

4 ELEMENTS OF EFFECTIVE DRILLING: **W.A.S.P.**

Water

When drilling with a wet core bit, one of the most important factors is water. Many drillers misleadingly think the more water used, the better. As the diamonds work on grinding away the concrete, water helps form a concrete slurry that actually helps the grinding process by keeping the diamonds exposed. If there isn't enough water, there isn't anything to create the slurry and the diamonds will continue to grind the same particles. If there is too much water, all of the concrete dust particles will wash away with nothing to help keep the diamonds exposed. The best amount of water to use is when you see the

slurry look like heavily creamed coffee. This consistency proves to be the most effective when wet core drilling.

Anchor

Proper rig anchoring is essential to insure a straight core. The best method of anchoring is using physical anchors rated for core drilling. Using a base vacuum is fine as long as the surface is smooth and the vacuum gasket is in good shape. It is never recommended to vacuum a rig to a wall due to unreliable job site power. Many rigs also have a ceiling jack that allows the driller to shore the top of the mast up to an overhead area with a sturdy piece of wood. Never stand on a rig to hold it down.

This is an unsafe practice. Standing on a rig causes a 'ribbing' effect on the core and will eventually cause the bit to bind up in the hole.

Speed

Setting your motor at the correct R.P.M. could mean the difference between grinding properly and glazing the diamond segments. Every core bit should be run at the proper R.P.M. The smaller the bit, the faster the R.P.M. should be set. These ratings are standard with almost all manufacturers and many core drills have multiple settings so you can use different size core bits on the rig.

Power

In order to maintain the correct R.P.M., you need the power to do the job. It is best to use an amp meter when electric drilling to monitor the gauge and ensure you do not cause a loss of productivity. Keeping the motor bogged-down and the gauge in the red can wear the internal components of your electric drill motor. Insufficient power can rob the core bit of its R.P.M. and the ability of the diamonds from being exposed. This is also true for drilling with a hydraulic motor. It is important to maintain the correct gallons per minute to ensure the correct R.P.M.

Core Bit Recommended R.P.M. Reference Chart

Bit Diameter	Minimum RPM	Maximum RPM	Ideal RPM	Bit Diameter	Minimum RPM	Maximum RPM	Ideal RPM
1/2"	4775	7960	6364	4"	597	995	795
5/8"	3820	6368	5091	4-1/4"	562	937	749
3/4"	3183	5307	4242	4-1/2"	531	884	707
7/8"	2728	4549	3636	4-3/4"	503	838	670
1"	2387	3980	3182	5"	477	796	636
1-1/8"	2122	3538	2828	5-1/2"	434	724	579
1-3/8"	1736	2895	2314	6"	398	663	530
1-1/2"	1592	2653	2121	6-1/2"	367	612	490
1-5/8"	1469	2449	1958	7"	341	569	455
1-3/4"	1364	2274	1818	7-1/2"	318	531	424
1-7/8"	1273	2123	1697	8"	298	498	398
2"	1194	1990	1591	8-1/2"	281	468	374
2-1/4"	1061	1769	1414	9"	265	442	354
2-1/2"	955	1592	1273	9-1/2"	251	419	335
2-3/4"	868	1447	1157	10"	239	398	318
3"	796	1327	1061	10-1/2"	227	379	303
3-1/4"	735	1225	979	11"	217	362	389
3-1/2"	682	1137	909	11-1/2"	208	346	277
3-3/4"	637	1061	848	12"	199	332	265