



## List 5330 - EXOCARB® MAX-MINI WX-MS

### General Drilling Operations

Work Material	Carbon Steels 1010, 1050		Alloy Steels 4140, 4130		Austenitic Stainless Steels 304, 316		Martensitic, Ferritic Stainless Steels 420, 430, 430F, 440		Precipitation Hardened Stainless Steels 17-4, 15-5	
Drilling Speed	65-260 SFM		65-180 SFM		50-100 SFM		65-120 SFM		50-100 SFM	
Drill Dia. mm	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
0.2	25,000	0.00008	25,000	0.00008	25,000	0.00008	25,000	0.00008	25,000	0.00008
0.3	25,000	0.00012	25,000	0.00012	24,250	0.00012	25,000	0.00012	24,250	0.00012
0.5	25,000	0.0003	20,000	0.0003	15,000	0.0003	15,000	0.0003	15,000	0.0003
1.0	15,000	0.0008	11,000	0.0008	7,250	0.0004	6,400	0.0004	7,250	0.0004
1.5	10,000	0.0008 - 0.0016	8,400	0.0008 - 0.0016	4,800	0.0005 - 0.0012	4,800	0.0005 - 0.0012	4,800	0.0005 - 0.0012
2.0	8,000	0.0012 - 0.0019	6,500	0.0012 - 0.0019	3,600	0.0006 - 0.0016	4,000	0.0006 - 0.0016	3,600	0.0006 - 0.0016
3.0	5,500	0.0016 - 0.0028	4,500	0.0016 - 0.0028	2,400	0.0009 - 0.0024	3,000	0.0009 - 0.0024	2,400	0.0009 - 0.0024
4.0	4,000	0.0024 - 0.0040	3,200	0.0024 - 0.0040	1,800	0.0012 - 0.0031	2,500	0.0012 - 0.0031	1,800	0.0012 - 0.0031
5.0	3,200	0.0027 - 0.0047	2,600	0.0027 - 0.0047	1,450	0.0016 - 0.004	2,000	0.0016 - 0.004	1,450	0.0016 - 0.004

### General Drilling Operations

Work Material	Cast Iron		Aluminum Alloy 6061, 7075		Cast Aluminum		Copper, Copper Alloys C1020, S2600		Titanium 6AL4V (30 HRC)	
Drilling Speed	65-260 SFM		100-260 SFM		100-200 SFM		65-150 SFM		30-120 SFM	
Drill Dia. mm	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
0.2	25,000	0.00008	25,000	0.0001	25,000	0.00008	25,000	0.00008	25,000	0.00008
0.3	25,000	0.00012	25,000	0.0003	25,000	0.0001	25,000	0.00012	24,250	0.0001
0.5	25,000	0.0003	25,000	0.0006	25,000	0.0003	20,000	0.0003	15,000	0.0002
1.0	15,000	0.0008	15,000	0.0012	14,500	0.0004	10,000	0.0004	7,250	0.0004
1.5	10,000	0.0008 - 0.0016	10,000	0.0012 - 0.0031	10,000	0.0005 - 0.0012	4,800	0.0005 - 0.0012	4,800	0.0005 - 0.0013
2.0	8,000	0.0012 - 0.0019	8,000	0.0016 - 0.0040	8,000	0.0006 - 0.0016	4,000	0.0006 - 0.0016	3,600	0.0012 - 0.0015
3.0	5,500	0.0016 - 0.0028	6,500	0.0024 - 0.0059	6,500	0.0009 - 0.0024	3,000	0.0009 - 0.0024	2,400	0.0016 - 0.0018
4.0	4,000	0.0024 - 0.0040	5,000	0.0031 - 0.0079	5,000	0.0012 - 0.0031	2,500	0.0012 - 0.0031	1,800	0.0016 - 0.0026
5.0	3,200	0.0027 - 0.0047	4,000	0.0040 - 0.0098	4,000	0.0016 - 0.0040	2,000	0.0016 - 0.0040	1,450	0.0027 - 0.0039

1. Please use in a machine with precise spindle rotation. Tight clamping is critical.
2. The indicated feeds and speeds are for drilling with water-soluble fluid.
3. Please use water-soluble high density fluid (less than 20 times dilution).
4. These tables are applicable for less than 3xD deep drilling operations.  
When drilling deeper than 3xD, please peck every 0.25-0.5xD accordingly.
5. The run out with a drill in the spindle should be less than 0.0001".
6. OSG's Shrink Fit System is the recommended tool holder for these drills.

For machines that cannot achieve the speeds indicated in the above table, please set rotation as high as possible. Tool life may be decreased.

