SpeTool

WOODWORKING

CARBIDE SPIRAL ROUTER BIT

FEED&SPEED CHART

Depth of cut: 1xCutting diameter

CUTTING DIAMETER	MATERIAL	CUTTING DIRECTION	RPM	CHIPLOAD	FEED RATE (INCH/MIN)	STEP DOWN (INCH)	STEP OVER (INCH)
1/16	MDF Laminate	up	18,000	0.0015	54	0.06	0.025
		down	18,000	0.001	36	0.06	0.025
	softwood	up	18,000	0.0015	54	0.06	0.025
		down	18,000	0.001	36	0.06	0.025
	hardwood	up	18,000	0.0015	54	0.06	0.025
		down	18,000	0.001	36	0.06	0.025
1/8	MDF Laminate	up	18,000	0.0045	160	0.125	0.05
		down	18,000	0.0036	130	0.125	0.05
		compression	18,000	0.004	140	0.125	0.05
	softwood	up	18,000	0.004	140	0.125	0.05
		down	18,000	0.0032	115	0.125	0.05
		compression	18,000	0.0035	125	0.125	0.05
	hardwood	up	18,000	0.0035	125	0.125	0.05
		down	18,000	0.0028	100	0.125	0.05
		compression	18,000	0.003	110	0.125	0.05
1/4	MDF Laminate	up	18,000	0.008	290	0.25	0.1
		down	18,000	0.006	230	0.25	0.1
		compression	18,000	0.0072	260	0.25	0.1
	softwood	up	18,000	0.007	250	0.25	0.1
		down	18,000	0.0056	200	0.25	0.1
		compression	18,000	0.0062	220	0.25	0.1
	hardwood	up	18,000	0.006	215	0.25	0.1
		down	18,000	0.004	145	0.25	0.1
		compression	18,000	0.005	180	0.25	0.1
3/8	MDF Laminate	up	15,000	0.01	300	0.375	0.15
		down	15,000	0.008	240	0.375	0.15
		compression	15,000	0.009	270	0.375	0.15
	softwood	up	15,000	0.009	270	0.375	0.15
		down	15,000	0.008	240	0.375	0.15
		compression	15,000	0.008	240	0.375	0.15
	hardwood	up	15,000	0.007	210	0.375	0.15
		down	15,000	0.006	180	0.375	0.15
		compression	15,000	0.006	180	0.375	0.15
1/2	MDF Laminate	up	15,000	0.015	450	0.375	0.15
		down	15,000	0.012	360	0.375	0.15
		compression	15,000	0.014	420	0.375	0.15
	softwood	up	15,000	0.012	360	0.375	0.15
		down	15,000	0.01	300	0.375	0.15
		compression	15,000	0.011	330	0.375	0.15
	hardwood	up	15,000	0.01	300	0.375	0.15
		down	15,000	0.008	240	0.375	0.15
		compression	15,000	0.009	270	0.375	0.15

- Adjusting Feed and Speed for Bit Diameter: The feed rate in the table above are based a cutting depth that is equal to or less than the bit's diameter.
  - 1 x cutting diameter, Use recommended feed rate
  - 2 x cutting diameter, Reduce feed rate by 30%
  - 3 x cutting diameter, Reduce feed rate by 50%
- Simple machining calculations:
  - Feed rate=RPM x # of flutes x chipload
- Due to the extremely small diameters involved, bits are not guaranteed against breakage.
- Please excercise caution to the accurate calculations of all feed and speed rates
- Always start test the bits with a lower feed rate
- Make overhang of bits as short as possible in condition on non-interference

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