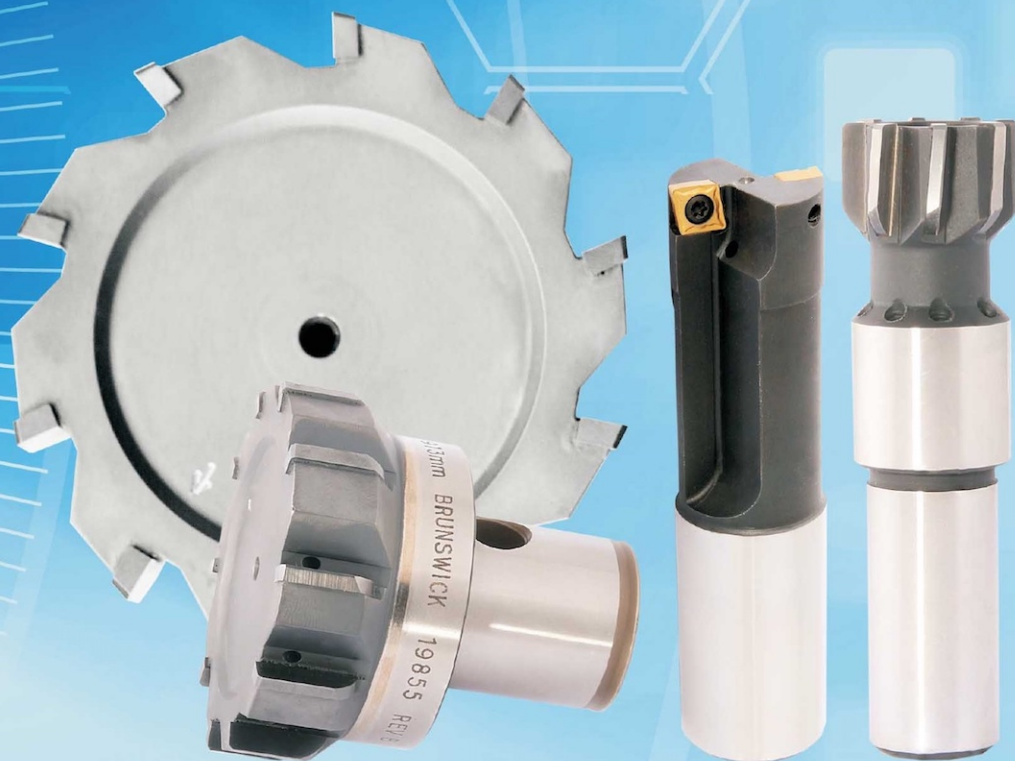




Brunswick Tooling supplies a wide range of precision hole producing products designed and manufactured to suit customers specifications

PRECISION REAMERS





Brunswick Tooling supplies a wide range of precision hole producing products designed and manufactured to suit customers' specifications

- ▶ Brunswick Reamers provide the precision hole solutions for all industries and for all materials.
- ▶ All Brunswick reamers are ground to give the highest component capability results and production process security.
- ▶ To best prepare your reamed hole use a Brunswick indexable insert pre-reamer cutter which have a 90 degree approach to give the best positional accuracy and leaving the correct amount of stock allowance for the reamer.
- ▶ Brunswick adjustable reamers allow for very accurate hole tolerances to be achieved and compensates for wear on the cutting edges and therefore extends the tool life of the reamer.
- ▶ Brunswick non-adjustable AFP reamers provide a tamper proof solution for any high production manufacturing facility with a relatively low skill level.
- ▶ Combination reamers machine several bores in one operation with perfect alignment, saving time and money and therefore reducing cost per part.
- ▶ All Brunswick reamers come straight out of the packaging ready to use with no need for any expensive measuring equipment as the reamers are ground to a 0.005mm tolerance to guarantee perfect hole production.



The F-35 Fighter, production enhanced by using Brunswick Reamers



Brunswick Reamers success leads to Silver Award at BAE Systems

Work undertaken by Brighouse, West Yorkshire-based Brunswick Tooling in co-operation with the BAE Systems' Samlesbury Integrated Services Manufacturing Team has resulted in a prestigious BAE Systems' Chairman's Silver Award.

The Award recognises the major savings and productivity gains made by BAE Systems Samlesbury and Brunswick Tooling in revolutionising the production of precision bores up to 75mm diameter using Brunswick's carbide tipped reaming system.

"Having already achieved a Bronze Award for work done with BAE Systems, we are extremely proud to have gone to that next level," says Paul Briggs, Managing Director, Brunswick Tooling. "To be chosen from the 2000 submissions made by BAE Systems business units from across the UK, Europe, Middle East and Australia for a Silver Award is a major achievement."

Brunswick Tooling was approached to undergo cutting trials on a range of titanium and stainless steel components destined for the Lockheed Martin F-35 Lightning II Joint Strike Fighter. As a result of these trials the Brighouse, West Yorkshire-based, cutting tool specialist developed specific geometries for its Brunswick Reamers capable of achieving extremely tight dimensional tolerances and high quality surface finishes.



A selection of the precision carbide tipped reamers manufactured by Brunswick



- Uncoated AFP 1
- AFP Long Blade 2
- Coated Adjustable 3
- Guided Adjustable 4
- Multi Dia. Reamer 5
- Multi Dia. Reamer 6
- Pre-reamer 7
- Pre-reamer Cutter 8
- Tin Coated AFP 9
- Tin Coated AFP 10
- Uncoated Adjustable 11
- Uncoated AFP 12
- Modular Shank Reamer 13



Brunswick Tooling Specification

Brunswick Material Code (BMC)	Material	Surface Speed (m/min)				
		Uncoated Carbide	Cermet	TiN	AlCrN (Alcrona)	Latuma
A1	Steel - Unalloyed	8 - 16	80 - 160	50 - 120	50 - 120	50 - 120
A2	Steel - Low Alloy	5 - 10	70 - 140	50 - 120	50 - 120	50 - 120
A3	Steel - High Alloy	5 - 10	X	50 - 120	50 - 120	50 - 120
B1	Grey Cast Iron	10 - 25	X	60 - 120	80 - 160	80 - 160
B2	Nodular Cast Iron - <230HB	8 - 20	100 - 160	X	80 - 160	80 - 160
B3	Nodular Cast Iron - >230HB	6 - 15	X	X	70 - 120	70 - 120
C1	Aluminium	10 - 60	X	30 - 100	X	X
C2	Aluminium Casting <12% Si	10 - 60	X	30 - 100	X	X
C3	Aluminium Casting >12% Si	8 - 30	X	20 - 70	X	X
C4	Copper Alloy, Bronze, Brass	10 - 40	X	50 - 150	X	X
D1	Stainless Steel Austenitic	6 - 12	X	15 - 40	X	X
D2	Stainless Steel Ferritic	5 - 10	X	15 - 35	X	X
D3	Stainless Steel Duplex	3 - 8	X	10 - 25	X	X
E1	Titanium	5 - 20	X	X	X	X
E2	Heat Resistant Alloys	5 - 20	X	10 - 30	X	X

Stock Allowance	Hole Diameter (mm)	On Diameter (mm)
		< 10
	10 - 25	0.15 - 0.3
	25 - 50	0.2 - 0.4
	50 <	0.3 - 0.6

Feed Rates	Hole Diameter (mm)	Fz (mm)
		< 10
	10 - 25	0.08 - 0.12
	25 - 50	0.1 - 0.15
	50 <	0.1 - 0.2