

Feed and Speed Information

HSS Drill Blade

	Brinell	HSS-		Feed (IPR)			
		ft / min	ft/min	9.5-12.5 .375"-.492"	13-17 .512"-.670"	18-24 .709"-.945"	25-35 .984"-1.378"
Free Machining Steel	100-150	200	280	.007	.010	.013	.016
	150-200	180	260	.007	.010	.013	.016
	200-250	160	240	.006	.010	.013	.016
Low Carbon Steel	85-125	170	250	.006	.009	.012	.015
	125-175	160	240	.006	.009	.012	.015
	175-225	150	225	.005	.008	.010	.014
Medium carbon steel	125-175	160	240	.006	.009	.012	.015
	175-225	150	225	.005	.008	.010	.014
	225-275	140	210	.005	.008	.010	.014
Alloy Steel	125-175	150	225	.006	.008	.010	.014
	175-225	140	210	.005	.008	.010	.014
	225-275	130	180	.005	.007	.010	.014
High strength alloy	225-300	80	110	.005	.007	.009	.010
	300-350	60	85	.004	.007	.009	.010
structural steel	100-150	140	210	.006	.010	.012	.014
	150-250	120	170	.005	.009	.010	.012
high temp alloy	140-220	30	40	.003	.007	.008	.010
	220-310	25	35	.003	.006	.007	.008
Stainless Steel	135-185	75	105	.006	.008	.009	.011
	185-275	60	90	.005	.007	.008	.010
Tool Steel	150-200	80	110	.004	.006	.008	.010
	200-250	60	90	.004	.006	.008	.010
Aluminum	30	600	850	.008	.013	.016	.020
	180	300	450	.008	.013	.016	.018
Cast Iron	120-150	170	250	.007	.012	.016	.020
	150-200	150	225	.006	.011	.014	.018
	200-220	130	195	.006	.009	.012	.016

SNAP
Chamfer
Inserts

Material	IPR	SFM
Aluminum	0.006-0.012	210-400
Brass	0.006-0.014	210-400
Low Carbon Steels	0.004-0.008	150-210
Med Carbon Steels	0.004-0.009	130-180
Free Machining Alloys	0.004-0.006	100-160

Feed and Speed Information

Carbide Drill Blade

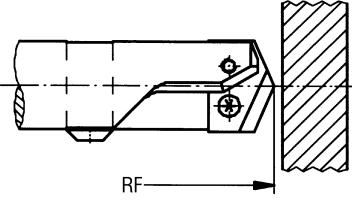
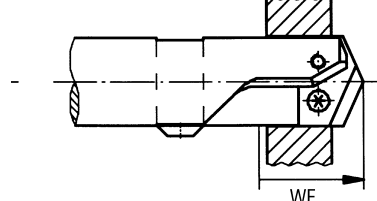
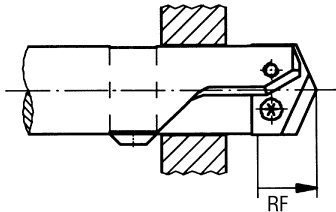
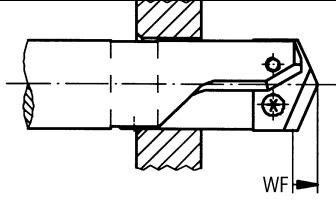
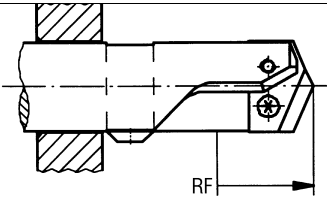
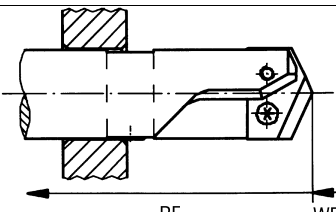
	Brinell Hardness	Carbide Grade	TiN	Feed (IPR) Bore Size, Ød			
				ft/min	9.5-12.5	13-17	18-24
Free Machining Steel	100-150	C5	320	.006	.009	.012	.015
	150-200		280	.006	.008	.011	.013
	200-250		260	.005	.008	.010	.012
Low Carbon Steel	85-125	C5	300	.006	.008	.010	.014
	125-175		260	.005	.008	.010	.014
	175-225		240	.004	.007	.008	.012
Medium carbon steel	125-175	C5	260	.005	.008	.010	.014
	175-225		240	.005	.007	.008	.012
	225-275		220	.004	.007	.008	.012
Alloy Steel	125-175	C5	250	.005	.008	.010	.013
	175-225		230	.005	.007	.009	.012
	225-275		210	.004	.007	.009	.012
High strength alloy	225-300	C5	160	.005	.007	.008	.010
	300-350		140	.004	.006	.007	.009
structural steel	100-150	C5	240	.006	.010	.011	.012
	150-250		200	.005	.008	.009	.011
high temp alloy	140-220	C2	80	.003	.006	.007	.009
	220-310		60	.003	.005	.006	.008
Stainless Steel	135-185	C2	160	.006	.008	.009	.011
	185-275		120	.005	.007	.008	.010
Tool Steel	150-200	C5	160	.003	.005	.007	.009
	200-250		120	.003	.005	.007	.009
Aluminum	30	C2	1200	.008	.013	.016	.020
	180		800	.007	.011	.014	.018
Cast Iron	120-150	C2	320	.006	.009	.011	.015
	150-200		270	.005	.008	.010	.014
	200-220		240	.005	.007	.008	.012

SNAP Chamfer Inserts (cont.)

Material	IPR	SFM
Stainless Steels	0.002-0.005	90-140
Gray Cast Iron	0.004-0.008	150-220
Nodular Cast Iron	0.003-0.007	150-220
Short Chipping Iron	0.003-0.007	100-150
Nickel Based Alloys	0.001-0.003	20-50

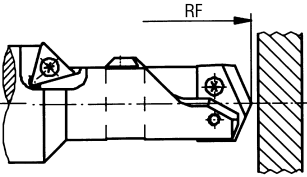
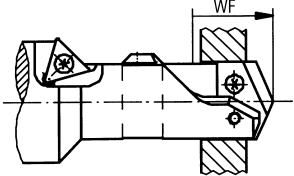
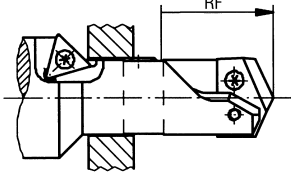
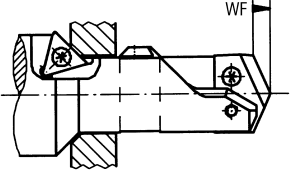
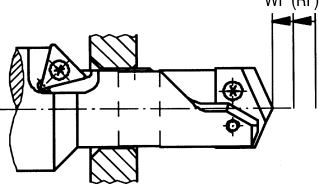
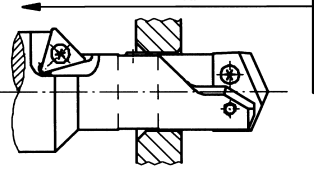
Programming Instructions

Drill Chamfer Tool

	<p>Step 1. In Rapid Feed (RF) move the tool to within clearance distance of the workpiece .</p>
	<p>Step 2. In forward Working Feed (WF) feed the tool through the workpiece until the hole is drilled and the spade drill insert is clear of the bore.</p>
	<p>Step 3. With rapid feed, move the tool so the SNAP blade is within clearance of the workpiece top surface or burr.</p>
	<p>Step 4. With working feed, cut the top chamfer. Continue feeding until the SNAP blade is completely retracted into the tool body.</p>
	<p>Step 5. Use rapid feed to position the SNAP blade on the far side of the part. Position the tool so the SNAP blade is completely extended and clear of the part or burr.</p>
	<p>Step 6. With back working feed, cut the back chamfer. When the SNAP blade is completely within the tool and clear of the back surface, the tool can be extracted with rapid feed.</p>

Drill Countersink Chamfer Tool

Programming
Instructions

	<p>Step 1. In Rapid Feed (RF) move the tool to within clearance distance of the workpiece .</p>
	<p>Step 2. In forward Working Feed (WF) feed the tool through the workpiece until the hole is drilled and the spade drill insert is clear of the bore.</p>
	<p>Step 3. With rapid feed, move the tool so the indexable insert is within clearance distance of the top of the workpiece or burr.</p>
	<p>Step 4. With working feed, cut the top countersink. Continue feeding until the required countersink size is achieved.</p>
	<p>Step 5. If necessary, use rapid backward feed to position the SNAP insert within clearance distance of the back surface of the workpiece or burr. The back chamfer can then be cut in working backward feed.</p>
	<p>Step 6. When the SNAP insert is clear of the back surface and completely retracted in the tool body the tool can be retracted from the workpiece using rapid backward feed.</p>