10-135	3.4 - 3.48 .1338-.1370	123126	UM10-345	5.5 - 5.58 .2165-.2197	123210	UM10-555
1.35 - 1.43 .0531-.0563	123044	UM10-140	3.45 - 3.53 .1358-.1390	123128	UM10-350	5.55 - 5.63 .2185-.2217	123212	UM10-560
1.4 - 1.48 .0551-.0583	123046	UM10-145	3.5 - 3.58 .1378-.1410	123130	UM10-355	5.6 - 5.68 .2204-.2236	123214	UM10-565
1.45 - 1.53 .0571-.0603	123048	UM10-150	3.55 - 3.63 .1397-.1429	123132	UM10-360	5.65 - 5.73 .2224-.2256	123216	UM10-570
1.5 - 1.58 .0590-.0622	123050	UM10-155	3.6 - 3.68 .1417-.1449	123134	UM10-365	5.7 - 5.78 .2244-.2276	123218	UM10-575
1.55 - 1.63 .0610-.0642	123052	UM10-160	3.65 - 3.73 .1437-.1469	123136	UM10-370	5.75 - 5.83 .2263-.2295	123220	UM10-580
1.6 - 1.68 .0630-.0662	123054	UM10-165	3.7 - 3.78 .1459-.1488	123138	UM10-375	5.8 - 5.88 .2283-.2315	123222	UM10-585
1.65 - 1.73 .0649-.0681	123056	UM10-170	3.75 - 3.83 .1476-.1508	123140	UM10-380	5.85 - 5.93 .2303-.2335	123224	UM10-590
1.7 - 1.78 .0669-.0701	123058	UM10-175	3.8 - 3.88 .1496-.1528	123142	UM10-385	5.9 - 5.98 .2323-.2355	123226	UM10-595
1.75 - 1.83 .0689-.0721	123060	UM10-180	3.85 - 3.93 .1515-.1547	123144	UM10-390	5.95 - 6.03 .2342-.2374	123228	UM10-600
1.8 - 1.88 .0708-.0740	123062	UM10-185	3.9 - 3.98 .1535-.1567	123146	UM10-395	6 - 6.08 .2362-.2394	123230	UM10-605
1.85 - 1.93 .0728-.0760	123064	UM10-190	3.95 - 4.03 .1555-.1587	123148	UM10-400	6.05 - 6.13 .2382-.2414	123232	UM10-610
1.9 - 1.98 .0748-.0780	123066	UM10-195	4 - 4.08 .1574-.1606	123150	UM10-405	6.1 - 6.18 .2401-.2433	123234	UM10-615
1.95 - 2.03 .0767-.0799	123068	UM10-200	4.05 - 4.13 .1594-.1626	123152	UM10-410	6.15 - 6.23 .2421-.2453	123236	UM10-620
2 - 2.08 .0787-.0819	123070	UM10-205	4.1 - 4.18 .1614-.1646	123154	UM10-415	6.2 - 6.28 .2441-.2473	123238	UM10-625
2.05 - 2.13 .0807-.0839	123072	UM10-210	4.15 - 4.23 .1634-.1666	123156	UM10-420	6.25 - 6.33 .2460-.2492	123240	UM10-630
2.1 - 2.18 .0826-.0858	123074	UM10-215	4.2 - 4.28 .1653-.1685	123158	UM10-425	6.3 - 6.38 .2480-.2512	123242	UM10-635
2.15 - 2.23 .0846-.0878	123076	UM10-220	4.25 - 4.33 .1673-.1705	123160	UM10-430	6.35 - 6.43 .2500-.2532	123244	UM10-640

UM10 Microconic Collets:

- Concentricity .005mm (.0002") T.I.R. or less
- Eliminates the need for long nose extended collets
- Hardened and ground for long production life
- Fits any machine with a Microconic cartridge
- Superior accuracy and rigidity of the Microconic geometry



Part Size Range ØA		SKU	Item Number	Part Size Range ØA		SKU	Item Number
mm	inch			mm	inch		
6.4 - 6.48	.2519-.2551	123246	UM10-645	8.5 - 8.58	.3346-.3378	123304	UM10-855
6.45 - 6.53	.2539-.2571	123248	UM10-650	8.55 - 8.63	.3366-.3398	123305	UM10-860
6.5 - 6.58	.2559-.2591	123250	UM10-655	8.6 - 8.68	.3386-.3418	123306	UM10-865
6.55 - 6.63	.2578-.2610	123252	UM10-660	8.65 - 8.73	.3405-.3437	123307	UM10-870
6.6 - 6.68	.2598-.2630	123254	UM10-665	8.7 - 8.78	.3425-.3457	123308	UM10-875
6.65 - 6.73	.2618-.2650	123256	UM10-670	8.75 - 8.83	.3445-.3477	123309	UM10-880
6.7 - 6.78	.2637-.2669	123258	UM10-675	8.8 - 8.88	.3464-.3496	123310	UM10-885
6.75 - 6.83	.2657-.2689	123260	UM10-680	8.85 - 8.93	.3484-.3516	123311	UM10-890
6.8 - 6.88	.2677-.2709	123262	UM10-685	8.9 - 8.98	.3504-.3536	123312	UM10-895
6.85 - 6.93	.2697-.2729	123264	UM10-690	8.95 - 9.03	.3523-.3555	123313	UM10-900
6.9 - 6.98	.2716-.2748	123266	UM10-695	9 - 9.08	.3543-.3575	123314	UM10-905
6.95 - 7.03	.2736-.2768	123268	UM10-700	9.05 - 9.13	.3563-.3595	123315	UM10-910
7 - 7.08	.2756-.2788	123270	UM10-705	9.1 - 9.18	.3582-.3614	123316	UM10-915
7.05 - 7.13	.2775-.2807	123272	UM10-710	9.15 - 9.23	.3602-.3634	123317	UM10-920
7.1 - 7.18	.2795-.2827	123274	UM10-715	9.2 - 9.28	.3622-.3654	123318	UM10-925
7.15 - 7.23	.2815-.2847	123276	UM10-720	9.25 - 9.33	.3641-.3673	123319	UM10-930
7.2 - 7.28	.2834-.2866	123278	UM10-725	9.3 - 9.38	.3661-.3693	123320	UM10-935
7.25 - 7.33	.2854-.2886	123279	UM10-730	9.35 - 9.43	.3681-.3713	123321	UM10-940
7.3 - 7.38	.2874-.2906	123280	UM10-735	9.4 - 9.48	.3700-.3732	123322	UM10-945
7.35 - 7.43	.2893-.2925	123281	UM10-740	9.45 - 9.53	.3720-.3752	123323	UM10-950
7.4 - 7.48	.2913-.2945	123282	UM10-745	9.5 - 9.58	.3740-.3772	123324	UM10-955
7.45 - 7.53	.2933-.2965	123283	UM10-750	9.55 - 9.63	.3760-.3792	123325	UM10-960
7.5 - 7.58	.2952-.2984	123284	UM10-755	9.6 - 9.68	.3779-.3811	123326	UM10-965
7.55 - 7.63	.2972-.3004	123285	UM10-760	9.65 - 9.73	.3799-.38.1	123327	UM10-970
7.6 - 7.68	.2992-.3024	123286	UM10-765	9.7 - 9.78	.3819-.3851	123328	UM10-975
7.65 - 7.73	.3011-.3043	123287	UM10-770	9.75 - 9.83	.3838-.3870	123329	UM10-980
7.7 - 7.78	.3031-.3063	123288	UM10-775	9.8 - 9.88	.3858-.3890	123330	UM10-985
7.75 - 7.83	.3051-.3083	123289	UM10-780	9.85 - 9.93	.3878-.3910	123331	UM10-990
7.8 - 7.88	.3071-.3103	123290	UM10-785	9.9 - 9.98	.3897-.3929	123332	UM10-995
7.85 - 7.93	.3090-.3122	123291	UM10-790	9.95 - 10.03	.3917-.3949	123333	UM10-1000
7.9 - 7.98	.3110-.3142	123292	UM10-795				
7.95 - 8.03	.3130-.3162	123293	UM10-800				
8 - 8.08	.3149-.3181	123294	UM10-805				
8.05 - 8.13	.3169-.3201	123295	UM10-810				
8.1 - 8.18	.3189-.3221	123296	UM10-815				
8.15 - 8.23	.3208-.3240	123297	UM10-820				
8.2 - 8.28	.3228-.3260	123298	UM10-825				
8.25 - 8.33	.3248-.3280	123299	UM10-830				
8.3 - 8.38	.3267-.3299	123300	UM10-835				
8.35 - 8.43	.3287-.3319	123301	UM10-840				
8.4 - 8.48	.3307-.3339	123302	UM10-845				
8.45 - 8.53	.3326-.3358	123303	UM10-850				

MICROCONIC OVER-GRIP COLLETS

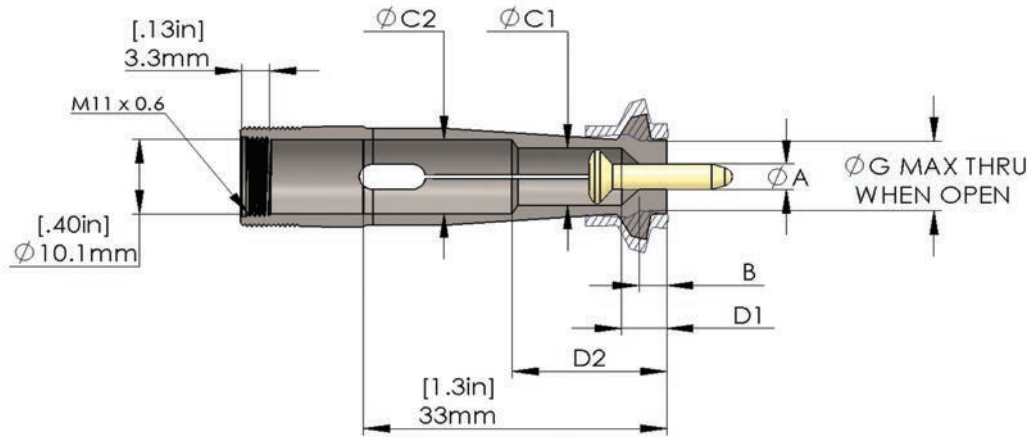


No other collet on the market can over-grip as much as the Microconic Over-grip Collet with the Masa Cartridge. Microconic Over-grip Collets can open up to 4mm over the chucking diameter and run within 5µm (0.0002") T.I.R.

Over-grip collets, also referred to as over-the-shoulder collets, are used in a pick-off spindle when it is required to clear a shoulder and grip on a smaller diameter beyond the larger diameter. A screw head is a good example of this kind of part. Extra spread is required to open the collet wide enough to go over the screw head or larger diameter.

Part Size Range ØA		SKU	Item Number	ØG max		B		ØC1		D1		ØC2		D2	
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
.55 - .63	.0216-.0248	123013	UM10W-60	4.6	.18	2.4	.07	7.1	.28	5.6	.22	9.7	.38	15.1	.60
.6 - .68	.0236-.0268	123015	UM10W-65	4.7	.18	2.4	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
.65 - .73	.0256-.0288	123017	UM10W-70	4.7	.19	2.4	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
.7 - .78	.0275-.0307	123019	UM10W-75	4.8	.19	2.5	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
.75 - .83	.0295-.0327	123021	UM10W-80	4.8	.19	2.5	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
.8 - .88	.0315-.0347	123023	UM10W-85	4.9	.19	2.5	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
.85 - .93	.0334-.0366	123025	UM10W-90	4.9	.19	2.5	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
.9 - .98	.0354-.0386	123027	UM10W-95	5.0	.19	2.6	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
.95 - 1.03	.0374-.0406	123029	UM10W-100	5.0	.20	2.6	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1 - 1.08	.0393-.0425	123031	UM10W-105	5.1	.20	2.6	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.05 - 1.13	.0413-.0445	123033	UM10W-110	5.1	.20	2.6	.08	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.1 - 1.18	.0433-.0465	123035	UM10W-115	5.2	.20	2.7	.09	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.15 - 1.23	.0452-.0484	123037	UM10W-120	5.2	.20	2.7	.09	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.2 - 1.28	.0472-.0504	123039	UM10W-125	5.3	.21	2.7	.09	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.25 - 1.33	.0492-.0524	123041	UM10W-130	5.3	.21	2.7	.09	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.3 - 1.38	.0511-.0543	123043	UM10W-135	5.4	.21	2.8	.09	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.35 - 1.43	.0531-.0563	123045	UM10W-140	5.4	.21	2.8	.09	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.4 - 1.48	.0551-.0583	123047	UM10W-145	5.5	.21	2.8	.09	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.45 - 1.53	.0571-.0603	123049	UM10W-150	5.5	.22	2.8	.09	7.1	.28	5.6	.22	9.7	.38	15.1	.60
1.5 - 1.58	.0590-.0622	123338	UM10T-155	4.8	.19	5.8	.23	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123051	UM10W-155	5.6	.22	2.9	.09			5.6	.22			15.1	.60
1.55 - 1.63	.0610-.0642	123339	UM10T-160	4.8	.19	5.8	.23	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123053	UM10W-160	5.6	.22	2.9	.09			5.6	.22			15.1	.60
1.6 - 1.68	.0630-.0662	123340	UM10T-165	5.1	.20	5.8	.23	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123055	UM10W-165	5.7	.22	2.9	.09			5.6	.22			15.1	.60

MICROCONIC OVER-GRIP COLLETS

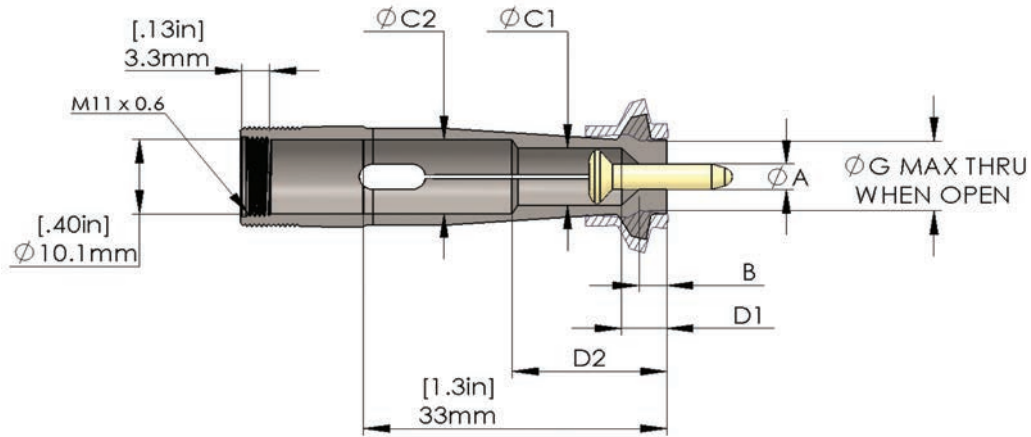


Part Size Range ØA		SKU	Item Number	ØG max		B		ØC1		D1		ØC2		D2	
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
1.65 - 1.73	.0649-.0681	123341	UM10T-170	5.1	.20	5.8	.23	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123057	UM10W-170	5.7	.22	2.9	.10			5.6	.22			15.1	.60
1.7 - 1.78	.0669-.0701	123342	UM10T-175	5.1	.20	5.8	.23	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123059	UM10W-175	5.8	.23	3	.10			5.6	.22			15.1	.60
1.75 - 1.83	.0689-.0721	123343	UM10T-180	5.1	.20	5.8	.23	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123061	UM10W-180	5.8	.23	3	.10			5.6	.22			15.1	.60
1.8 - 1.88	.0708-.0740	123344	UM10T-185	5.1	.20	6.1	.24	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123063	UM10W-185	5.9	.23	3	.10			5.6	.22			15.1	.60
1.85 - 1.93	.0728-.0760	123345	UM10T-190	5.1	.20	6.1	.24	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123065	UM10W-190	5.9	.23	3	.10			5.6	.22			15.1	.60
1.9 - 1.98	.0748-.0780	123346	UM10T-195	5.3	.21	6.1	.24	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123067	UM10W-195	6.0	.23	3.1	.10			5.6	.22			15.1	.60
1.95 - 2.03	.0767-.0799	123347	UM10T-200	5.3	.21	6.1	.24	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123069	UM10W-200	6.0	.24	3.1	.10			5.6	.22			15.1	.60
2 - 2.08	.0787-.0819	123348	UM10T-205	5.3	.21	6.1	.24	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123071	UM10W-205	6.1	.24	3.1	.10			5.6	.22			15.1	.60
2.05 - 2.13	.0807-.0839	123349	UM10T-210	5.3	.21	6.1	.24	7.1	.28	7.1	.28	9.7	.38	17.3	.68
		123073	UM10W-210	6.1	.24	3.1	.10			5.6	.22			15.1	.60
2.1 - 2.18	.0826-.0858	123350	UM10T-215	5.3	.21	6.6	.26	7.1	.28	7.6	.30	9.7	.38	17.3	.68
		123075	UM10W-215	6.2	.24	3.2	.10			5.6	.22			15.1	.60
2.15 - 2.23	.0846-.0878	123351	UM10T-220	5.3	.21	6.6	.26	7.1	.28	7.6	.30	9.7	.38	17.3	.68
		123077	UM10W-220	6.2	.24	3.2	.11			5.6	.22			15.1	.60
2.2 - 2.28	.0866-.0898	123352	UM10T-225	5.6	.22	6.6	.26	7.1	.28	7.6	.30	9.7	.38	17.3	.68
		123079	UM10W-225	6.3	.25	3.2	.11			5.6	.22			15.1	.60
2.25 - 2.33	.0883-.0915	123353	UM10T-230	5.6	.22	6.6	.26	7.1	.28	7.6	.30	9.7	.38	17.3	.68
		123081	UM10W-230	6.3	.25	3.2	.11			5.6	.22			15.1	.60
2.3 - 2.38	.0905-.0937	123354	UM10T-235	5.6	.22	6.6	.26	7.1	.28	7.6	.30	9.7	.38	17.3	.68
		123083	UM10W-235	6.4	.25	3.3	.11			5.6	.22			15.1	.60
2.35 - 2.43	.0925-.0957	123355	UM10T-240	5.6	.22	6.6	.26	7.1	.28	7.6	.30	9.7	.38	17.3	.68
		123085	UM10W-240	6.4	.25	3.3	.11			5.6	.22			15.1	.60
2.4 - 2.48	.0945-.0977	123356	UM10T-245	5.6	.22	7.1	.28	7.1	.28	8.1	.32	9.7	.38	17.3	.68
		123087	UM10W-245	6.5	.25	3.3	.11			5.6	.22			15.1	.60
2.45 - 2.53	.0964-.0996	123357	UM10T-250	5.6	.22	7.1	.28	7.1	.28	8.1	.32	9.7	.38	17.3	.68
		123089	UM10W-250	6.5	.26	3.3	.11			5.6	.22			15.1	.60
2.5 - 2.58	.0984-.1016	123358	UM10T-255	5.8	.23	7.1	.28	7.1	.28	8.1	.32	9.7	.38	17.3	.68
		123091	UM10W-255	6.6	.26	3.4	.11			5.6	.22			15.1	.60

MICROCONIC OVER-GRIP COLLETS

Part Size Range ØA		SKU	Item Number	ØG max		B		ØC1		D1		ØC2		D2	
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
2.55 - 2.63	.1004-.1036	123359	UM10T-260	5.8	.23	7.4	.29	7.1	.28	8.1	.32	9.7	.38	17.3	.68
		123093	UM10W-260	6.6	.26	3.4	.11			5.6	.22			15.1	.60
2.6 - 2.68	.1023-.1055	123360	UM10T-265	5.8	.23	7.4	.29	7.1	.28	8.1	.32	9.7	.38	17.3	.68
		123095	UM10W-265	6.7	.26	3.4	.11			5.6	.22			15.1	.60
2.65 - 2.73	.1043-.1075	123361	UM10T-270	5.8	.23	7.4	.29	7.1	.28	8.1	.32	9.7	.38	17.3	.68
		123097	UM10W-270	6.7	.26	3.4	.11			5.6	.22			15.1	.60
2.7 - 2.78	.1063-.1095	123362	UM10T-275	5.8	.23	7.9	.31	7.1	.28	8.6	.34	9.7	.38	17.3	.68
		123099	UM10W-275	6.8	.27	3.5	.12			5.6	.22			15.1	.60
2.75 - 2.83	.1082-.1114	123363	UM10T-280	5.8	.23	7.9	.31	7.1	.28	8.6	.34	9.7	.38	17.3	.68
		123101	UM10W-280	6.8	.27	3.5	.12			5.6	.22			15.1	.60
2.8 - 2.88	.1102-.1134	123364	UM10T-285	5.8	.23	7.9	.31	7.1	.28	8.6	.34	9.7	.38	17.3	.68
		123103	UM10W-285	6.9	.27	3.5	.12			5.6	.22			15.1	.60
2.85 - 2.93	.1122-.1154	123365	UM10T-290	6.1	.24	7.9	.31	7.1	.28	8.6	.34	9.7	.38	17.3	.68
		123105	UM10W-290	6.9	.27	3.5	.12			5.6	.22			15.1	.60
2.9 - 2.98	.1141-.1173	123366	UM10T-295	6.1	.24	7.9	.31	7.1	.28	8.6	.34	9.7	.38	17.3	.68
		123107	UM10W-295	7.0	.27	3.5	.12			5.6	.22			15.1	.60
2.95 - 3.03	.1161-.1193	123367	UM10T-300	6.1	.24	8.4	.33	7.1	.28	9.1	.36	9.7	.38	17.3	.68
		123109	UM10W-300	7.0	.28	3.6	.12			5.6	.22			15.1	.60
3 - 3.08	.1181-.1213	123368	UM10T-305	6.1	.24	8.4	.33	7.1	.28	9.1	.36	9.7	.38	17.3	.68
		123111	UM10W-305	7.1	.28	3.6	.12			5.6	.22			15.1	.60
3.05 - 3.13	.1200-.1232	123369	UM10T-310	6.1	.24	8.4	.33	7.1	.28	9.1	.36	9.7	.38	17.3	.68
		123113	UM10W-310	7.1	.28	3.6	.12			5.6	.22			15.1	.60
3.1 - 3.18	.1220-.1252	123370	UM10T-315	6.1	.24	8.4	.33	7.1	.28	9.1	.36	9.7	.38	17.3	.68
		123115	UM10W-315	7.2	.28	3.6	.12			5.6	.22			15.1	.60
3.15 - 3.23	.1240-.1272	123371	UM10T-320	6.4	.25	8.4	.33	7.1	.28	9.1	.36	9.7	.38	17.3	.68
		123117	UM10W-320	7.2	.28	3.7	.12			5.6	.22			15.1	.60
3.2 - 3.28	.1260-.1292	123372	UM10T-325	6.4	.25	8.4	.33	7.1	.28	9.1	.36	9.7	.38	17.3	.68
		123119	UM10W-325	7.3	.29	3.7	.13			5.6	.22			15.1	.60
3.25 - 3.33	.1279-.1311	123373	UM10T-330	6.4	.25	8.9	.35	7.1	.28	9.7	.38	9.7	.38	17.3	.68
		123121	UM10W-330	7.3	.29	3.7	.13			5.6	.22			15.1	.60
3.3 - 3.38	.1299-.1331	123374	UM10T-335	6.4	.25	8.9	.35	7.1	.28	9.7	.38	9.7	.38	17.3	.68
		123123	UM10W-335	7.4	.29	3.7	.13			5.6	.22			15.1	.60
3.35 - 3.43	.1319-.1351	123375	UM10T-340	6.4	.25	8.9	.35	7.1	.28	9.7	.38	9.7	.38	17.3	.68
		123125	UM10W-340	7.4	.29	3.8	.13			5.6	.22			15.1	.60
3.4 - 3.48	.1338-.1370	123376	UM10T-345	6.4	.25	8.9	.35	7.1	.28	9.7	.38	9.7	.38	17.3	.68
		123127	UM10W-345	7.5	.29	3.8	.13			5.6	.22			15.1	.60
3.45 - 3.53	.1358-.1390	123377	UM10T-350	6.4	.25	8.9	.35	7.1	.28	9.7	.38	9.7	.38	17.3	.68
		123129	UM10W-350	7.5	.30	3.8	.13			5.6	.22			15.1	.60
3.5 - 3.58	.1378-.1410	123378	UM10T-355	6.6	.26	8.9	.35	7.1	.28	9.7	.38	9.7	.38	17.3	.68
		123131	UM10W-355	7.6	.30	3.8	.13			5.6	.22			15.1	.60
3.55 - 3.63	.1397-.1429	123379	UM10T-360	6.6	.26	8.9	.35	7.1	.28	9.7	.38	9.7	.38	17.3	.68
		123133	UM10W-360	7.6	.30	3.9	.13			5.6	.22			15.1	.60
3.6 - 3.68	.1417-.1449	123380	UM10T-365	6.6	.26	9.7	.38	7.4	.29	10.4	.41	9.7	.38	17.3	.68
		123135	UM10W-365	7.7	.30	3.9	.13			5.6	.22			15.1	.60
3.65 - 3.73	.1437-.1469	123381	UM10T-370	6.6	.26	9.7	.38	7.4	.29	10.4	.41	9.7	.38	17.3	.68
		123137	UM10W-370	7.7	.30	3.9	.13			5.6	.22			15.1	.60
3.7 - 3.78	.1456-.1488	123382	UM10T-375	6.6	.26	9.7	.38	7.4	.29	10.4	.41	9.7	.38	17.3	.68
		123139	UM10W-375	7.8	.31	3.9	.14			5.6	.22			15.1	.60

MICROCONIC OVER-GRIP COLLETS

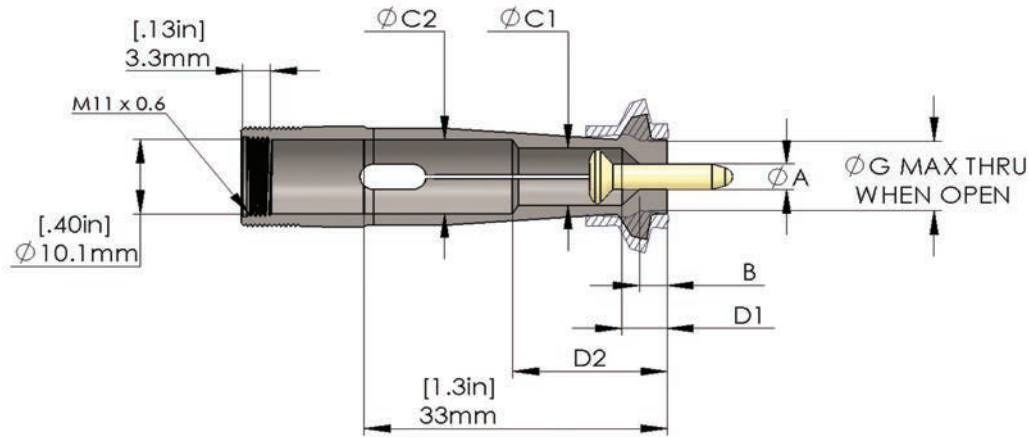


Part Size Range ØA		SKU	Item Number	ØG max		B		ØC1		D1		ØC2		D2	
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
3.75 - 3.83	.1476-.1508	123383	UM10T-380	6.6	.26	9.7	.38	7.4	.29	10.4	.41	9.7	.38	17.3	.68
		123141	UM10W-380	7.8	.31	4	.14			5.6	.22			15.1	.60
3.8 - 3.88	.1496-.1528	123384	UM10T-385	6.9	.27	9.7	.38	7.4	.29	10.4	.41	9.7	.38	17.3	.68
		123141	UM10W-385	7.9	.31	4	.14			5.6	.22			15.1	.60
3.85 - 3.93	.1515-.1547	123385	UM10T-390	6.9	.27	9.7	.38	7.4	.29	10.4	.41	9.7	.38	17.3	.68
		123143	UM10W-390	7.9	.31	4	.14			5.6	.22			15.1	.60
3.9 - 3.98	.1535-.1567	123386	UM10T-395	6.9	.27	10.2	.40	7.4	.29	10.9	.43	9.7	.38	17.3	.68
		123147	UM10W-395	8.0	.31	4	.14			5.6	.22			15.1	.60
3.95 - 4.03	.1555-.1587	123387	UM10T-400	6.9	.27	10.2	.40	7.4	.29	10.9	.43	9.7	.38	17.3	.68
		123149	UM10W-400	8.0	.31	4.1	.14			5.6	.22			15.1	.60
4 - 4.08	.1574-.1606	123388	UM10T-405	6.9	.27	10.2	.40	7.4	.29	10.9	.43	9.7	.38	17.3	.68
		123151	UM10W-405	8.1	.32	4.1	.14			5.6	.22			15.1	.60
4.05 - 4.13	.1594-.1626	123389	UM10T-410	6.9	.27	10.2	.40	7.4	.29	10.9	.43	9.7	.38	17.3	.68
		123153	UM10W-410	8.1	.32	4.1	.16			5.6	.22			15.1	.60
4.1 - 4.18	.1614-.1646	123390	UM10T-415	6.9	.27	10.2	.40	7.4	.29	10.9	.43	9.7	.38	17.3	.68
		123155	UM10W-415	8.2	.32	4.1	.16			5.6	.22			15.1	.60
4.15 - 4.23	.1634-.1666	123391	UM10T-420	7.1	.28	10.2	.40	7.4	.29	10.9	.43	9.7	.38	17.3	.68
		123157	UM10W-420	8.2	.32	4.2	.16			5.6	.22			15.1	.60
4.2 - 4.28	.1653-.1685	123392	UM10T-425	7.1	.28	10.7	.42	7.4	.29	11.4	.45	9.7	.38	17.3	.68
		123429	UM10V-425	7.3	.29	4.3	.17	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123159	UM10W-425	8.3	.32	4.2	.16	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.25 - 4.33	.1673-.1705	123393	UM10T-430	7.1	.28	10.7	.42	7.4	.29	11.4	.45	9.7	.38	17.3	.68
		123430	UM10V-430	7.3	.29	4.3	.17	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123161	UM10W-430	8.3	.33	4.2	.17	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.3 - 4.38	.1693-.1725	123394	UM10T-435	7.1	.28	10.7	.42	7.4	.29	11.4	.45	9.7	.38	17.3	.68
		123431	UM10V-435	7.4	.29	4.3	.17	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123163	UM10W-435	8.4	.33	4.2	.17	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.35 - 4.43	.1712-.1744	123395	UM10T-440	7.1	.28	10.7	.42	7.4	.29	11.4	.45	9.7	.38	17.3	.68
		123432	UM10V-440	7.4	.29	4.3	.17	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123165	UM10W-440	8.4	.33			7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.4 - 4.48	.1732-.1764	123396	UM10T-445	7.1	.28	10.9	.43	7.4	.29	11.4	.45	9.7	.38	17.3	.68
		123433	UM10V-445	7.5	.29	4.6	.18	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123167	UM10W-445	8.5	.33	4.3	.17	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.45 - 4.53	.1752-.1784	123397	UM10T-450	7.1	.28	10.9	.43	7.4	.29	11.4	.45	9.7	.38	17.3	.68
		123434	UM10V-450	7.5	.30	4.6	.18	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123169	UM10W-450	8.5	.33	4.3	.17	7.1	.28	5.6	.22	9.7	.38	15.1	.60

MICROCONIC OVER-GRIP COLLETS

Part Size Range ØA	SKU	Item Number	ØG max		B		ØC1		D1		ØC2		D2	
			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
4.5 - 4.58 .1771-.1803	123398	UM10T-455	7.1	.28	11.4	.45	7.4	.29	11.9	.47	9.7	.38	17.3	.68
	123435	UM10V-455	7.6	.30	4.9	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123171	UM10W-455	8.6	.34	4.3	.17	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.55 - 4.63 .1791-.1823	123399	UM10T-460	7.4	.29	11.4	.45	7.4	.29	11.9	.47	9.7	.38	17.3	.68
	123436	UM10V-460	7.6	.30	4.9	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123173	UM10W-460	8.6	.34	4.4	.17	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.6 - 4.68 .1811-.1843	123400	UM10T-465	7.4	.29	11.4	.45	7.4	.29	11.9	.47	9.7	.38	17.3	.68
	123437	UM10V-465	7.7	.30	4.9	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123175	UM10W-465	8.7	.34	4.4	.17	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.65 - 4.73 .1830-.1862	123401	UM10T-470	7.4	.29	11.4	.45	7.4	.29	11.9	.47	9.7	.38	17.3	.68
	123438	UM10V-470	7.7	.30	4.9	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123177	UM10W-470	8.7	.34	4.4	.17	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.7 - 4.78 .1850-.1882	123402	UM10T-475	7.4	.29	11.4	.45	7.4	.29	11.9	.47	9.7	.38	17.3	.68
	123439	UM10V-475	7.8	.31	4.9	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123179	UM10W-475	8.8	.34	4.4	.17	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.75 - 4.83 .1870-.1902	123403	UM10T-480	7.4	.29	11.4	.45	7.4	.29	11.9	.47	9.7	.38	17.3	.68
	123440	UM10V-480	7.8	.31	4.9	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123181	UM10W-480	8.8	.35	4.5	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.8 - 4.88 .1889-.1921	123404	UM10T-485	7.6	.30	11.4	.45	7.4	.29	11.9	.47	9.7	.38	17.3	.68
	123441	UM10V-485	7.9	.31	4.9	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123183	UM10W-485	8.9	.35	4.5	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.85 - 4.93 .1909-.1941	123405	UM10T-490	7.6	.30	11.4	.45	7.4	.29	11.9	.47	9.7	.38	17.3	.68
	123442	UM10V-490	7.9	.31	4.9	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123185	UM10W-490	8.9	.35	4.5	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.9 - 4.98 .1929-.1961	123406	UM10T-495	7.6	.30	12.2	.48	7.4	.29	12.7	.50	9.7	.38	17.3	.68
	123443	UM10V-495	8	.31	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123187	UM10W-495	9.0	.35	4.5	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
4.95 - 5.03 .1949-.1981	123407	UM10T-500	7.6	.30	12.2	.48	7.4	.29	12.7	.50	9.7	.38	17.3	.68
	123444	UM10V-500	8	.32	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123189	UM10W-500	9.0	.35	4.6	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5 - 5.08 .1968-.2000	123408	UM10T-505	7.6	.30	12.2	.48	7.4	.29	12.7	.50	9.7	.38	17.3	.68
	123445	UM10V-505	8.1	.32	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123191	UM10W-505	9.1	.36	4.6	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.05 - 5.13 .1988-.2020	123409	UM10T-510	7.6	.30	12.2	.48	7.4	.29	12.7	.50	9.7	.38	17.3	.68
	123446	UM10V-510	8.1	.32	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123193	UM10W-510	9.1	.36	4.6	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.1 - 5.18 .2008-.2040	123410	UM10T-515	7.6	.30	12.2	.48	7.4	.29	12.7	.50	9.7	.38	17.3	.68
	123447	UM10V-515	8.2	.32	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123195	UM10W-515	9.2	.36	4.6	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.15 - 5.23 .2027-.2059	123411	UM10T-520	7.9	.31	12.2	.48	7.4	.29	12.7	.50	9.7	.38	17.3	.68
	123448	UM10V-520	8.2	.32	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123197	UM10W-520	9.2	.36	4.7	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.2 - 5.28 .2047-.2079	123412	UM10T-525	7.9	.31	12.2	.48	7.4	.29	12.7	.50	9.7	.38	17.3	.68
	123449	UM10V-525	8.3	.32	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123199	UM10W-525	9.3	.36	4.7	.18	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.25 - 5.33 .2067-.2099	123413	UM10T-530	7.9	.31	12.2	.48	7.4	.29	12.7	.50	9.7	.38	17.3	.68
	123450	UM10V-530	8.3	.33	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
	123201	UM10W-530	9.3	.37	4.7	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60

MICROCONIC OVER-GRIP COLLETS

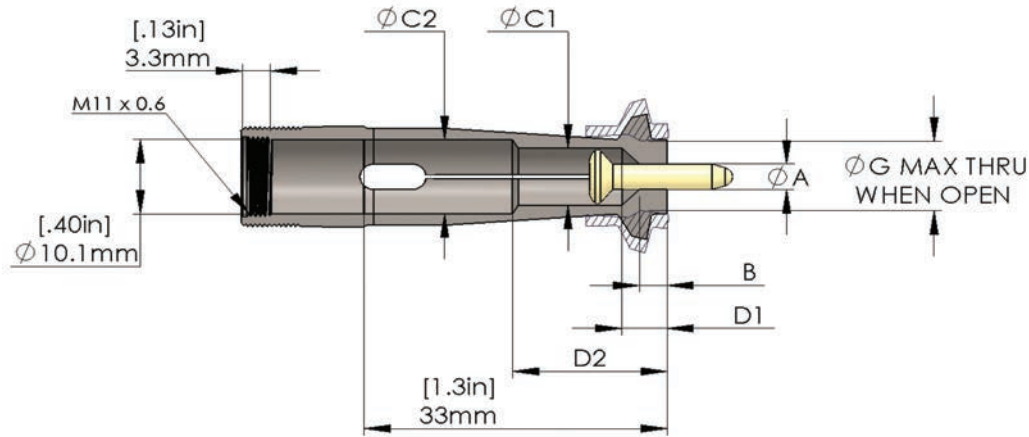


Part Size Range ØA		SKU	Item Number	ØG max		B		ØC1		D1		ØC2		D2	
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
5.3 - 5.38	.2086-.2118	123414	UM10T-535	7.9	.31	13	.51	7.4	.29	13.5	.53	9.7	.38	17.3	.68
		123451	UM10V-535	8.4	.33	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123203	UM10W-535	9.4	.37	4.7	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.35 - 5.43	.2106-.2138	123415	UM10T-540	7.9	.31	13	.51	7.4	.29	13.5	.53	9.7	.38	17.3	.68
		123452	UM10V-540	8.4	.33	4.8	.19	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123205	UM10W-540	9.4	.37	4.7	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.4 - 5.48	.2126-.2158	123416	UM10T-545	7.9	.31	13	.51	7.4	.29	13.5	.53	9.7	.38	17.3	.68
		123453	UM10V-545	8.5	.33	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123207	UM10W-545	9.5	.37	4.8	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.45 - 5.53	.2145-.2177	123417	UM10T-550	8.1	.32	13	.51	7.4	.29	13.5	.53	9.7	.38	17.3	.68
		123454	UM10V-550	8.5	.33	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123209	UM10W-550	9.5	.37	4.8	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.5 - 5.58	.2165-.2197	123418	UM10T-555	8.1	.32	13	.51	7.4	.29	13.5	.53	9.7	.38	17.3	.68
		123455	UM10V-555	8.6	.34	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123211	UM10W-555	9.6	.38	4.8	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.55 - 5.68	.2185-.2217	123419	UM10T-560	8.1	.32	13	.51	7.4	.29	13.5	.53	9.7	.38	17.3	.68
		123456	UM10V-560	8.6	.34	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123213	UM10W-560	9.6	.38	4.8	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.6 - 5.68	.2204-.2236	123420	UM10T-565	8.1	.32	13	.51	7.4	.29	13.5	.53	9.7	.38	17.3	.68
		123457	UM10V-565	8.7	.34	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123215	UM10W-565	9.7	.38	4.9	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.65 - 5.73	.2224-.2256	123421	UM10T-570	8.1	.32	13	.51	7.4	.29	13.5	.53	9.7	.38	17.3	.68
		123458	UM10V-570	8.7	.34	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123217	UM10W-570	9.7	.38	4.9	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.7 - 5.78	.2244-.2276	123422	UM10T-575	8.1	.32	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123459	UM10V-575	8.8	.34	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123219	UM10W-575	9.8	.38	4.9	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.75 - 5.83	.2263-.2295	123423	UM10T-580	8.1	.32	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123460	UM10V-580	8.8	.35	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123221	UM10W-580	9.8	.39	4.9	.19	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.8 - 5.88	.2283-.2315	123424	UM10T-585	8.4	.33	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123461	UM10V-585	8.9	.35	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123223	UM10W-585	9.9	.39	5	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.85 - 5.93	.2303-.2335	123425	UM10T-590	8.4	.33	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123462	UM10V-590	8.9	.35	5.1	.20	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123225	UM10W-590	9.9	.39	5	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60

MICROCONIC OVER-GRIP COLLETS

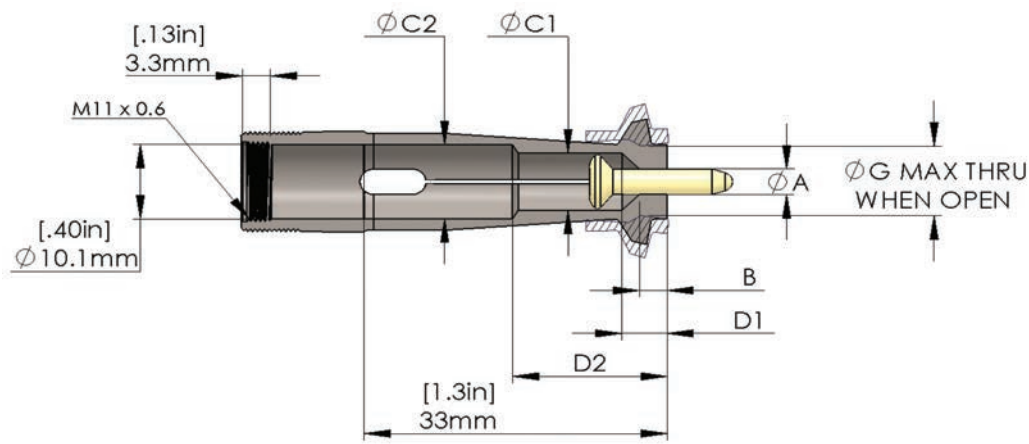
Part Size Range ØA		SKU	Item Number	ØG max		B		ØC1		D1		ØC2		D2	
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
5.9 - 5.98	.2323-.2355	123426	UM10T-595	8.4	.33	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123463	UM10V-595	9	.35	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123227	UM10W-595	10	.396	5	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60
5.95 - 6.03	.2342-.2374	123427	UM10T-600	8.4	.33	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123464	UM10V-600	9	.35	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123229	UM10W-600	10	.396	5	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6 - 6.08	.2362-.2394	123509	UM10T-605	8.4	.33	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123465	UM10V-605	9.1	.36	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123231	UM10W-605	10	.396	5.1	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.05 - 6.13	.2382-.2414	123510	UM10T-610	8.6	.34	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123466	UM10V-610	9.1	.36	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123233	UM10W-610	10	.396	5.1	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.1 - 6.18	.2401-.2433	123511	UM10T-615	8.6	.34	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123467	UM10V-615	9.2	.36	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123235	UM10W-615	10	.396	5.1	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.15 - 6.23	.2421-.2453	123512	UM10T-620	8.6	.34	13.7	.54	7.4	.29	14	.55	9.7	.38	17.3	.68
		123468	UM10V-620	9.2	.36	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123237	UM10W-620	10	.396	5.1	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.2 - 6.28	.2441-.2473	123513	UM10T-625	8.6	.34	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123469	UM10V-625	9.3	.36	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123239	UM10W-625	10	.396	5.2	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.25 - 6.33	.2460-.2492	123514	UM10T-630	8.6	.34	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123470	UM10V-630	9.3	.37	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123241	UM10W-630	10	.396	5.2	.20	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.3 - 6.38	.2480-.2512	123515	UM10T-635	8.6	.34	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123471	UM10V-635	9.4	.37	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123243	UM10W-635	10	.396	5.2	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.35 - 6.43	.2500-.2532	123516	UM10T-640	8.9	.35	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123472	UM10V-640	9.4	.37	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123245	UM10W-640	10	.396	5.2	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.4 - 6.48	.2519-.2551	123517	UM10T-645	8.9	.35	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123473	UM10V-645	9.5	.37	5.3	.21	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123247	UM10W-645	10	.396	5.3	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.45 - 6.53	.2539-.2571	123518	UM10T-650	8.9	.35	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123474	UM10V-650	9.5	.37	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123249	UM10W-650	10	.396	5.3	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.5 - 6.58	.2559-.2591	123519	UM10T-655	8.9	.35	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123475	UM10V-655	9.6	.38	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123251	UM10W-655	10	.396	5.3	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.55 - 6.63	.2578-.2610	123520	UM10T-660	8.9	.35	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123476	UM10V-660	9.6	.38	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123253	UM10W-660	10	.396	5.3	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.6 - 6.68	.2598-.2630	123521	UM10T-665	9.1	.36	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123477	UM10V-665	9.7	.38	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123255	UM10W-665	10	.396	5.4	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.65 - 6.73	.2618-.2650	123522	UM10T-670	9.1	.36	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123478	UM10V-670	9.7	.38	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123257	UM10W-670	10	.396	5.4	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60

MICROCONIC OVER-GRIP COLLETS



Part Size Range ØA		SKU	Item Number	ØG max		B		ØC1		D1		ØC2		D2	
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
6.7 - 6.78	.2637-.2669	123523	UM10T-675	9.1	.36	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123479	UM10V-675	9.8	.38	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123259	UM10W-675	10	.396	5.4	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.75 - 6.83	.2657-.2689	123524	UM10T-680	9.1	.36	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123480	UM10V-680	9.8	.39	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123261	UM10W-680	10	.396	5.4	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.8 - 6.88	.2677-.2709	123525	UM10T-685	9.1	.36	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123480	UM10V-685	9.9	.39	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123263	UM10W-685	10	.396	5.5	.21	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.85 - 6.93	.2697-.2729	123526	UM10T-690	9.4	.37	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123482	UM10V-690	9.9	.39	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123265	UM10W-690	10	.396	5.5	.22	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.9 - 6.98	.2716-.2748	123527	UM10T-695	9.4	.37	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123483	UM10V-695	10	.396	5.6	.22	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123267	UM10W-695	10	.396	5.5	.22	7.1	.28	5.6	.22	9.7	.38	15.1	.60
6.95 - 7.03	.2736-.2768	123528	UM10T-700	9.4	.37	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123484	UM10V-700	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123269	UM10W-700	10	.396	5.5	.22	7.1	.28	5.6	.22	9.7	.38	15.1	.60
7 - 7.08	.2756-.2788	123529	UM10T-705	9.4	.37	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123485	UM10V-705	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123271	UM10W-705	10	.396	5.6	.22	7.1	.28	5.6	.22	9.7	.38	15.1	.60
7.05 - 7.13	.2775-.2807	123530	UM10T-710	9.4	.37	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123486	UM10V-710	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123273	UM10W-710	10	.396	5.6	.22	7.1	.28	5.6	.22	9.7	.38	15.1	.60
7.1 - 7.18	.2795-.2827	123531	UM10T-715	9.7	.38	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123487	UM10V-715	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123275	UM10W-715	10	.396	5.6	.22	7.1	.28	5.6	.22	9.7	.38	15.1	.60
7.15 - 7.23	.2815-.2847	123532	UM10T-720	9.7	.38	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123488	UM10V-720	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46
		123277	UM10W-720	10	.396	5.6	.22	7.1	.28	5.6	.22	9.7	.38	15.1	.60
7.2 - 7.28	.2834-.2866	123533	UM10T-725	9.7	.38	14	.55	7.4	.29	14	.55	9.7	.38	17.3	.68
		123489	UM10V-725	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.25 - 7.33	.2854-.2886	123490	UM10V-730	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.3 - 7.38	.2874-.2903	123491	UM10V-735	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.35 - 7.43	.2893-.2925	123492	UM10V-740	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.4 - 7.48	.2913-.2945	123493	UM10V-745	10	.396	5.8	.23	8.9	.35	6.6	.26	9.4	.37	11.7	.46

MICROCONIC OVER-GRIP COLLETS



Part Size Range ØA		SKU	Item Number	ØG max		B		ØC1		D1		ØC2		D2	
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
7.45 - 7.53	.2933-.2965	123494	UM10V-750	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.5 - 7.58	.2952-.2984	123495	UM10V-755	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.55 - 7.63	.2972-.3004	123496	UM10V-760	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.6 - 7.68	.2992-.3024	123497	UM10V-765	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.65 - 7.73	.3011-.3043	123498	UM10V-770	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.7 - 7.78	.3031-.3063	123499	UM10V-775	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.75 - 7.83	.3051-.3083	123500	UM10V-780	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.8 - 7.88	.3071-.3103	123501	UM10V-785	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.85 - 7.93	.3090-.3122	123502	UM10V-790	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.9 - 7.98	.3110-.3142	123503	UM10V-795	10	.396	6.1	.24	8.9	.35	6.6	.26	9.4	.37	11.7	.46
7.95 - 8.03	.3130-.3162	123504	UM10V-800	10	.396	6.4	.25	8.9	.35	6.6	.26	9.4	.37	11.7	.46
8 - 8.08	.3149-.3181	123505	UM10V-805	10	.396	6.4	.25	8.9	.35	6.6	.26	9.4	.37	11.7	.46
8.05 - 8.13	.3169-.3201	123506	UM10V-810	10	.396	6.4	.25	8.9	.35	6.6	.26	9.4	.37	11.7	.46
8.1 - 8.18	.3189-.3221	123507	UM10V-815	10	.396	6.4	.25	8.9	.35	6.6	.26	9.4	.37	11.7	.46
8.15 - 8.23	.3208-.3240	123508	UM10V-820	10	.396	6.4	.25	8.9	.35	6.6	.26	9.4	.37	11.7	.46



INSTALLATION INSTRUCTIONS FOR SWISS TYPE MACHINE



Installing the Microconic Cartridge:

1. Remove any previous collet from the machine by normal means.



2. Remove the collet spring (this is not used with Microconic).



3. Make sure the machine spindle sleeve is clean and wiped free of any particles.



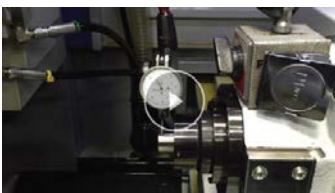
4. Insert the Microconic cartridge (without a collet yet), and seat it with a few twists to displace any dust particles.



5. Screw on the spindle nose cap normally.



6. Adjust the machine's collet closer normally for firm closing force. The Microconic cartridge is now installed. The estimated time for above steps is under 5 minutes.

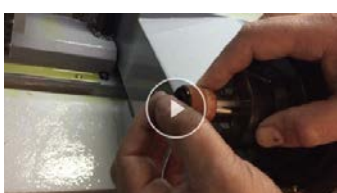


If desired, the working concentricity of the machine can now be verified using a dial test indicator measuring the runout of the cartridge nose. Machine should be in the CLOSED COLLET condition for this test. If improvement is needed, first try removing the cartridge and carefully cleaning all mating surfaces of the machine and cartridge, then reinstalling the cartridge. If runout is still excessive, further troubleshooting can be performed to determine the source of the runout in the machine. On machines in excellent condition, runout of less than 2 microns (.0001") should be achieved. The cartridge can remain in the machine and does not have to be removed to change Microconic collets.



Installing and adjusting Microconic Collets:

1. With cartridge already installed per above, put machine in CLOSED COLLET condition.
2. Loosen the adjustment set screw ½ turn with the included Masa screwdriver.
3. Insert the Microconic collet into the cartridge.
4. Screw the collet in using the MicroGrad wrench.
5. Insert a gage pin the diameter of your work piece.
6. Continue to screw in the collet with the MicroGrad wrench until it closes onto the gage pin. This is the ZERO CLAMPING reference position on the MicroGrad dial.*
7. Back-off 1 graduation of the MicroGrad wrench and remove the gage pin.
8. Return the MicroGrad dial to the ZERO CLAMPING reference position, and then rotate additional graduations to set the clamping force (see the MicroGrad Setting table on page 6). Remove the MicroGrad wrench when done.
9. Tighten the adjustment set screw with the Masa screwdriver. The collet is now installed and adjusted. The estimated time for above steps is under 2 minutes. *For over-grip collets additional adjustment steps are needed. See instructions included with each cartridge and over-grip collet, and also at [masatool.com/installation](https://www.masatool.com/installation).





WARRANTY

Masa Tool warrants that the products will be free from defects in material and workmanship.

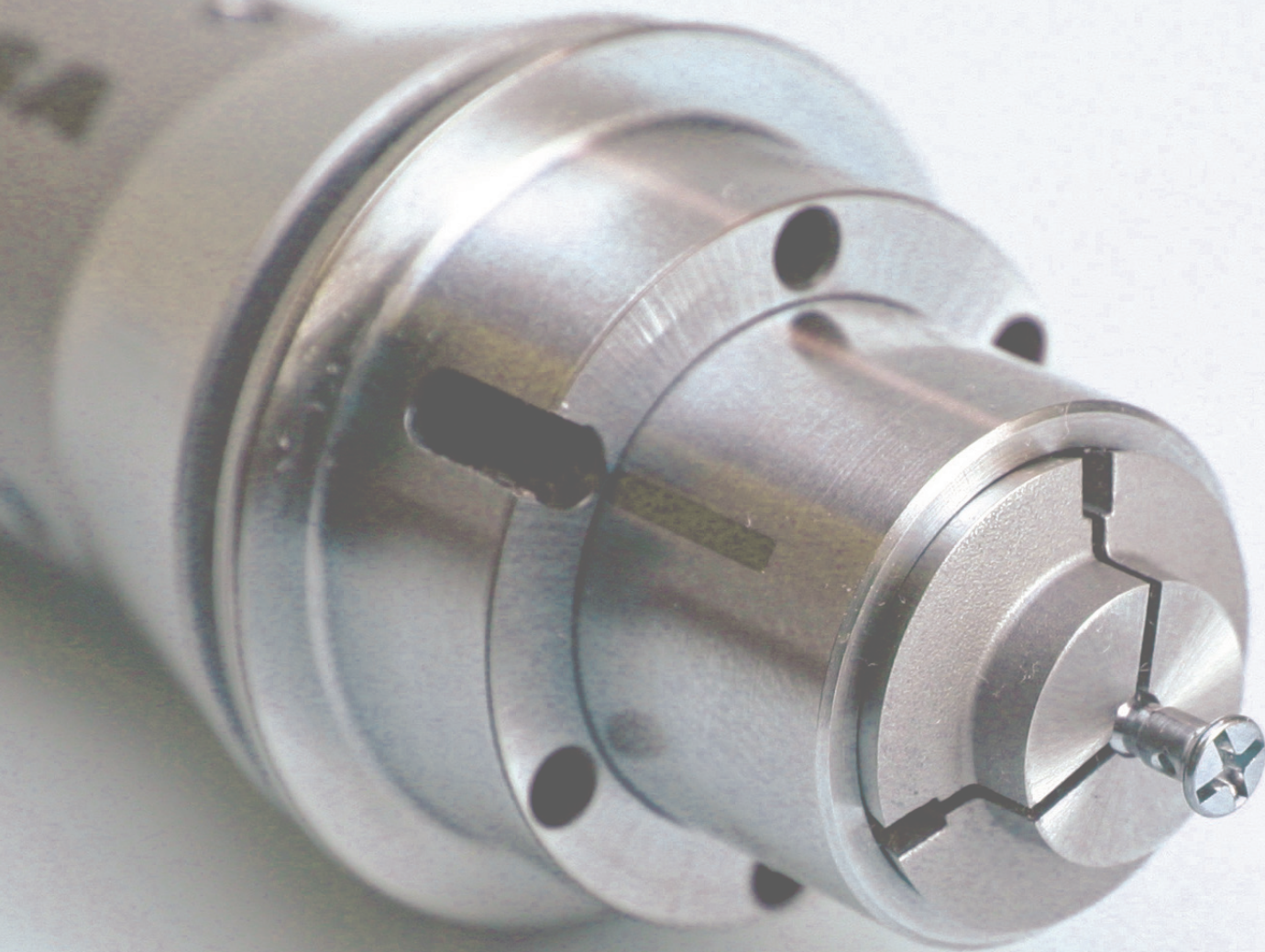
- No product shall be returned to us without a return authorization (RMA) number.
- If you find any failure of our products to conform to our stated dimensions notify us this within 90 days from date of receipt of the product, we will replace the defective product or make suitable repairs. Stated performance claims apply only to product in non-worn condition. Catalog statements are valid as of the issue date and are subject to change without notice.
- If we are unable to correct the nonconformity by replacing the product or making suitable repairs we will refund the purchase price upon receipt of the nonconforming product FOB our plant.
- In no event shall we be liable either directly or by way of contribution or indemnity, for direct, special, incidental or consequential damages such as, but not limited to, property damage, loss of profit, or damages based on loss of use of the product, whether the claim for any such damages be based on warranty, express or implied, contract, tort, or otherwise.
- This warranty does not apply to products that are misapplied, altered, or abused. The foregoing is our sole warranty with respect to the product.
- We make no other warranties, express or implied, including implied warranties of merchantability and fitness for a particular purpose.
- Orders for special tools, non-catalog or modified tools, are accepted on a no cancellation basis, and are not returnable. A confirming purchase order and approved drawing is required prior to any work beginning on special tools.

DISTRIBUTOR ORDER AND SHIPPING POLICY

- Orders will be accepted only by email. Send orders to sales@masatool.com.
- Only orders that are clearly legible and are on a distributor letterhead or official company purchase order form, showing a valid PO number will be processed.
- All orders are shipped FOB 2575 Jason Court, Oceanside, CA 92056-3592.
- Customer Service hours are 8:00 AM until 5:00 PM, PST, Monday through Friday.

PAYMENT TERMS

- Standard Payment terms are Net 30 days.
- Credit card payments are accepted.
- FOB point is 2575 Jason Court, Oceanside, CA 92056-3592. Freight will be prepaid and added to invoice unless otherwise specified.



MASA
MICROCONIC SYSTEM

M A S A T O O L . C O M

Masa Tool Inc.

2575 Jason Court
Oceanside, CA 92056-3592

tel: 760.732.1422
email: info@masatool.com

Issued 31 August 2018