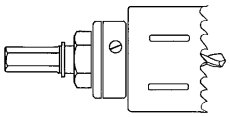
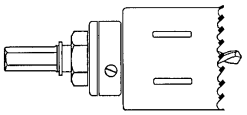
HOLE SAWS

TYPES & DEFINITIONS

High Speed Hole Saw - A saw manufactured from molybdenum high speed steel.



Bi-Metal Hole Saw - Two types of steel. A high speed cutting edge is electron beam welded to an alloy back. The vast majority of hole saws sold today are of the Bi-Metal type.



Carbide -Tipped Saw - A high speed hole saw with a carbide chip welded to each cutting face. These are particularly suited to abrasive materials such as fiberglass, particle board and asbestos. They are NOT recommended for ferrous metals.

Brazed-Carbide Hole Saw - Alloy Steel with individual carbide teeth brazed on each cutting face. The configuration of each saw depends upon the type of material being cut. These special configurations allow brazed carbide hole saws to cut almost any material including pipe, ferrous metal, wood ceramics, tile, porcelain, fiberglass, and marble.

PIPE TAP CLEARANCE SIZES

DIAMETER	PIPE TAP	ENTRANCE SIZE
3/4"		3/8
7/8	3/4	1/2
1-1/8	1	3/4
1-3/8		1
1-1/2	1-1/4	
1-3/4	1-1/2	1-1/4
2		2-1/2
2-1/4	2	
2-1/2		2
2-5/8	2-1/2	
3		2-1/2
3-1/4	3	
3-5/8		3
3-3/4	3-1/2	
4-1/8		3-1/2
4-1/2		4
4-3/4	4-1/2	

DEPTH OF CUT

SHALLOW	1/2"	MAX
STANDARD	1-1/8"	MAX
EXTRA	1-7/8"	MAX
CARBIDE TIPPED	1-7/8"	MAX
BRAZED CARBIDE	2"	MAX

NOTE: BOTH HIGH SPEED AND BI-METAL HOLE SAWS ARE SUITABLE FOR A WIDE RANGE OF MATERIALS THOUGH THEY ARE NOT PARTICULARLY SUITED TO WOOD AND HIGHLY ABRASIVE MATERIALS.

MAXIMUM PERFORMANCE TIPS

- Operate a hole saw at the recommended speed. Operating at excessive speed dramatically shortens saw life. It will cut faster at slow speed than at a high speed. **SPEED KILLS**.
- Apply sufficient feed pressure: 80-100 lbs. per inch of hole saw diameter (more for harder material, less for softer).
- Set the pilot 1/8" beyond the tooth points.
- To prevent splinters or burrs on the back side of wood, stop sawing when the pilot breaks through. Then using the drill as a guide, finish sawing from the other side.
- On saws over 3" in diameter use a torque driving plate. This will distribute the torque evenly and keep the saw from deforming.
- When cutting wood with a standard hole saw score the work, then drill holes just inside the groove to provide chip clearance.
- Operate the saw perpendicular to the work surface.
- When cutting metal use the correct cutting oil. Cutting oil cools the saw and helps to remove chips from the teeth. If using a cutting fluid with a brazed carbide hole saw, be sure to use a steady flow of coolant. Do not allow the tool to get hot and then apply cutting fluid or you will shock the carbide and possibly break it.

RECOMMENDED RPM FOR HIGH SPEED AND BRAZED CARBIDE TIPPED HOLESAWS

THE BELOW VALUES ARE TO BE USED AS A GUIDE ONLY. SPEEDS MAY VARY DUE TO MATERIAL AND DRILLING CONDITIONS.

MATERIAL	MILD STEEL		STAINLESS STEEL		CAST IRON		BRASS		ALUMINUM		WOOD FIBERGLASS		GRANITE MARBLE
SAW TYPE	HSS	Carbide	HSS	Carbide	HSS	Carbide	HSS	Carbide	HSS	Carbide	HSS	Carbide	Carbide
DIAMETER	RPM		RPM		RPM		RPM		RPM		RPM		RPM
9/16"	550	1000-1200	300	400-500	400	1250-1400	790	1350-1650	900	1350-1650	NOT RECOMMENDED WITHOUT CHIP CLEARANCE HOLES	1350-1650	400-500
5/8"	530	950-1150	275	350-450	365	1200-1350	730	1300-1600	825	1300-1600		1300-1600	350-450
3/4"	460	850-1050	230	250-350	300	1100-1250	600	1200-1500	690	1200-1500		1200-1500	250-350
7/8"	390	750-950	195	225-325	260	1000-1200	520	1150-1450	585	1150-1450		1150-1450	225-300
1"	350	650-850	175	200-300	235	900-1100	470	1100-1400	525	1100-1400		1100-1400	200-300
1-1/8"	300	530-750	150	175-275	200	800-1000	400	1050-1350	450	1050-1350		1050-1350	175-275
1-1/4"	275	500-700	140	160-260	180	720-920	360	1000-1250	410	1000-1250		1000-1250	160-260
1-3/8	250	450-650	125	145-245	165	650-850	330	975-1200	375	975-1200		975-1200	145-245
1-1/2"	230	425-625	115	135-235	150	600-800	300	950-1200	345	950-1200		950-1200	135-235
1-5/8"	210	375-575	105	125-225	140	550-750	280	925-1200	315	925-1200		925-1200	125-225
1-3/4"	195	350-550	95	115-215	130	500-700	260	920-1200	295	920-1200		920-1200	115-215
1-7/8"	180	325-525	90	110-210	120	470-670	240	915-1200	270	915-1200		915-1200	110-210
2"	170	325-525	85	105-205	115	450-650	230	900-1200	255	900-1200		900-1200	105-205
2-1/8"	160	300-500	80	100-200	105	425-625	210	890-1190	240	890-1190		890-1190	100-200
2-1/4"	150	275-475	75	95-195	100	400-600	200	880-1180	230	880-1180		880-1180	95-195
2-3/8	140	250-450	70	90-190	95	375-575	190	875-1175	220	875-1175		875-1175	90-190
2-1/2"	135	250-450	70	85-185	90	360-560	180	850-1150	205	850-1150		850-1150	85-185
2-5/8"	130	240-440	65	80-180	85	340-540	170	830-1130	195	830-1130		830-1130	80-180
2-3/4"	125	230-430	60	77-177	80	325-525	160	800-1100	185	800-1100		800-1100	77-177
2-7/8"	120	220-420	60	75-175	80	310-510	160	775-1075	180	775-1075		775-1075	75-175
3"	115	210-410	55	73-173	75	300-500	150	750-1050	170	750-1050		750-1050	73-173
3-1/8"	110	205-405	55	71-171	70	280-480	145	725-1025	165	725-1025		725-1025	71-171
3-1/4"	105	195-395	50	69-169	70	275-475	140	700-1000	155	700-1000		700-1000	69-169
3-3/8"	100	190-390	50	65-165	65	260-460	130	675-975	150	675-975		675-975	65-165
3-1/2"	95	180-380	45	60-160	65	255-455	125	650-950	145	650-950		650-950	60-160
3-5/8"	95	175-375	45	55-155	60	250-450	120	625-925	140	625-925		625-925	55-155
3-3/4"	90	170-370	45	52-152	60	240-440	120	600-900	135	600-900		600-900	52-152
3-7/8"	90	165-365	45	50-150	60	235-435	115	575-875	130	575-875		575-875	50-150
4"	85	160-360	40	50-150	55	225-425	115	550-850	125	550-850		550-850	50-150
4-1/8"	85	155-355	40	48-148	55	215-415	110	525-825	120	525-825		525-825	48-148
4-1/4"	80	150-350	40	46-146	55	210-410	110	500-800	115	500-800		500-800	46-146
4-3/8"	80	145-345	40	45-145	50	205-405	100	475-775	110	475-775		475-775	45-145
4-1/2"	75	140-340	35	43-143	50	200-400	100	450-750	105	450-750		450-750	43-143
4-3/4"	70	130-330	35	40-140	45	185-385	90	400-700	95	400-700		400-700	40-140
5"	65	120-320	30	40-140	40	175-375	85	350-650	90	350-650		350-650	40-140
5-/12"	60	115-315	30	35-135	35	165-365	80	430-640	85	340-640		340-640	35-135
5-3/4"	55	115-315	25	35-135	35	160-360	75	330-630	80	330-630		330-630	35-135
6"	55	100-300	25	30-125	35	150-350	75	325-625	80	325-625		325-625	30-125
6-1/2"		100-300		25-125		145-345		300-600		300-600		300-600	25-125
7"		90-290		23-123		130-330		280-580		280-580		280-580	23-123