



Drill Bushing and Workpiece Tolerance Relative Positioning

Pre-drilled Hole A large pre-drilled hole (larger than D-a) ensures







Machine Thrust Force



(+) Plus Parts for Diameter Enlargement.

By exchanging only the peripheral cartridge and guide pads, the original head diameter can be increased up to .197". (Standard plus parts = .039", .079", .118", .157", .197")

DI

Diameter inch

				+ Pius							
	+.039	+.079 +.	118 +.157	+.197							
us Cartidge - CAOD											
Original	+.039 inch	+.079 inch	+.118 inch	+.157 inch	+.197 inch						
CAOD-080	CAOD-080+.039	CAOD-080+.079	-	-	-						
CAOD-0845	CAOD-0845+.039	CAOD-0845+.079	CAOD-0845+.118	-	-						
CAOD-103	CAOD-103+.039	CAOD-103+.079	CAOD-103+.118	CAOD-103+.157	-						
CAOD-142	CAOD-142+.039	CAOD-142+.079	CAOD-142+.118	CAOD-142+.157	CAOD-142+.197						
CAOD-170	CAOD-170+.039	CAOD-170+.079	CAOD-170+.118	CAOD-170+.157	CAOD-170+.197						
us Cartidge - CA Driginal Cartridge	ORC +.039 inch	+.079 inch	+.118 inch	+.157 inch	+.197 inch						
us Cartidge - CAC Driginal Cartridge CAORC-0845	ORC +.039 inch CAORC-0845+.039	+.079 inch CAORC-0845+.079	+.118 inch CAORC-0845+.118	+.157 inch	+.197 inch						
us Cartidge - CAC Driginal Cartridge CAORC-0845 CAORC-103	ORC +.039 inch CAORC-0845+.039 CAORC-103+.039	+.079 inch CAORC-0845+.079 CAORC-103+.079	+.118 inch CAORC-0845+.118 CAORC-103+.118	+.157 inch - CAORC-103+.157	+.197 inch - -						
us Cartidge - CAC Driginal Cartridge CAORC-0845 CAORC-103 CAORC-142	ORC +.039 inch CAORC-0845+.039 CAORC-103+.039 CAORC-142+.039	+.079 inch CAORC-0845+.079 CAORC-103+.079 CAORC-142+.079	+.118 inch CAORC-0845+.118 CAORC-103+.118 CAORC-142+.118	+.157 inch - CAORC-103+.157 CAORC-142+.157	+ .197 inch - - CAORC-142+.197						
us Cartidge - CAC Driginal Cartridge CAORC-0845 CAORC-103 CAORC-142 CAORC-170	ORC +.039 inch CAORC-0845+.039 CAORC-103+.039 CAORC-142+.039 CAORC-170+.039	+.079 inch CAORC-0845+.079 CAORC-103+.079 CAORC-142+.079 CAORC-170+.079	+.118 inch CAORC-0845+.118 CAORC-103+.118 CAORC-142+.118 CAORC-170+.118	+.157 inch - CAORC-103+.157 CAORC-142+.157 CAORC-170+.157	+ .197 inch - - CAORC-142+.197 CAORC-170+.197						
us Cartidge - CAC Driginal Cartridge CAORC-0845 CAORC-103 CAORC-142 CAORC-142 CAORC-170 us Guide Pad	ORC +.039 inch CAORC-0845+.039 CAORC-103+.039 CAORC-142+.039 CAORC-170+.039	+.079 inch CAORC-0845+.079 CAORC-103+.079 CAORC-142+.079 CAORC-170+.079	+.118 inch CAORC-0845+.118 CAORC-103+.118 CAORC-142+.118 CAORC-170+.118	+.157 inch - CAORC-103+.157 CAORC-142+.157 CAORC-170+.157	+.197 inch - - CAORC-142+.197 CAORC-170+.197						
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us Cartidge - CAO Driginal Cartridge CAORC-0845 CAORC-103 CAORC-142 CAORC-142 CAORC-170 us Guide Pad Original Pad GPS-08-25-155 GPS-10-35-200	ORC	+.079 inch CAORC-0845+.079 CAORC-103+.079 CAORC-142+.079 CAORC-170+.079 +.079 inch GPB-08-25-155+.079 GPB-10-35-200+.079	+.118 inch CAORC-0845+.118 CAORC-103+.118 CAORC-142+.118 CAORC-170+.118 +.118 inch GPB-08-25-155+.118 GPB-10-35-200+.118	+.157 inch - CAORC-103+.157 CAORC-142+.157 CAORC-170+.157 +.157 inch - GPB-10-35-200+.157	+.197 inch - - CAORC-142+.197 CAORC-170+.197 +.197 inch -						
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Technical Information -Cartridge Style Drill Head Diameter Settings

size or damage can be caused to the head body or workpiece material.

The drill head diameter is set and inspected with a master insert in our final inspection. However, the inserts in the market have a tolerance fluctuation so each time you index the insert, the diameter must be adjusted as per the following method. Note: When a corner change is made on the insert, it must be adjusted to the correct

1. Remove the inner cartridge to avoid interference with the guide screw.
 2. The dimensional guide pad must be slid forward to measure the diameter. 2.1 Loosen the lock screw and slide the guide pad forward. 2.2 Re-tighten the lock screw at the measuring position.
3. Measure the diameter with a micrometer. We recommend setting the tool diameter at h8 tolerance to the cutting diameter. If the diameter is incorrect, go to step 4 below. If it's correct, go to step 5 below.
 4. Adjust the outer cartridge 4.1 First loosen the lock screw of the outer cartridge and then tighten it slightly.
4.2 Proceed to adjust the diameter, using the 2 adjustment screws and measure with a micrometer.
 4.3 When set to the size, re-tighten the lock screw. 4.4 Recheck the diameter with a micrometer. If it is still out of tolerance, repeat the procedure from steps 1-4. Note: Please make sure to tighten the lock screw firmly before use. If loose, the cartridge may move and cause serious problems during machining.
5. Slide the dimensional guide pad back to the original position and tighten the lock screw.6. Replace the inner cartridge and tighten the lock screw. Note: Please check that all lock screws are firmly tightened, as



Technical Information -

Adjustable Counter Boring Head Diameter Settings

Drill diameter is adjusted with an adjust ball for diameter ø.984 - ø1.574" with the following method.



Technical Information - NC Cycle Use the NC cycle as instructed below to optimize tool performance more safely.







Workpiece

TS-I

Calculation of special length tube Drill tubes in lengths other than standard are available upon request.

Calculate the tube length according to your machine.





TS-O



Tube Type	L ₆ **	L 4 *
TDO-IO TDOI-13	4.724	1.181
TDO-I14 - TSO-I20	0	7.480
TDO-I21 - TDO-I24	0	8.661

Dia. øDc			L 5	
1.496	-	1.693	1.772	
1.694	-	1.850	2.165	
1.851	-	2.035	2.008	
2.036	-	2.212	2.205	
2.213	-	2.558	2.598	
2.559	-	3.149	2.953	
3.150	-	4.409	3.268	
4.410	-	5.826	3.425	
5.827	-	7.244	3.386	

DC- Drill diameter