Additional Technical Data

Desoutter

Drilling Data

Cross sectional areas of holes

Metric	
ø mm	Area mm²
1.0	0.785
1.5	1.766
2.0	3.14
2.5	4.91
3.0	7.06
4.0	12.56
5.0	19.62
6.0	28.26
7.0	38.47
8.0	50.24
9.0	63.59
10.0	78.50
11.0	94.99
12.0	113.04
13.0	132.67
14.0	153.86
15.0	176.63
16.0	200.96
17.0	226.87
18.0	254.34
19.0	283.60
20.0	314.00
21.0	346.00
22.0	379.94

Imperial	
ø in.	Area in.²
1/32	0.0007
1/16	0.003
3/32	0.006
1/8	0.012
5/32	0.019
3/16	0.027
7/32	0.037
1/4	0.049
9/32	0.062
5/16	0.076
11/32	0.092
3/8	0.110
13/32	0.129
7/16	0.150
15/32	0.172
1/2	0.196
9/16	0.248
5/8	0.306
11/16	0.371
3/4	0.441
13/16	0.518
7/8	0.601

To calculate the cross sectional area of a drill diameter use formula πr^2 (3.14 x radius^2)

For example area of ø 1/4" 3.14 x 1/8" x 1/8" = 0.049 sq. ins.

Multi spindle drilling - how to select the correct AFD unit

1. Calculate cross sectioned area of hole by referring to the chart or formula.
2. Multiply the cross sectional area by the number of spindles.
3. Select the nearest **greater** hole cross sectional area from the chart.
4. From the recommended drilling capacity chart on the AFD specification page select the AFD with the appropriate capacity.

Example 1 (AFD)
5 off ø 1/16" holes to be drilled in aluminum
.003" x 5 = .015 ins².
ø 5/32" hole has a cross sectional area of 0.019ins²
Therefore: AFD40 - 5300 has the appropriate capacity.

Example 2 (AFDE)
4 off ø 3/16" holes to be drilled in aluminum
.027" x 4 = .108 sq. ins.
ø 3/8" hole has a cross sectional area of .110 ins².
Therefore: AFDE40 - 1800 has the appropriate capacity.

Example 3 (OFDE)
5 off ø 3mm holes to be drilled in mild steel
7.06mm² x 5 = 35.3mm².
ø 7mm hole has a cross sectional area of 38.47mm².
Therefore: OFDE40 - 1200 has the appropriate capacity.

Recommended drilling speeds

Material	Surface Feet per/ Minute	Suggested R.P.M. required for correct surface feet per minute											
		1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"
Stainless Steel	30-40	2100	1100	700	550	400	350	300	250	230	200	190	175
Titanium Alloy	10-20	900	450	300	200	185	150	130	115	100	90	80	75
High Carbon Steel	70-80	4600	2300	1500	1100	900	750	650	575	500	450	400	375
Malleable Iron	80-90	5200	2600	1700	1300	1000	850	750	650	575	525	475	425
Mild Steel	80-110	6100	3000	2000	1500	1200	1000	900	750	675	600	550	500
Medium Hard Cast Iron	70-100	5200	2600	1700	1300	1000	850	750	650	575	525	475	425
Soft Cast Iron	100-150	7600	3800	2500	1900	1500	1100	950	850	750	700	650	600
Plastic & Bakelite	150-200	9200	4600	3000	2300	1800	1500	1300	1100	1000	900	800	750
High Tensile Bronze	70-150	6700	3300	2250	1650	1350	1100	950	850	750	675	600	550
Commercial Brass or Bronze	200-300	15000	7600	5100	3800	3000	2500	2200	2000	1700	1500	1400	1300
Aluminum	200-300	15000	7600	5100	3800	3000	2500	2200	2000	1700	1500	1400	1300
Magnesium	250-400	18500	9200	6100	4600	3600	3100	2600	2250	2000	1900	1800	1650
Wood	300-400	18500	9200	6100	4500	3600	3000	2600	2250	2100	2000	1900	1800

NOTES: Air motors deliver maximum horse power when they are loaded to a point where the free speed has dropped by approximately 50%. The above table is suggested when using high speed steel drills. Other types of cutters may require differing speeds.

Tap shank diameters

Machine Screw size	Nominal Diameter	Nominal Diameter	Shank Diameter	Size of Square	Nominal Diameter	Nominal Diameter	Shank Diameter	Size of Square
	ins	mm	ins	ins	ins	mm	ins	ins
2		M2	.141	.110	5/16"	M8	.318	.238
3	3/32"	M2.5	.141	.110	3/8"	M10	.381	.286
4			.141	.110	7/16"		.323	.242
5	1/8"	M3	.141	.110	1/2"	M12	.367	.275
6		M3.5	.141	.110	9/16"	M14	.429	.322
8	5/32"	M4	.168	.131	5/8"	M16	.480	.360
10	3/16"	M5	.194	.152	11/16"	M18	.542	.406
12	7/32"		.220	.165	3/4"		.590	.442
14	1/4"	M6	.255	.191				