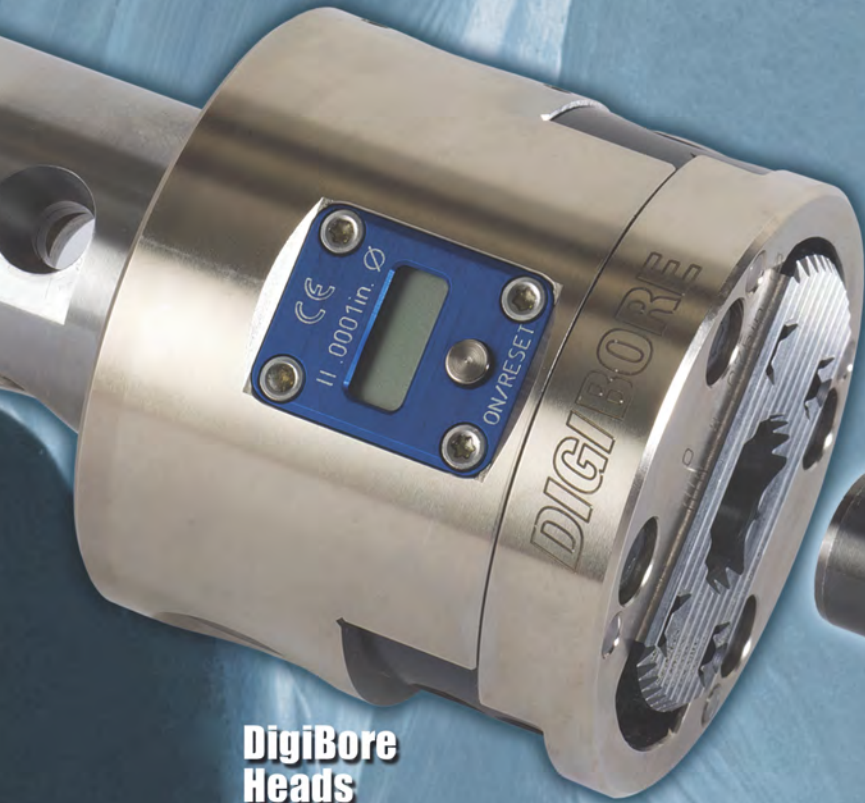


WOHLHAUPTER

plus...

Micro-Quik®

QUICK CHANGE TOOLING



**DigiBore
Heads**



**...a perfect combination
for precision, smaller
diameter boring!**



**263 (236)
Heads**



Boring Tools

QMBB Series: .015-.045" (.38-1.14mm)
 QBB Series: .050-.290" (1.27-7.37mm)
 QBM Series: .118-.230" (3.60-5.84mm)



QTHM Toolholders

16mm for 263 (236) heads
 17mm for DigiBore heads

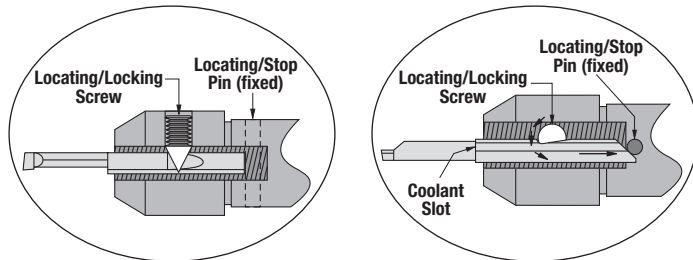


- Uncoated or AlTiN coated carbide
- Elliptical shanks for maximum rigidity
- Coolant through capabilities

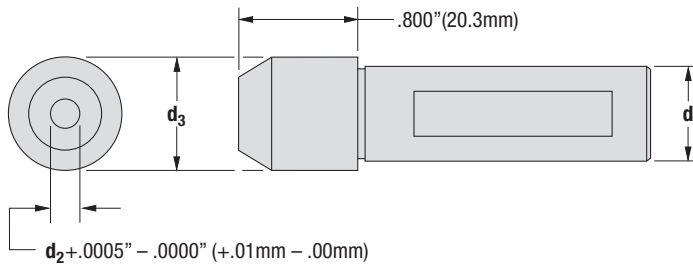


- 3 point locking/locating system
- Heat treated w/coolant through capabilities.

• Unique... "3 point" locking/locating system ensures tool to tool change repeatability of $\pm 0.0005"$ / ± 0.01 mm from centerline.



- Heat-treated toolholders
- Coolant through capabilities



QTHM Toolholders

Dimensions						Order No.	Price**
d_1		d_2^*		d_3			
mm	in	mm	in	mm	in		
16	.630	4.76	.1875	19.1	.750	QTHM-316	\$85.00
16	.630	6.35	.2500	19.1	.750	QTHM-416	\$85.00
16	.630	7.94	.3125	22.2	.875	QTHM-516	\$85.00
16	.630	9.53	.3750	25.4	1.00	QTHM-616	\$85.00
17	.670	4.76	.1875	19.1	.750	QTHM-317	\$85.00
17	.670	6.35	.2500	19.1	.750	QTHM-417	\$85.00
17	.670	9.53	.3750	25.4	1.00	QTHM-617	\$85.00

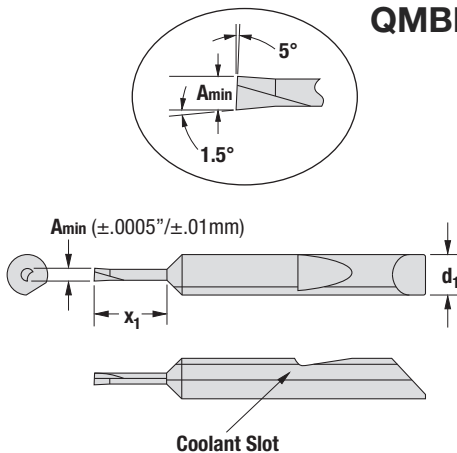
* $+ .0005 - .0000"$ ($+ .01 - .00$ mm)

**Prices are subject to change. Contact mr@wohlhaupter.com or call 937/885-1878 for current pricing.

Item	Order No.	Price*
Quick Change Set Screw	QC-1	3.50
Quick Change Set Screw (pkg of 10)	QC-10	25.00

*Prices are subject to change. Contact mr@wohlhaupter.com or call 937/885-1878 for current pricing.

QMBB Series: Miniature Boring Tools $\phi.015-.045"$ ($\phi.38-1.14$ mm)



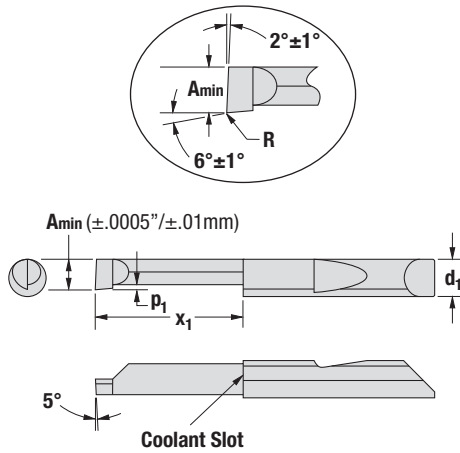
QMBB Miniature Boring Tools Tolerances:

Shank Diameter: $- .0001"$ to $- .0002"$ ($- .005$ mm to $- .01$ mm)
 Minimum Bore Diameter: $\pm .0005"$ (± 0.01 mm)
 Maximum Bore Depth: $+ .050"$ ($+ 1.27$ mm)

Boring range	Dimensions								Uncoated Carbide		Coated AlTiN	
	A_{min}		d_1		x_1		p_1		Order No.	Price*	Order No.	Price*
	in	mm	in	mm	in	mm	in	mm				
.015	0.38	.1875	4.8	.050	1.3	.005	0.1	QMBB-015050	\$30.85	QMBB-015050x	\$35.15	
.020	0.51	.1875	4.8	.075	1.9	.005	0.1	QMBB-020075	\$30.85	QMBB-020075x	\$35.15	
.025	0.64	.1875	4.8	.100	2.5	.005	0.1	QMBB-025100	\$27.15	QMBB-025100x	\$31.45	
.030	0.76	.1875	4.8	.100	2.5	.005	0.1	QMBB-030100	\$27.15	QMBB-030100x	\$31.45	
.035	0.89	.1875	4.8	.100	2.5	.005	0.1	QMBB-035100	\$27.15	QMBB-035100x	\$31.45	
.035	0.89	.1875	4.8	.150	3.8	.005	0.1	QMBB-035150	\$27.15	QMBB-035150x	\$31.45	
.040	1.02	.1875	4.8	.150	3.8	.005	0.1	QMBB-040150	\$27.15	QMBB-040150x	\$31.45	
.040	1.02	.1875	4.8	.200	5.1	.005	0.1	QMBB-040200	\$27.15	QMBB-040200x	\$31.45	
.045	1.14	.1875	4.8	.150	3.8	.005	0.1	QMBB-045150	\$27.15	QMBB-045150x	\$31.45	
.045	1.14	.1875	4.8	.200	5.1	.005	0.1	QMBB-045200	\$27.15	QMBB-045200x	\$31.45	

*Prices are subject to change. Contact mr@wohlhaupter.com or call 937/885-1878 for current pricing.

QBB Series: Boring Tools ϕ .050–.290" (ϕ 1.27–7.37mm)



Right hand boring tool shown,
left hand available on request.

QBB Boring Tools Tolerances:

Shank Diameter: -.0001" to -.0002" (-.005mm to -.01mm)

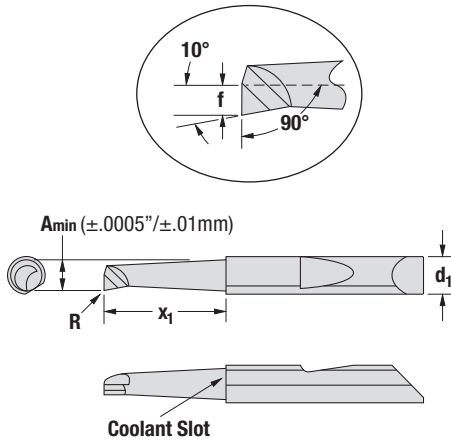
Minimum Bore Diameter: \pm .0005" (\pm .01mm)

Maximum Bore Depth: +.050" (+1.27mm)

Boring range	Dimensions								Uncoated Carbide		Coated AlTiN			
	Amin		d ₁		x ₁		r ₁		p ₁		Order No.	Price*	Order No.	Price*
	in	mm	in	mm	in	mm	in	mm	in	mm				
.050	1.27	1875	4.8	.150	3.8	0	0	.013	0.33	QBB-050150	\$21.25	QBB-050150x	\$24.20	
.050	1.27	1875	4.8	.200	5.1	0	0	.013	0.33	QBB-050200	\$21.25	QBB-050200x	\$24.20	
.050	1.27	1875	4.8	.300	7.6	0	0	.013	0.33	QBB-050300	\$21.25	QBB-050300x	\$24.20	
.050	1.27	1875	4.8	.400	10.2	0	0	.013	0.33	QBB-050400	\$21.25	QBB-050400x	\$24.20	
.060	1.52	1875	4.8	.150	3.8	0	0	.015	0.38	QBB-060150	\$21.25	QBB-060150x	\$24.20	
.060	1.52	1875	4.8	.200	5.1	0	0	.015	0.38	QBB-060200	\$21.25	QBB-060200x	\$24.20	
.060	1.52	1875	4.8	.300	7.6	0	0	.015	0.38	QBB-060300	\$21.25	QBB-060300x	\$24.20	
.060	1.52	1875	4.8	.400	10.2	0	0	.015	0.38	QBB-060400	\$21.25	QBB-060400x	\$24.20	
.060	1.52	1875	4.8	.500	12.7	0	0	.015	0.38	QBB-060500	\$21.25	QBB-060500x	\$24.20	
.080	2.03	1875	4.8	.200	5.1	0	0	.020	0.51	QBB-080200	\$21.25	QBB-080200x	\$24.20	
.080	2.03	1875	4.8	.300	7.6	0	0	.020	0.51	QBB-080300	\$21.25	QBB-080300x	\$24.20	
.080	2.03	1875	4.8	.500	12.7	0	0	.020	0.51	QBB-080500	\$21.25	QBB-080500x	\$24.20	
.080	2.03	1875	4.8	.600	15.2	0	0	.020	0.51	QBB-080600	\$21.25	QBB-080600x	\$24.20	
.100	2.54	1875	4.8	.200	5.1	.003	0.08	.025	0.64	QBB-100200	\$22.45	QBB-100200x	\$25.45	
.100	2.54	1875	4.8	.300	7.6	.003	0.08	.025	0.64	QBB-100300	\$22.45	QBB-100300x	\$25.45	
.100	2.54	1875	4.8	.500	12.7	.003	0.08	.025	0.64	QBB-100500	\$22.45	QBB-100500x	\$25.45	
.100	2.54	1875	4.8	.700	17.8	.003	0.08	.025	0.64	QBB-100700	\$22.45	QBB-100700x	\$25.45	
.110	2.79	1875	4.8	.300	7.6	.003	0.08	.028	0.71	QBB-110300	\$22.45	QBB-110300x	\$25.45	
.110	2.79	1875	4.8	.500	12.7	.003	0.08	.028	0.71	QBB-110500	\$22.45	QBB-110500x	\$25.45	
.110	2.79	1875	4.8	.700	17.8	.003	0.08	.028	0.71	QBB-110700	\$22.45	QBB-110700x	\$25.45	
.120	3.05	1875	4.8	.250	6.4	.003	0.08	.030	0.76	QBB-120250	\$22.45	QBB-120250x	\$25.45	
.120	3.05	1875	4.8	.350	8.9	.003	0.08	.030	0.76	QBB-120350	\$22.45	QBB-120350x	\$25.45	
.120	3.05	1875	4.8	.500	12.7	.003	0.08	.030	0.76	QBB-120500	\$22.45	QBB-120500x	\$25.45	
.120	3.05	1875	4.8	.700	17.8	.003	0.08	.030	0.76	QBB-120700	\$22.45	QBB-120700x	\$25.45	
.120	3.05	1875	4.8	.800	20.3	.003	0.08	.030	0.76	QBB-120800	\$22.45	QBB-120800x	\$25.45	
.140	3.56	1875	4.8	.400	10.2	.003	0.08	.035	0.89	QBB-140400	\$22.45	QBB-140400x	\$25.45	
.140	3.56	1875	4.8	.600	15.2	.003	0.08	.035	0.89	QBB-140600	\$22.45	QBB-140600x	\$25.45	
.140	3.56	1875	4.8	.800	20.3	.003	0.08	.035	0.89	QBB-140800	\$22.45	QBB-140800x	\$25.45	
.160	4.06	1875	4.8	.400	10.2	.003	0.08	.040	1.02	QBB-160400	\$22.45	QBB-160400x	\$25.45	
.160	4.06	1875	4.8	.600	15.2	.003	0.08	.040	1.02	QBB-160600	\$22.45	QBB-160600x	\$25.45	
.160	4.06	1875	4.8	.750	19.1	.003	0.08	.040	1.02	QBB-160750	\$22.45	QBB-160750x	\$25.45	
.160	4.06	1875	4.8	1.00	25.4	.003	0.08	.040	1.02	QBB-1601000	\$22.45	QBB-1601000x	\$25.45	
.180	4.57	2500	6.4	.500	12.7	.005	0.13	.045	1.14	QBB-180500	\$24.25	QBB-180500x	\$28.55	
.180	4.57	2500	6.4	.750	19.1	.005	0.13	.045	1.14	QBB-180750	\$24.25	QBB-180750x	\$28.55	
.180	4.57	2500	6.4	1.00	25.4	.005	0.13	.045	1.14	QBB-1801000	\$24.25	QBB-1801000x	\$28.55	
.180	4.57	2500	6.4	1.25	31.8	.005	0.13	.045	1.14	QBB-1801250	\$24.25	QBB-1801250x	\$28.55	
.180	4.57	2500	6.4	1.50	38.1	.005	0.13	.045	1.14	QBB-1801500	\$28.50	QBB-1801500x	\$32.80	
.200	5.08	2500	6.4	.500	12.7	.005	0.13	.050	1.27	QBB-200500	\$24.25	QBB-200500x	\$28.55	
.200	5.08	2500	6.4	.750	19.1	.005	0.13	.050	1.27	QBB-200750	\$24.25	QBB-200750x	\$28.55	
.200	5.08	2500	6.4	1.00	25.4	.005	0.13	.050	1.27	QBB-2001000	\$24.25	QBB-2001000x	\$28.55	
.200	5.08	2500	6.4	1.20	30.5	.005	0.13	.050	1.27	QBB-2001200	\$24.25	QBB-2001200x	\$28.55	
.200	5.08	2500	6.4	1.50	38.1	.005	0.13	.050	1.27	QBB-2001500	\$28.50	QBB-2001500x	\$32.80	
.230	5.84	3125	7.9	.500	12.7	.005	0.13	.058	1.47	QBB-230500	\$32.60	QBB-230500x	\$38.95	
.230	5.84	3125	7.9	.750	19.1	.005	0.13	.058	1.47	QBB-230750	\$32.60	QBB-230750x	\$38.95	
.230	5.84	3125	7.9	1.00	25.4	.005	0.13	.058	1.47	QBB-2301000	\$32.60	QBB-2301000x	\$38.95	
.230	5.84	3125	7.9	1.25	31.8	.005	0.13	.058	1.47	QBB-2301250	\$32.60	QBB-2301250x	\$38.95	
.230	5.84	3125	7.9	1.50	38.1	.005	0.13	.058	1.47	QBB-2301500	\$38.50	QBB-2301500x	\$44.85	
.230	5.84	3125	7.9	1.60	40.7	.005	0.13	.058	1.47	QBB-2301600	\$38.50	QBB-2301600x	\$44.85	
.290	7.37	3125	7.9	.500	12.7	.005	0.13	.073	1.85	QBB-290500	\$32.60	QBB-290500x	\$38.95	
.290	7.37	3125	7.9	.750	19.1	.005	0.13	.073	1.85	QBB-290750	\$32.60	QBB-290750x	\$38.95	
.290	7.37	3125	7.9	1.00	25.4	.005	0.13	.073	1.85	QBB-2901000	\$32.60	QBB-2901000x	\$38.95	
.290	7.37	3125	7.9	1.25	31.8	.005	0.13	.073	1.85	QBB-2901250	\$32.60	QBB-2901250x	\$38.95	
.290	7.37	3125	7.9	1.50	38.1	.005	0.13	.073	1.85	QBB-2901500	\$38.50	QBB-2901500x	\$44.85	
.290	7.37	3125	7.9	1.75	44.5	.005	0.13	.073	1.85	QBB-2901750	\$38.50	QBB-2901750x	\$44.85	

*Prices are subject to change. Contact mr@wohlhaupter.com or call 937/885-1878 for current pricing.

QBM Series: Boring Tools ϕ .118-.230" (ϕ 3.00-5.84mm)



QBM Boring Tools Tolerances:

Shank Diameter: $-.0001$ " to $-.0002$ " ($-.005$ mm to $-.01$ mm)

Minimum Bore Diameter: $\pm .0005$ " ($\pm .01$ mm)

Maximum Bore Depth: $+.050$ " ($+1.27$ mm)

Boring range	Dimensions										Uncoated Carbide		Coated AlTiN	
	Amin		d ₁		x ₁		r ₁		f		Order No.	Price*	Order No.	Price*
	in	mm	in	mm	in	mm	in	mm	in	mm				
.118	3.00	.2500	6.4	.500	12.7	.003	0.08	.055	1.4		QBM-118500	\$24.25	QBM-118500x	\$28.55
.118	3.00	.2500	6.4	.750	19.1	.003	0.08	.055	1.4		QBM-118750	\$24.25	QBM-118750x	\$28.55
.150	3.81	.2500	6.4	.500	12.7	.003	0.08	.071	1.8		QBM-150500	\$24.25	QBM-150500x	\$28.55
.150	3.81	.2500	6.4	.750	19.1	.003	0.08	.071	1.8		QBM-150750	\$24.25	QBM-150750x	\$28.55
.200	5.08	.2500	6.4	.500	12.7	.008	0.20	.095	2.4		QBM-200500	\$24.25	QBM-200500x	\$28.55
.200	5.08	.2500	6.4	.750	19.1	.008	0.20	.095	2.4		QBM-200750	\$24.25	QBM-200750x	\$28.55
.200	5.08	.2500	6.4	1.25	31.8	.008	0.20	.095	2.4		QBM-2001250	\$24.25	QBM-2001250x	\$28.55
.230	5.84	.2500	6.4	.750	19.1	.008	0.20	.110	2.8		QBM-230750	\$24.25	QBM-230750x	\$28.55
.230	5.84	.2500	6.4	1.25	31.8	.008	0.20	.110	2.8		QBM-2301250	\$24.25	QBM-2301250x	\$28.55
.230	5.84	.2500	6.4	1.50	38.1	.008	0.20	.110	2.8		QBM-2301500	\$27.50	QBM-2301500x	\$31.80

*Prices are subject to change. Contact mr@wohlhaupter.com or call 937/885-1878 for current pricing.

Application Information

The recommendations shown here should be considered only as Starting Points. As a general rule, reduce feed rates for smaller diameter tools.

When selecting the most effective tool for a given operation, consideration must be given to rigidity of setups, tool overhang, tool clearances, and surface finish requirements... to mention a few possibilities.

Surface feeds, feed rates, machine RPM, and depth of cut will vary depending on the material being machined. adjustments and variations may be necessary to achieve optimum results and maximum tool life.

Caution: During machining operations, it is recommended that the operator(s) and/or observer(s) use precautions such as, but not limited to, safety glasses with wrap around eye protection and/or safety shields on the machine(s). Grinding products generated by MICRO 100 tools will produce a dust/mist that may be hazardous. Using common safety practices is recommended.

Materials	Speed		Feed	
	v=f/min	v=m/min	inch/r	mm/r
Aluminum/Aluminum Alloys	750-2000	229-610	.005-.012	.127-.309
Brass/Bronze	300-900	91-274	.001-.005	.025-.127
Copper/Copper Alloys	600-900	183-274	.003-.005	.076-.254
Cast Iron, Soft	470-480	143-146	.003-.010	.076-.254
Cast Iron, Hard	300-400	91-122	.003-.010	.076-.254
Ductile Irons	300-400	91-122	.003-.010	.076-.254
Malleable Iron	350-400	107-122	.003-.010	.076-.254
Magnesium, Magnesium Alloys	750-2000	229-610	.005-.012	.127-.309
Monel/High Nickel Steels	80-120	24-37	.001-.003	.025-.076
Nickel Base Hi-Temperature Alloys	100-250	30-76	.002-.005	.051-.076
Inconels	70-120	21-37	.001-.003	.025-.076
Rene 41	60-100	18-30	.001-.002	.025-.051
Plastics	700-2000	213-610	.002-.006	.051-.152
Plastics, Glass Filled	700-800	213-244	.001-.003	.025-.076
Refractory Alloys	700-800	213-244	.001-.003	.025-.076
Steels, Low Carbon	350-475	107-145	.003-.008	.076-.203
Steels, Medium Carbon	300-400	91-122	.003-.008	.076-.203
Steels, Hardened 35-40 RC	90-125	27-38	.001-.003	.025-.076
Steels, Hardened 40+ RC	90-125	27-38	.001-.002	.025-.051
Steels, D-2	150-250	46-76	.002-.004	.051-.102
Stainless Steels, 316	100-250	30-76	.001-.004	.025-.102
Stainless Steels, 304	100-250	30-76	.001-.004	.025-.102
Stainless Steels, 17-4	300-400	91-122	.002-.004	.051-.102
Stainless Steels, 15-5	300-400	92-122	.002-.004	.051-.102
Titanium, Soft	90-250	27-76	.001-.003	.025-.076
Titanium, Hard	90-250	27-76	.001-.003	.025-.076
Waspalloys	70-120	21-37	.001-.003	.025-.076

WOHLHAUPTER
"The Finest In Precision"

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