



List 5200 - A Brand ADO-SUS: 3D

List 5210 - A Brand ADO-SUS: 5D

List 5220 - A Brand ADO-SUS: 8D

General Drilling Operations

Work Material	Carbon Steels, Mild Steels 1010, 1050, 12L14		Alloy Steels 4140, 4130		300 Series Austenitic Stainless Steels				400 Series Ferritic Stainless Steels Martensitic Stainless Steels				
					≤15HRC		> 15 HRC		≤15HRC		> 15 HRC		
Hardness	260-325 SFM		260-325 SFM		200-330 SFM		130-260 SFM		200-330 SFM		130-260 SFM		
Drilling Speed	260-325 SFM		260-325 SFM		200-330 SFM		130-260 SFM		200-330 SFM		130-260 SFM		
	Drill Dia.	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
mm	Inch												
2	-	14,190	0.0013 - 0.003	14,190	0.0013 - 0.003	12,850	0.0013 - 0.003	9,460	0.0013 - 0.003	12,850	0.0013 - 0.003	9,460	0.0013 - 0.003
3	-	9,450	0.002 - 0.005	9,450	0.002 - 0.005	8,570	0.002 - 0.005	6,310	0.002 - 0.005	8,570	0.002 - 0.005	6,310	0.002 - 0.005
-	1/8	8,940	0.002 - 0.005	8,940	0.002 - 0.005	8,100	0.002 - 0.005	5,960	0.002 - 0.005	8,100	0.002 - 0.005	5,960	0.002 - 0.005
4	-	7,090	0.003 - 0.006	7,090	0.003 - 0.006	6,430	0.003 - 0.006	4,730	0.003 - 0.006	6,430	0.003 - 0.006	4,730	0.003 - 0.006
-	3/16	5,960	0.004 - 0.007	5,960	0.004 - 0.007	5,400	0.004 - 0.007	3,970	0.004 - 0.007	5,400	0.004 - 0.007	3,970	0.004 - 0.007
6	-	4,730	0.005 - 0.009	4,730	0.005 - 0.009	4,280	0.005 - 0.008	3,150	0.005 - 0.008	4,280	0.005 - 0.008	3,150	0.005 - 0.008
-	1/4	4,470	0.005 - 0.009	4,470	0.005 - 0.009	4,050	0.005 - 0.008	2,980	0.005 - 0.008	4,050	0.005 - 0.008	2,980	0.005 - 0.008
8	-	3,550	0.006 - 0.011	3,550	0.006 - 0.011	3,210	0.006 - 0.009	2,360	0.006 - 0.009	3,210	0.006 - 0.009	2,360	0.006 - 0.009
-	3/8	2,980	0.007 - 0.012	2,980	0.007 - 0.012	2,700	0.007 - 0.011	1,990	0.007 - 0.011	2,700	0.007 - 0.011	1,990	0.007 - 0.011
10	-	2,840	0.008 - 0.012	2,840	0.008 - 0.012	2,570	0.008 - 0.012	1,890	0.008 - 0.012	2,570	0.008 - 0.012	1,890	0.008 - 0.012
-	7/16	2,550	0.008 - 0.012	2,550	0.008 - 0.012	2,310	0.008 - 0.012	1,700	0.008 - 0.012	2,310	0.008 - 0.012	1,700	0.008 - 0.012
12	-	2,360	0.008 - 0.012	2,360	0.008 - 0.012	2,140	0.008 - 0.012	1,580	0.008 - 0.012	2,140	0.008 - 0.012	1,580	0.008 - 0.012
-	1/2	2,230	0.008 - 0.013	2,230	0.008 - 0.013	2,020	0.008 - 0.012	1,490	0.008 - 0.012	2,020	0.008 - 0.012	1,490	0.008 - 0.012
14	-	2,030	0.009 - 0.014	2,030	0.009 - 0.014	1,840	0.009 - 0.013	1,350	0.009 - 0.013	1,840	0.009 - 0.013	1,350	0.009 - 0.013
-	5/8	1,790	0.010 - 0.015	1,790	0.010 - 0.015	1,620	0.009 - 0.015	1,190	0.009 - 0.015	1,620	0.009 - 0.015	1,190	0.009 - 0.015
16	-	1,770	0.010 - 0.015	1,770	0.010 - 0.015	1,610	0.009 - 0.015	1,180	0.009 - 0.015	1,610	0.009 - 0.015	1,180	0.009 - 0.015
-	3/4	1,580	0.011 - 0.015	1,580	0.011 - 0.015	1,430	0.010 - 0.016	1,050	0.010 - 0.016	1,430	0.010 - 0.016	1,050	0.010 - 0.016
18	-	1,490	0.012 - 0.016	1,490	0.012 - 0.016	1,350	0.011 - 0.016	990	0.011 - 0.016	1,350	0.011 - 0.016	990	0.011 - 0.016
-	20	1,420	0.012 - 0.016	1,420	0.012 - 0.016	1,280	0.011 - 0.016	950	0.011 - 0.016	1,280	0.011 - 0.016	950	0.011 - 0.016

General Drilling Operations

Work Material	Duplex Stainless Steels				Precipitation Hardened Stainless Steels 15-5, 17-4		Ductile Cast Iron/ Cast Iron		Cast Aluminum		Titanium Alloy		Nickel Alloy*		
	≤ 30 HRC		> 30 HRC		≤ 45 HRC						30-35 HRC		38-45 HRC		
Hardness	130-260 SFM		100-165 SFM		130-200 SFM		195-330 SFM		325-700 SFM		100-165 SFM		30-100 SFM		
Drilling Speed	130-260 SFM		100-165 SFM		130-200 SFM		195-330 SFM		325-700 SFM		100-165 SFM		30-100 SFM		
	Drill Dia.	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
mm	Inch														
2	-	9,460	0.0013 - 0.003	6,430	0.0013 - 0.003	8,000	0.0013 - 0.003	12,700	0.0013 - 0.003	24,900	0.002 - 0.004	6,430	0.0013 - 0.003	3,200	0.0011 - 0.0010
3	-	6,310	0.002 - 0.005	4,280	0.002 - 0.005	5,330	0.002 - 0.005	8,470	0.002 - 0.005	16,600	0.004 - 0.006	4,280	0.002 - 0.005	2,100	0.0017 - 0.0020
-	1/8	5,960	0.002 - 0.005	4,050	0.002 - 0.005	5,040	0.002 - 0.005	8,000	0.002 - 0.005	15,680	0.004 - 0.006	4,050	0.002 - 0.005	2,015	0.0018 - 0.0030
4	-	4,730	0.003 - 0.006	3,210	0.003 - 0.006	4,000	0.003 - 0.006	6,350	0.003 - 0.006	12,450	0.005 - 0.007	3,210	0.003 - 0.006	1,600	0.0023 - 0.0030
-	3/16	3,970	0.004 - 0.007	2,700	0.004 - 0.007	3,360	0.004 - 0.007	5,330	0.004 - 0.007	10,450	0.006 - 0.008	2,700	0.004 - 0.007	1,340	0.0028 - 0.0040
6	-	3,150	0.005 - 0.008	2,140	0.005 - 0.008	2,670	0.005 - 0.008	4,230	0.005 - 0.009	8,300	0.008 - 0.010	2,140	0.005 - 0.008	1,100	0.0035 - 0.0050
-	1/4	2,980	0.005 - 0.008	2,020	0.005 - 0.008	2,520	0.005 - 0.008	4,000	0.005 - 0.009	7,840	0.009 - 0.011	2,020	0.005 - 0.008	1,010	0.0037 - 0.0060
8	-	2,360	0.006 - 0.009	1,600	0.006 - 0.009	2,000	0.006 - 0.009	3,170	0.006 - 0.011	6,220	0.012 - 0.014	1,600	0.006 - 0.009	800	0.0047 - 0.0070
-	3/8	1,990	0.007 - 0.011	1,350	0.007 - 0.011	1,680	0.007 - 0.011	2,670	0.007 - 0.012	5,230	0.014 - 0.016	1,350	0.007 - 0.011	670	0.0056 - 0.0090
10	-	1,890	0.008 - 0.012	1,280	0.008 - 0.012	1,600	0.008 - 0.012	2,540	0.008 - 0.012	4,980	0.015 - 0.017	1,280	0.008 - 0.012	640	0.0059 - 0.0090
-	7/16	1,700	0.008 - 0.012	1,160	0.008 - 0.012	1,440	0.008 - 0.012	2,290	0.008 - 0.012	4,480	0.017 - 0.019	1,160	0.008 - 0.012	575	0.0065 - 0.0100
12	-	1,580	0.008 - 0.012	1,070	0.008 - 0.012	1,330	0.008 - 0.012	2,120	0.008 - 0.012	4,150	0.018 - 0.020	1,070	0.008 - 0.012	530	0.0070 - 0.0110
-	1/2	1,490	0.008 - 0.012	1,010	0.008 - 0.012	1,260	0.008 - 0.012	2,000	0.008 - 0.013	3,920	0.019 - 0.021	1,010	0.008 - 0.012	500	0.0075 - 0.0120
14	-	1,350	0.008 - 0.013	920	0.008 - 0.013	1,140	0.008 - 0.013	1,810	0.009 - 0.014	3,560	0.021 - 0.023	920	0.008 - 0.013	455	0.0082 - 0.0130
-	5/8	1,190	0.009 - 0.015	810	0.009 - 0.015	1,010	0.009 - 0.015	1,600	0.010 - 0.015	3,140	0.023 - 0.026	810	0.009 - 0.015	400	0.0093 - 0.0150
16	-	1,180	0.009 - 0.015	800	0.009 - 0.015	1,000	0.009 - 0.015	1,590	0.010 - 0.015	3,110	0.023 - 0.026	800	0.009 - 0.015	400	0.0094 - 0.0150
-	3/4	1,050	0.010 - 0.016	710	0.010 - 0.016	890	0.010 - 0.016	1,410	0.011 - 0.015	2,770	0.026 - 0.030	710	0.010 - 0.016	400	0.0106 - 0.0170
18	-	990	0.011 - 0.016	670	0.011 - 0.016	840	0.011 - 0.016	1,330	0.012 - 0.016	2,610	0.027 - 0.031	670	0.011 - 0.016	335	0.0112 - 0.0180
-	20	950	0.011 - 0.016	640	0.011 - 0.016	800	0.011 - 0.016	1,270	0.012 - 0.016	2,490	0.028 - 0.032	640	0.011 - 0.016	320	0.0118 - 0.0190

Note: *The above cutting conditions for Ni-based Alloys are applicable to hole depth under 3D. When necessary, please consider step drilling.

