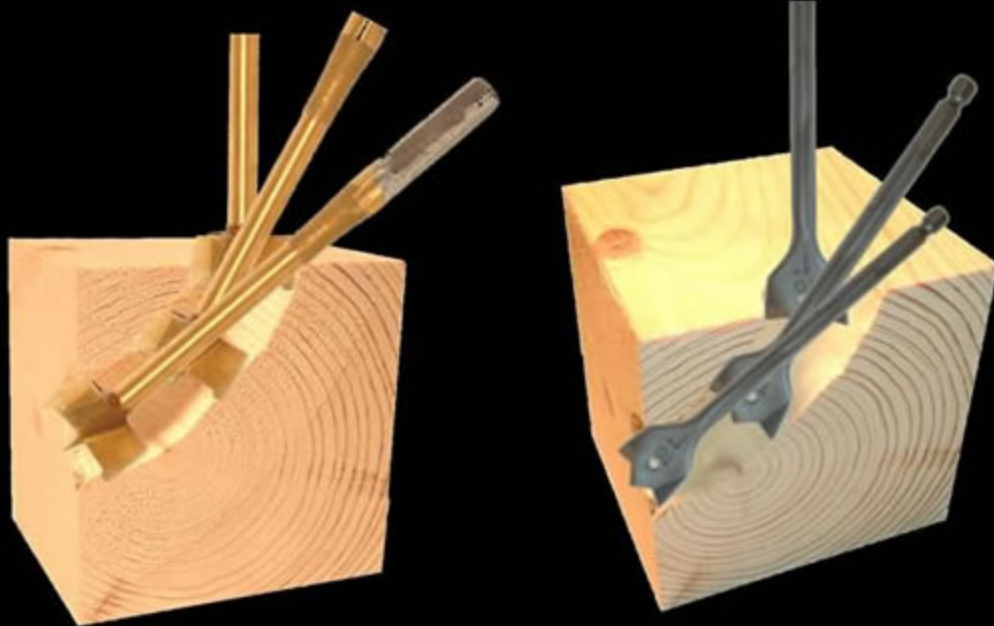




**TG™ Tools**

**Revolutionary Drill Bits**

**Usage  
&  
Information Guide**



**1-800-687-4122**  
**[www.mytgtools.com](http://www.mytgtools.com)**

## Revolutionary Drill Bits

**TG® Tools** supplies a full line of general use twist drills ranging from 118° Black Oxide to Euro Form Carbide Tipped concrete drills. TG Tools also has a propriety line of drills called the KIK series. These bits are designed to perform well above general use standards.



The **KIK® HS Drill Bit** has a unique tip design allowing it to bore wood, plastics and sheet metals exceptionally fast, clean and easy. The tip contains 20% more cutting surface. To accommodate the speed with which this bit drills, the flutes have an additional extraction ridge to

clear the bore continuously and efficiently. The tip design permits plastics, laminates and even acrylic sheet to be drilled without melting, clogging or melting. Sheet metals are drilled with no burr left behind. KIK HS Bits are available in standard jobber lengths and 8¼ extended length. The extended lengths have a hale near the tip for pulling wires through the hole with the bit that made the hole!

8lbs Pressure 1000RPM		
THRU	THRU	FAIL
KIK®	Twist	Brad Point
05:01	10:02	12:16



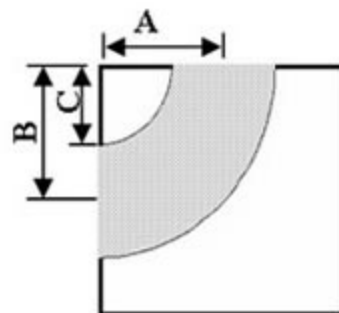
The same principals are applied to TG Tools **KIK® Spade Bits**. The unique KIK Spade Bit has over 30% more cutting surface making them much faster and longer lasting than standard spade bits. There is no protruding tang to bend or break allowing these bits to bore non-ferrous sheet metals and curved holes too! KIK Spade Bits are available in 6", 8¼" and 13" overall lengths. Each KIK Spade Bit contains a Fish Tape hole near the tip for pulling wires thru the hole with the bit that made the hole!



TG Tools **KIK® Forstner Bit** has 9 cutting edges for producing cabinet maker quality bores fast and easy. The open design prevents clogging. With so many cutting edges at work, the KIK Forstner can even drill curved holes, slots and routes! Titanium coated for even longer life

Boring a curved hole with the KIK Forstner and KIK Spade Bits is easy. Simply start straight on the work piece and just after penetration begin to lean the drill over pointing it in the direction you wish to curve. Continue feeding the drill until it begins to exit the work piece. Use gentle pressure while finishing the exit hole to reduce tear-out.

The following tables provide precise information for producing curved holes. Both minimum and maximum values are given assuming the drill bit is secured 1" into the drill chuck. Any combination within these ranges can be used. Shown in the diagram at right



"A" is the center of the bit where the hole is started.

"B" refers to the center of the exit hole.

"C" indicates the measurement to the top of the exit hole.

## KIK® Forstner Bit Curved Hole Data

Starts	Diameter:	1/4	3/8	1/2	5/8	3/4	13/16	7/8	1"	1-1/4
A-0.5"	B-Min.	0.741	0.656	0.590	--	--	--	--	--	--
	C-Min Edge	0.526	0.367	0.242	--	--	--	--	--	--
	B-Max	3.206	2.974	2.819	--	--	--	--	--	--
	C-Max Edge	2.460	2.077	1.705	--	--	--	--	--	--
A-0.75"	B-Min.	1.091	0.950	0.833	0.847	0.825	0.822	0.823	0.856	--
	C-Min Edge	0.876	0.660	0.485	0.416	0.327	0.290	0.257	0.207	--
	B-Max	3.360	3.157	3.003	2.859	2.749	2.700	2.654	2.553	--
	C-Max Edge	2.817	2.425	2.130	1.857	1.652	1.560	1.475	1.290	--
A-1"	B-Min.	1.441	1.243	1.075	1.084	1.043	1.033	1.028	1.063	1.129
	C-Min Edge	1.226	0.954	0.727	0.653	0.545	0.501	0.462	0.414	0.314
	B-Max	3.411	3.231	3.065	2.946	2.834	2.782	2.732	2.628	2.440
	C-Max Edge	2.984	2.642	2.366	2.109	1.902	1.802	1.718	1.531	1.198
A-1.25"	B-Min.	1.792	1.537	1.317	1.322	1.261	1.244	1.234	1.270	1.338
	C-Min Edge	1.577	1.248	0.969	0.891	0.763	0.713	0.668	0.621	0.523
	B-Max	3.404	3.241	3.101	2.968	2.854	2.801	2.750	2.645	2.448
	C-Max Edge	3.052	2.747	2.491	2.249	2.045	1.850	1.860	1.674	1.335
A-1.5"	B-Min.	2.142	1.830	1.560	1.559	1.479	1.455	1.439	1.476	1.547
	C-Min Edge	1.927	1.541	1.212	1.128	0.981	0.924	0.873	0.827	0.732
	B-Max	3.355	3.203	3.069	2.940	2.826	2.772	2.720	2.612	2.409
	C-Max Edge	3.056	2.779	2.539	2.309	2.110	2.016	1.926	1.741	1.400
A-1.75"	B-Min.	2.493	2.124	1.802	1.797	1.697	1.667	1.645	1.683	1.756
	C-Min Edge	2.277	1.835	1.454	1.366	1.199	1.135	1.078	1.034	0.941
	B-Max	3.273	3.128	2.998	2.871	2.756	2.701	2.647	2.537	2.325
	C-Max Edge	3.012	2.756	2.528	2.309	2.113	2.020	1.930	1.746	1.401
A-2"	B-Min.	2.843	2.417	2.044	2.034	1.915	1.878	1.850	1.890	1.965
	C-Min Edge	2.628	2.128	1.696	1.603	1.417	1.346	1.284	1.241	1.150
	B-Max	3.158	3.018	2.889	2.763	2.646	2.589	2.533	2.419	2.198
	C-Max Edge	2.927	2.687	2.468	2.256	2.062	1.970	1.879	1.695	1.345
A-2.25"	B-Min.	--	2.711	2.287	2.272	2.133	2.089	2.056	2.097	2.174
	C-Min Edge	--	2.422	1.939	1.841	1.635	1.557	1.489	1.448	1.359
	B-Max	--	2.874	2.744	2.616	2.495	2.436	2.378	2.259	2.024
	C-Max Edge	--	2.575	2.361	2.154	1.961	1.867	1.776	1.590	1.230
A-2.5"	B-Min.	--	--	2.529	2.509	2.351	2.300	2.261	2.304	2.383
	C-Min Edge	--	--	2.181	2.078	1.853	1.768	1.695	1.655	1.568
	B-Max	--	--	2.559	2.426	2.300	2.237	2.176	2.048	1.794
	C-Max Edge	--	--	2.209	2.002	1.807	1.711	1.618	1.427	1.052

## KIK™ Spade Bit

Length	Diameter:	5/16	3/8	7/16	1/2	9/16	5/8
Any	B-Min.	1.417	0.922	0.773	0.703	--	--
	C-Min Edge	0.955	0.545	0.396	0.307	--	--
6"	B-Max	3.799	3.680	3.579	3.492	--	--
	C-Max Edge	2.640	2.407	2.210	2.040	--	--
8"	B-Max	5.348	5.185	5.047	4.929	--	--
	C-Max Edge	3.727	3.404	3.131	2.897	--	--
13"	B-Max	9.203	8.928	8.696	8.496	--	--
	C-Max Edge	6.424	5.875	5.412	5.016	--	--
Any	B-Min.	2.112	1.358	1.125	1.010	0.945	0.905
	C-Min Edge	1.650	0.981	0.747	0.614	0.523	0.455
6"	B-Max	4.072	3.961	3.862	3.774	3.693	3.620
	C-Max Edge	3.227	3.010	2.818	2.647	2.492	2.352
8"	B-Max	5.758	5.607	5.473	5.354	5.246	5.149
	C-Max Edge	4.575	4.277	4.013	3.778	3.567	3.377
13"	B-Max	9.938	9.684	9.460	9.260	9.082	8.921
	C-Max Edge	7.910	7.404	6.958	6.562	6.207	5.888
Any	B-Min.	2.807	1.794	1.476	1.318	1.244	1.165
	C-Min Edge	2.345	1.417	1.099	0.922	0.803	714.000
6"	B-Max	4.199	4.098	4.007	3.922	3.844	3.772
	C-Max Edge	3.534	3.340	3.163	3.002	2.853	2.715
8"	B-Max	5.973	5.837	5.714	5.602	5.498	5.403
	C-Max Edge	5.041	4.776	4.535	4.315	4.114	3.928
13"	B-Max	10.348	10.122	9.918	9.732	9.562	9.405
	C-Max Edge	8.752	8.303	7.897	7.528	7.191	6.882
Any	B-Min.	4.196	2.665	2.179	1.932	1.783	1.684
	C-Min Edge	3.375	2.288	1.802	1.536	1.361	1.234
6"	B-Max	4.251	4.166	4.086	4.011	3.939	3.871
	C-Max Edge	3.784	3.626	3.477	3.337	3.205	3.079
8"	B-Max	6.148	6.038	5.934	5.837	5.745	5.659
	C-Max Edge	5.495	5.281	5.082	4.895	4.719	4.554
13"	B-Max	10.765	10.585	10.417	10.260	10.113	9.974
	C-Max Edge	9.646	9.290	8.958	8.648	8.358	8.085
Any	B-Min.	5.586	3.537	2.882	2.546	2.341	2.204
	C-Min Edge	5.124	3.160	2.505	2.150	1.919	1.753
6"	B-Max	--	4.076	4.004	3.934	3.867	3.803
	C-Max Edge	--	3.656	3.527	3.402	3.283	3.169
8"	B-Max	6.156	6.062	5.972	5.887	5.804	5.726
	C-Max Edge	5.653	5.475	5.305	5.144	4.990	4.842
13"	B-Max	10.942	10.793	10.651	10.517	10.388	10.266
	C-Max Edge	10.080	9.787	9.509	9.245	8.995	8.756

## Curved Hole Data

11/16	3/4	13/16	7/8	15/16	1"	1-1/8	1-1/4	1-3/8	1-1/2
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
0.880	0.865	0.857	0.853	0.853	0.856	--	--	--	--
0.399	0.351	0.310	0.273	0.239	0.207	--	--	--	--
3.554	3.492	3.435	3.382	3.332	3.286	--	--	--	--
2.224	2.107	1.998	1.898	1.804	1.717	--	--	--	--
5.061	4.980	4.805	4.836	4.773	4.713	--	--	--	--
3.204	3.046	2.901	2.768	2.644	2.529	--	--	--	--
8.775	8.642	8.521	8.409	8.306	8.211	--	--	--	--
5.598	5.335	5.095	4.874	4.670	4.482	--	--	--	--
1.126	1.099	1.082	1.071	1.066	1.063	1.067	1.078	1.094	1.114
0.644	0.586	0.535	0.491	0.451	0.414	0.348	0.289	0.235	0.184
3.704	3.641	3.582	3.526	3.473	3.422	3.329	3.243	3.163	3.089
2.588	2.469	2.358	2.253	2.155	2.061	1.889	1.732	1.588	1.454
5.315	5.233	5.157	5.085	5.018	4.954	4.838	4.733	4.637	4.550
3.757	3.598	3.451	3.313	3.183	3.062	2.839	2.640	2.459	2.294
9.262	9.128	9.005	8.890	8.782	8.682	8.499	8.336	8.190	8.058
6.597	6.333	6.089	5.862	5.650	5.452	5.092	4.772	4.487	4.229
1.616	1.568	1.533	1.508	1.490	1.477	1.464	1.463	1.469	1.481
1.135	1.054	0.986	0.927	0.875	0.828	0.746	0.674	0.610	0.551
3.806	3.744	3.685	3.628	3.573	3.520	3.419	3.324	3.234	3.148
2.960	2.847	2.739	2.636	2.537	2.442	2.263	2.096	1.939	1.790
5.577	5.499	5.425	5.355	5.287	5.223	5.102	4.990	4.886	4.789
4.398	4.250	4.110	3.976	3.849	3.828	3.502	3.293	3.100	2.921
9.844	9.721	9.604	9.494	9.390	9.290	9.105	8.936	8.782	8.639
7.828	7.587	7.358	7.142	6.937	6.743	6.381	6.053	5.752	5.476
2.107	2.036	1.984	1.944	1.914	1.891	1.862	1.848	1.844	1.848
1.625	1.523	1.437	1.363	1.299	1.242	1.143	1.059	0.985	0.918
3.740	3.679	3.620	3.563	3.507	3.452	3.347	3.246	3.149	3.055
3.058	2.952	2.849	2.750	2.653	2.560	2.380	2.209	2.047	1.890
5.650	5.578	5.508	5.440	5.375	5.312	5.192	5.079	4.972	4.871
4.701	4.566	4.436	4.320	4.192	4.076	3.856	3.651	3.458	3.275
10.150	10.039	9.932	9.830	9.732	9.638	9.461	9.297	9.144	9.000
8.529	8.312	8.105	7.907	7.717	7.534	7.191	6.874	6.579	6.304

Continued 



## KIK™ Spade Bit

Starts	Length	Diameter:						
		5/16	3/8	7/16	1/2	9/16	5/8	
A-2.5"	Any	B-Min.	6.975	4.409	3.586	3.161	2.899	2.723
		C-Min Edge	6.514	4.032	3.208	2.765	2.478	2.273
	6"	B-Max	3.944	3.873	3.804	3.738	3.672	3.609
		C-Max Edge	3.651	3.530	3.412	3.298	3.187	3.080
	8"	B-Max	6.067	5.984	5.903	5.825	5.749	5.676
		C-Max Edge	5.658	5.503	5.354	5.211	5.073	4.940
	13"	B-Max	11.001	10.873	10.750	10.632	10.518	10.409
		C-Max Edge	10.300	10.050	9.812	9.583	9.363	9.152
A-3"	Any	B-Min.	8.365	5.281	4.289	3.775	3.458	3.243
		C-Min Edge	7.904	4.904	3.911	3.379	3.036	2.792
	6"	B-Max	--	--	--	--	--	3.295
		C-Max Edge	--	--	--	--	--	2.841
	8"	B-Max	5.903	5.826	5.751	5.678	5.607	5.538
		C-Max Edge	5.559	5.420	5.286	5.156	5.029	4.906
	13"	B-Max	10.987	10.874	10.764	10.659	10.556	10.457
		C-Max Edge	10.396	10.178	9.968	9.765	9.569	9.380
A-4"	Any	B-Min.	11.144	7.024	5.695	5.004	4.574	4.282
		C-Min Edge	10.683	6.647	5.317	4.608	4.153	3.831
	8"	B-Max	--	--	--	5.160	5.029	5.025
		C-Max Edge	--	--	--	4.756	4.644	4.533
	13"	B-Max	--	10.714	10.623	10.534	10.447	10.362
		C-Max Edge	--	10.183	10.012	9.845	9.682	9.524
A-5"	Any	B-Min.	13.924	8.768	7.101	6.232	5.691	5.321
		C-Min Edge	13.462	8.391	6.724	5.836	5.270	4.870
	13"	B-Max	--	10.391	10.310	10.231	10.152	10.076
		C-Max Edge	--	9.961	9.814	9.670	9.528	9.390
A-6"	Any	B-Min.	16.703	10.511	8.508	7.461	6.808	6.359
		C-Min Edge	16.241	10.134	8.130	7.065	6.386	5.909
	13"	B-Max	--	--	9.846	9.772	9.699	9.626
		C-Max Edge	--	--	9.428	9.299	9.172	9.046
A-7"	Any	B-Min.	19.482	12.255	9.914	8.690	7.925	7.398
		C-Min Edge	19.021	11.878	9.536	8.294	7.503	6.948
	13"	B-Max	--	--	--	9.154	9.083	9.013
		C-Max Edge	--	--	--	8.745	8.627	8.509
A-8"	Any	B-Min.	22.261	13.998	11.320	9.918	9.041	8.437
		C-Min Edge	21.800	13.622	10.943	9.522	8.620	7.987
	13"	B-Max	--	--	--	--	--	--
		C-Max Edge	--	--	--	--	--	--

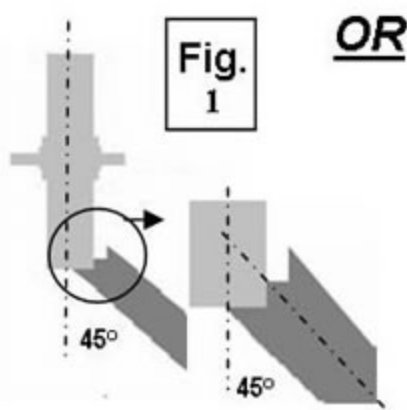
## Curved Hole Data

11/16	3/4	13/16	7/8	15/16	1"	1-1/8	1-1/4	1-3/8	1-1/2
2.598	2.505	2.435	2.38	2.338	2.305	2.26	2.233	2.22	2.215
2.116	1.991	1.888	1.8	1.724	1.656	1.541	1.444	1.36	1.285
3.546	3.485	3.426	3.367	3.309	3.253	3.142	3.034	2.929	2.826
2.975	2.873	2.774	2.677	2.582	2.489	2.309	2.135	1.967	1.803
5.605	5.537	5.470	5.405	5.342	5.280	5.162	5.049	4.940	4.836
4.811	4.687	4.566	4.449	4.336	4.336	4.015	3.814	3.624	3.442
10.304	10.203	10.106	10.011	9.920	9.832	9.665	9.507	9.358	9.218
8.949	8.754	8.565	8.384	8.209	8.040	7.719	7.418	7.135	6.868
3.088	2.973	2.865	2.817	2.763	2.719	2.657	2.618	2.595	2.583
2.607	2.459	2.338	2.236	2.148	2.070	1.939	1.829	1.735	1.652
3.231	3.167	3.105	3.043	2.981	2.921	2.801	2.682	2.565	2.449
2.739	2.638	2.539	2.442	2.347	2.252	2.067	1.886	1.709	1.534
5.470	5.404	5.339	5.276	5.214	5.153	5.035	4.921	4.810	4.703
4.787	4.670	4.557	4.446	4.338	4.233	4.029	3.833	3.646	3.464
10.361	10.268	10.178	10.091	10.006	9.923	9.764	9.613	9.469	9.333
9.196	9.019	8.847	8.680	8.519	8.361	8.061	7.776	7.506	7.250
4.070	3.910	3.787	3.689	3.611	3.547	3.453	3.389	3.345	3.317
3.588	3.396	3.240	3.109	2.996	2.898	2.734	2.600	2.486	2.386
4.959	4.893	4.829	4.765	4.702	4.640	4.517	4.396	4.278	4.161
4.242	4.317	4.212	4.108	4.006	3.905	3.708	3.516	3.328	3.145
10.278	10.197	10.117	10.039	9.930	9.888	9.743	9.603	9.469	9.339
9.369	9.218	9.070	8.926	8.785	8.647	8.379	8.123	7.877	7.640
5.051	4.847	4.688	4.562	4.459	4.376	4.248	4.159	4.096	4.051
4.570	4.333	4.141	3.981	3.845	3.726	3.529	3.370	3.236	3.121
10.000	9.926	9.853	9.781	9.710	9.640	9.503	9.371	9.241	9.115
9.254	9.120	8.989	8.860	8.733	8.609	8.365	8.130	7.902	7.681
6.033	5.784	5.590	5.434	5.308	5.204	5.044	4.929	4.846	4.785
5.551	5.270	5.034	4.854	4.693	4.554	4.325	4.140	3.987	3.855
9.555	9.485	9.415	9.346	9.278	9.211	9.079	8.949	8.822	8.697
8.922	8.800	8.680	8.561	8.444	8.329	8.102	7.881	7.665	7.454
7.014	6.721	6.491	6.307	6.156	6.032	5.839	5.700	5.597	5.520
6.532	6.207	5.944	5.726	5.542	5.383	5.120	4.911	4.737	4.589
8.943	8.874	8.805	8.737	8.670	8.603	8.470	8.340	8.211	8.084
8.393	8.279	8.165	8.053	7.941	7.831	7.614	7.401	7.192	6.986
7.995	7.658	7.393	7.180	7.050	6.860	6.634	6.470	6.347	6.254
7.514	7.144	6.846	6.599	6.390	6.211	5.916	5.681	5.487	5.324
8.141	8.071	8.001	7.931	7.861	7.792	7.655	7.519	7.385	7.251
7.655	7.544	7.433	7.324	7.215	7.107	6.893	6.681	6.473	6.267

End

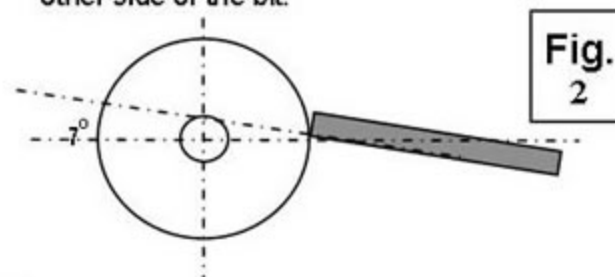
## Re-Sharpening The KIK™ Bit (KIK HS Drill Bit & KIK Spade Bit)

The KIK™ Bit can be sharpened with a **Flat File** simply by following the shape and angle of the cutting edges at the tip of the bit.



**OR**

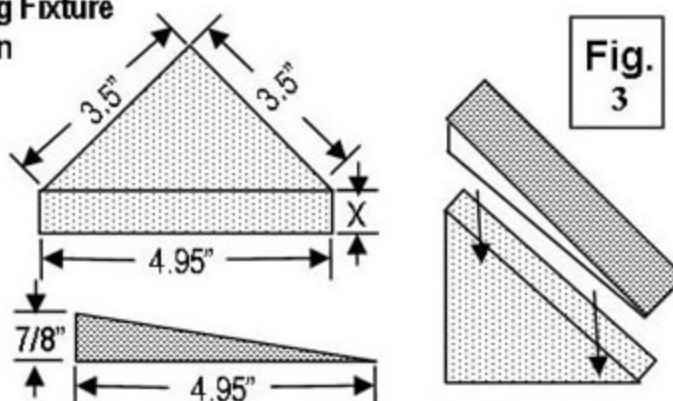
With a **Grinding Wheel**, place the bit with one wing and the spur point engaging the edge of the wheel. Rotate it horizontally to 45° from the centerline of the wheel (Fig 1). Then tilt the bit 7° above that centerline (Fig 2). Repeat for the other side of the bit.



**OR**

**Build your own Re-Sharpening Fixture** and place it in the right position on the grinding wheel

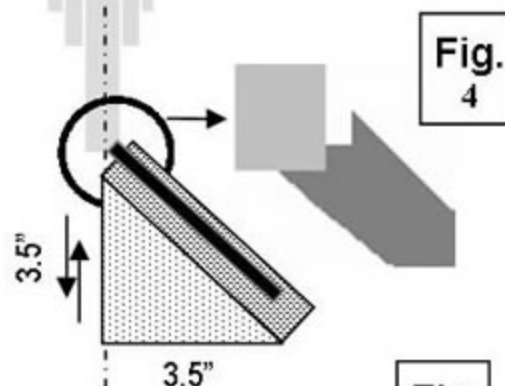
1st, Cut 2 triangles as shown in **Figure 3** from sturdy stock of 3/8" to 1/2" thickness and join them as shown with glue or nails. Dimension "X" is the same as stock thickness.



### Before Start Grinding Wheel !

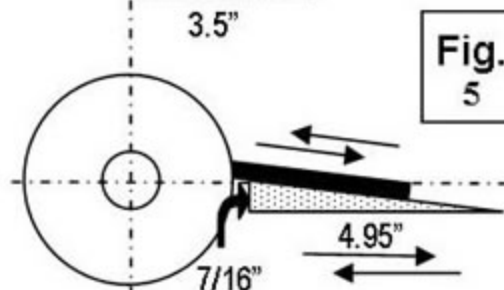
Place the fixture so the 3 1/2" side is parallel to the horizontal center line of the grinding wheel. See Fig 4.

Position your tool rest so the drill will contact the vertical center line of the grinding wheel. See Fig 5.



### Start Grinding Wheel !

Place the bit on your fixture and move it to contact the grinding wheel. Your fixture insures the proper angle. Grind only enough to sharpen the edges. Turn the bit over to re-sharpen the other side.





## Common Drill Bit Basics

Drill bits vary in their design and construction so that different materials can be drilled efficiently. Most general purpose twist drills are designed to bore a variety of materials well, but no single material most efficiently. The differences most effecting performance are the design of the cutting tip, flute shape and material they are made from.

The biggest single factor effecting longevity of a drill bit is heat. When sufficient heat is generated at the cutting edges of a drill bit, the edges deform and the bit becomes dull or "burned". A burned drill bit has had the temper of the material negatively effected and renders the bit nearly useless without extensive re-grinding. If enough heat is generated to melt the material being drilled, a build up can occur on the tip and prevent efficient drilling as well. The amount of heat generated at the tip while drilling is effected by the material being drilled (hardness and melting point), the speed of the drill (RPM) and the rate at which the drill bit is being fed into the material (feed rate). The use of cutting fluids dissipates heat away from the cutting edges and is recommended on hard drilling operations and some materials with low melting points.

Typical twist drill bits have either a 118° or 135° angle ground at the tip. The 118° tip provides for more cutting surface and is best suited for softer materials (wood, plastic, aluminum...). This greater cutting surface allows for more material to be cut with each revolution providing faster drilling. The 135° tip allows less cutting edge surface, but permits more efficient drilling of harder materials (steel, stainless steel). Given the same conditions (material, RPM and feed rate) the 118° point will produce more heat than the 135°.



The flutes of a twist drill exist to remove the drilled material (chips) as the bit cuts and progresses. If the material is not removed, heat will build up faster and the bore will become clogged. Flutes vary in depth, angle and shape. The more chips that can be cleared of the bore the more efficient the drill bit can operate.

Drill bits are produced from different kinds of material primarily varying in hardness. Most common is High Speed Steel (HS). This material is of sufficient hardness for most drilling operations. To drill harder materials (stainless steel) the drill bit needs to be harder for extended life and higher heat tolerance. Cobalt steel and carbide steel are examples of materials harder than HS. Drill bits may also be coated to extended life, reduce heat build up and discourage corrosion. Common examples are Black oxide coated, Titanium coated and Cobalt plated.

### Proper Drill Bit Selection: (TG Tools Recommendations)

**KIK® HS Drill Bit-Brad Point:** Clean, fast drilling in: wood, plastic, sheet metal with **no bur**

**KIK® Spade Bit:** Fast and directional: wood, plastic, non-ferrous sheet metals

**KIK® Forstner Bit:** Exceptionally smooth, clean, precise, directional: wood, plastic

**HS Drill Bit:** 118° Twist Hook® point, black oxide coated: wood, mild steel

**Titanium Coated Bit:** 135° split point: common steel

**Heavy Duty Bit:** 135° split point: heavy steel use

**Cobalt Plated Bit:** 135° split point: heavy steel use, cast iron, stainless steel sheet

**Solid Cobalt Bit:** 135° split point: heavy steel use, stainless steel, cast iron

**Proper Usage of Drill Bit:** Insure that the drill bit is centered in the chuck by turning on the drill and making sure there is no “wobble” at the tip. Place the bit on the drilling surface before starting the drill. Always start straight on the drilling surface with light pressure. Begin and finish at low speed. Do not force or push the drill bit hard as this may cause it to bend and break. When drilling deeper holes in some materials, the non-continuous chips may build up preventing progress. Clear these chips by removing the bit from the hole and then continue.

**The Safe and Economical Speed** for operating a drill will depend on the hardness of the material being drilled, type of bit being used and the depth of the hole. Speed guidelines are given in the following table. The lower range is recommended for most drilling operations.

1/64	.0156	11/32	.3438	43/64	.6719
1/32	.0313	23/64	.3594	11/16	.6875
3/64	.0469	3/8	.3750	45/64	.7031
1/16	.0625	25/64	.3906	23/32	.7188
5/64	.0781	13/32	.4063	47/64	.7344
3/32	.0938	27/64	.4219	3/4	.7500
7/64	.1094	7/16	.4375	48/64	.7656
1/8	.1250	29/64	.4531	25/32	.7813
9/64	.1406	15/32	.4688	51/64	.7969
5/32	.1563	31/64	.4844	13/16	.8125
11/64	.1719	1/2	.5000	53/64	.8281
3/16	.1875	33/64	.5156	27/32	.8438
13/64	.2031	17/32	.5313	55/64	.8594
7/32	.2188	35/64	.5469	7/8	.8750
15/64	.2344	9/16	.5625	57/64	.8906
1/4	.2500	37/64	.5781	29/32	.9063
17/64	.2656	19/32	.5938	59/64	.9219
9/32	.2813	39/64	.6094	15/16	.9375
19/64	.2969	5/8	.6250	61/64	.9531
5/16	.3125	41/64	.6406	31/32	.9688
21/64	.3281	21/32	.6563	63/64	.9844

### Drill Bit Speed Guide (Speeds are in RPM's and size is inches)

	Wood	Plastic	Aluminum	Brass/Bronze	Mild Steel	Cast Iron	Stainless Steel
1/16	1680 to 21280	560 to 11200	11200 to 14000	8400 to 14000	4480 to 5320	4200 to 5600	1680 to 3640
3/32	11200 to 14187	3733 to 7467	7467 to 9333	5600 to 9333	2987 to 3547	2800 to 3733	1120 to 2427
1/8	8400 to 10640	2800 to 5600	5600 to 7000	4200 to 7000	2240 to 2660	2100 to 2800	840 to 1820
5/32	6720 to 8512	2240 to 4480	4480 to 5600	3360 to 5600	1792 to 2128	1680 to 2240	672 to 1456
3/16	5600 to 7093	1867 to 3733	3733 to 4667	2800 to 4667	1493 to 1773	1400 to 1867	560 to 1213
7/32	4800 to 6080	1600 to 3200	3200 to 4000	2400 to 4000	1280 to 1520	1200 to 1600	480 to 1040
1/4	4200 to 5320	1400 to 2800	2800 to 3500	2100 to 3500	1120 to 1330	1050 to 1400	420 to 910
9/32	3733 to 4729	1244 to 2489	2489 to 3111	1867 to 3111	996 to 1182	933 to 1244	373 to 809
5/16	3360 to 4256	1120 to 2240	2240 to 2800	1680 to 2800	896 to 1064	840 to 1120	336 to 728
11/32	3055 to 3869	1018 to 2036	2036 to 2545	1527 to 2545	815 to 967	764 to 1018	305 to 662
3/8	2800 to 3547	933 to 1867	1867 to 2333	1400 to 2333	747 to 887	700 to 933	280 to 607
13/32	2585 to 3274	862 to 1723	1723 to 2154	1292 to 2154	689 to 818	646 to 862	258 to 560
7/16	2400 to 3040	800 to 1600	1600 to 2000	1200 to 2000	640 to 760	600 to 800	240 to 520
15/32	2240 to 2837	747 to 1493	1493 to 1867	1120 to 1867	597 to 709	560 to 747	224 to 485
1/2	2100 to 2680	700 to 1400	1400 to 1750	1050 to 1750	560 to 665	525 to 700	210 to 455
9/16	1867 to 2364	622 to 1244	1244 to 1556	933 to 1556	498 to 591	467 to 622	187 to 404
5/8	1680 to 2128	560 to 1120	1120 to 1400	840 to 1400	448 to 532	420 to 560	168 to 364
11/16	1527 to 1935	509 to 1018	1018 to 1273	764 to 1273	407 to 484	382 to 509	153 to 331
3/4	1400 to 1773	467 to 933	933 to 1167	700 to 1167	373 to 443	350 to 467	140 to 303
13/16	1292 to 1637	431 to 862	862 to 1077	646 to 1077	345 to 409	323 to 431	129 to 280
7/8	1200 to 1520	400 to 800	800 to 1000	600 to 1000	320 to 380	300 to 400	120 to 260
15/16	1120 to 1419	373 to 747	747 to 933	560 to 933	299 to 355	280 to 373	112 to 243
1"	1050 to 1330	350 to 700	700 to 875	525 to 875	280 to 333	263 to 350	105 to 228
1-1/8	933 to 1182	311 to 622	622 to 778	467 to 778	249 to 296	233 to 311	93 to 202
1-1/4	840 to 1064	280 to 560	560 to 700	420 to 700	224 to 266	210 to 280	84 to 182
1-3/8	764 to 967	255 to 509	509 to 636	382 to 636	204 to 242	191 to 255	76 to 165
1-1/2	700 to 887	233 to 467	467 to 583	350 to 583	187 to 222	175 to 233	70 to 152



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