



CARBIDE TIPPED REAMERS TECHNICAL INFORMATION

REAMER BASICS

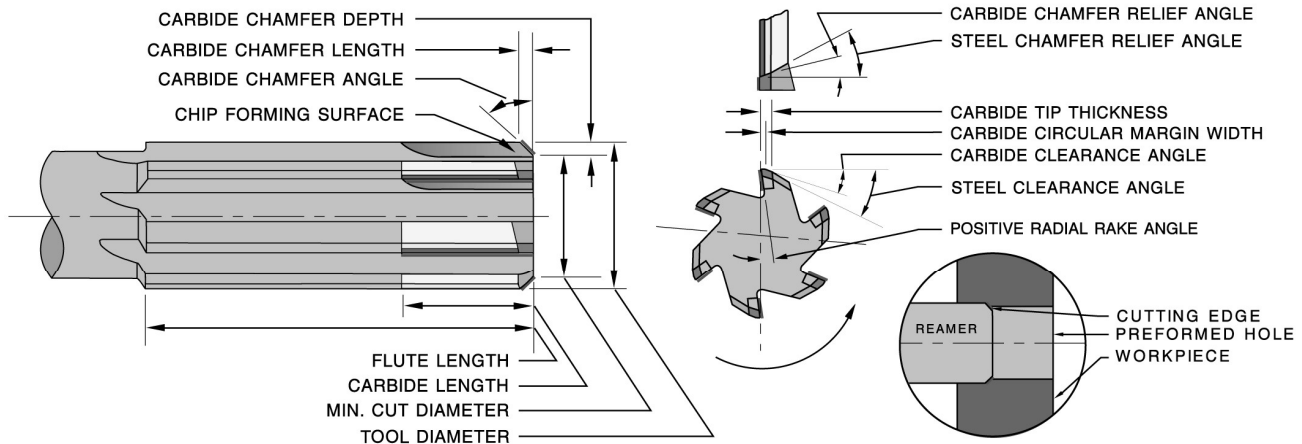
- The reamer is used to finish machine a previously formed hole to an exact diameter with a smooth finish. It should **not** be used to significantly enlarge a hole (max. 5% – depending on material and hardness).
- Carbide tipped reamers are especially appropriate for close tolerance reaming. Because carbide is very highly resistant to wear, the reamer will produce accurate hole size and a smooth finish far longer than high speed steel or cobalt.
- The reamer is an end cutting tool, cutting only on the chamfer's edge at the outside diameter of the preformed hole.

The standard 45° chamfer angle provides effective cutting action for most materials.

- Reamer Types:
 - Multi-Purpose** – Superior performance over high speed steel and cobalt; good in a wide variety of materials
 - Coolant Fed** – Exceptional performance and tool life using material specific reamer technology and coolant fed capabilities; maximizes feeds & speeds

REAMER EXPEDITE FEES: Order must be received by 2:00 PM CST.
Does not apply to types 2431 and 2458EL.
18 pieces max per diameter.
Does NOT require air shipment of the product.

Reamer Diameter	Service	Fee
Up to 1.0000"	24 Hour	\$75.00
Up to 1.0000"	48 Hour	50.00
Over 1.0000"	48 Hour	75.00
Over 1.0000"	72 Hour	50.00



REAMER SPECIFICATIONS

- Geometry and carbide grade appropriate for material being machined
- Carbide tips brazed to tough hardened alloy steel body, except expansion reamers which are not hardened
- Polished flutes for easy chip flow
- ASME/ANSI B94.2; NAS 897; USCTI
- Precision ground cutting edges
- "Taper Shank No." refers to American Standard taper series (formerly Morse taper series) per ASME/ANSI B5.10
- Material specific reamer shanks are ground to next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter
- Expansion reamers can be expanded for regrinding as follows:

Tool Diameter	Guaranteed Minimum Expansion
5/16" - 15/32"	.006"
1/2" - 31/32"	.010"
1" - 1 1/2"	.013"
1 1/4" - 2 1/2"	.015"

REAMER TOLERANCES

- Tool diameter tolerance:
 - Multi-purpose & Coolant fed**
Thru 1 1/2" tool diameter: plus .0003", minus .0000"
Over 1 1/2" tool diameter: plus .0004", minus .0000"
 - NAS897**
Thru 1/2" tool diameter: plus .0002", minus .0000"
Over 1/2" tool diameter thru 3/4": plus .0003", minus .0000"
Over 3/4" tool diameter: plus .0004", minus .0000"
- Closer tool diameter tolerance pricing per tool:

Standard Tolerance	Modified to Closer Tolerance		
	.0003"	.0002"	.0001"
.0004"	\$1	\$3	\$5
.0003"	–	\$1	\$3
.0002"	–	–	\$3

- Shank diameter tolerance:
 - General purpose
minus .0005", minus .0015"
 - NAS & Coolant fed
Thru 23/32" tool diameter: plus .0000", minus .0010"
Over 23/32" tool diameter: plus .0000", minus .0015"