

Feeds and speeds charts

These charts have been taken from Onsrud's recommendations and calculated in order to save time for the bits provided in the ShopBot bit kit. For further information, Onsrud series numbers are provided. ShopBot numbers are also provided for an easier, streamlined ordering experience. Onsrud provided numbers are cut depths, chip loads, and flutes. The exception to this rule is the "Carbide Tipped Surfacing Cutter" which has all values provided by Onsrud. Any tools with no values provided are not listed by Onsrud, but if they are contacted about a specific use, they may provide some base numbers from which to calculate.

The "Chip Load Calculator" in ShopBot 3 was utilized with a starting RPM of 18,000 on all tools to find the calculated feed rate. Any deviations from provided numbers should be verified and adjusted through recalculation in ShopBot 3 "Chip Load Calculator."

Soft wood

Name	SB#	Onsrud Series	Cut	Chip Load per leading edge	Flutes	Feed Rate (ips)	Feed rate (ipm)	RPM	Max Cut
1" 60 degree Carbide V cutter	13648	37-82	1 x D	.004-.006	2	2.4-3.6		18,000	
1/4" Straight V Carbide Tipped End Mill	13642	48-005	n/a	n/a	1	n/a	n/a	n/a	
1/2" Straight V Carbide Tipped End Mill	13564	48-072	n/a	n/a	2	n/a	n/a	n/a	
1/4" Upcut Carbide End Mill	13528	52-910	1 x D	.007-.009	2	4.2-5.4		18,000	
1/4" Downcut Carbide End Mill	13507	57-910	1 x D	.007-.009	2	4.2-5.4		18,000	
1/4" Upcut Carbide End Mill	1108	65-025	1 x D	.004-.006	1	1.2-1.8		18,000	
1/8" Tapered Carbide Upcut Ball End Mill	13636	77-102	1 x D	.003-.005	2	1.8-3.0		18,000	
1-1/4" Carbide Tipped Surfacing Cutter	13555	91-000	1/2-3/4 x D		2		200-600	12,000-16,000	1/8"

Hard wood

Name	SB#	Onsrud Series	Cut	Chip Load per leading edge	Flutes	Feed Rate (ips)	Feed rate (ipm)	RPM	Max Cut
1" 60 degree Carbide V cutter	13648	37-82	1 x D	.004-.006	2	2.4-3.6		18,000	
1/4" Straight V Carbide Tipped End Mill	13642	48-005	1 x D	.005-.007	1	1.5-2.1	90-126	18,000	
1/2" Straight V Carbide Tipped End Mill	13564	48-072	1 x D	.006-.008	2	3.6-4.8		18,000	
1/4" Upcut Carbide End Mill	13528	52-910	1 x D	.006-.008	2	3.6-4.8		18,000	
1/4" Downcut Carbide End Mill	13507	57-910	1 x D	.005-.007	2	3.0-4.2		18,000	
1/4" Upcut Carbide End Mill	1108	65-025	1 x D	.004-.006	1	1.2-1.8		18,000	
1/8" Tapered Carbide Upcut Ball End Mill	13636	77-102	1 x D	.003-.005	2	1.8-3.0		18,000	
1-1/4" Carbide Tipped Surfacing Cutter	13555	91-000	1/2-3/4 x D		2		200-600	12,000-16,000	1/8"

Medium Density Fiberboard (MDF)

Name	SB#	Onsrud Series	Cut	Chip Load per leading edge	Flutes	Feed Rate (ips)	Feed rate (ipm)	RPM	Max Cut
1" 60 degree Carbide V cutter	13648	37-82	1 x D	.004-.006	2	2.4-3.6		18,000	
1/4" Straight V Carbide Tipped End Mill	13642	48-005	1 x D	.005-.007	1	1.5-2.1	90-126	18,000	
1/2" Straight V Carbide Tipped End Mill	13564	48-072	1 x D	.005-.007	2	3.0-4.2	180-252	18,000	
1/4" Upcut Carbide End Mill	13528	52-910	1 x D	.006-.008	2	3.6-4.8		18,000	
1/4" Downcut Carbide End Mill	13507	57-910	1 x D	.006-.008	2	3.6-4.8		18,000	
1/4" Upcut Carbide End Mill	1108	65-025	1 x D	.004-.006	1	1.2-1.8		18,000	
1/8" Tapered Carbide Upcut Ball End Mill	13636	77-102	1 x D	.003-.005	2	1.8-3.0		18,000	
1-1/4" Carbide Tipped Surfacing Cutter	13555	91-000	1/2-3/4 x D		2		200-600	12,000-16,000	1/8"

Soft Plywood

Name	SB#	Onsrud Series	Cut	Chip Load per leading edge	Flutes	Feed Rate (ips)	Feed rate (ipm)	RPM	Max Cut
1" 60 degree Carbide V cutter	13648	37-82	1 x D	.004-.006	2	2.4-3.6		18,000	
1/4" Straight V Carbide Tipped End Mill	13642	48-005	1 x D	.005-.007	1	1.5-2.1	90-126	18,000	
1/2" Straight V Carbide Tipped End Mill	13564	48-072	1 x D	.007-.009	2	4.2-5.4		18,000	
1/4" Upcut Carbide End Mill	13528	52-910	n/a	n/a	2	n/a	n/a	n/a	n/a
1/4" Downcut Carbide End Mill	13507	57-910	n/a	n/a	2	n/a	n/a	n/a	n/a
1/4" Upcut Carbide End Mill	1108	65-025	1 x D	.004-.006	1	1.2-1.8		18,000	
1/8" Tapered Carbide Upcut Ball End Mill	13636	77-102	n/a	n/a	2	n/a	n/a	n/a	n/a
1-1/4" Carbide Tipped Surfacing Cutter	13555	91-000	1/2-3/4 x D		2		200-600	12,000-16,000	1/8"

Laminated Chipboard

Name	SB#	Onsrud Series	Cut	Chip Load per leading edge	Flutes	Feed Rate (ips)	Feed rate (ipm)	RPM	Max Cut
1" 60 degree Carbide V cutter	13648	37-82	1 x D	.004-.006	2	2.4-3.6		18,000	
1/4" Straight V Carbide Tipped End Mill	13642	48-005	1 x D	.006-.008	1	1.8-2.4		18,000	
1/2" Straight V Carbide Tipped End Mill	13564	48-072	1 x D	.008-.010	2	4.8-6.0		18,000	
1/4" Upcut Carbide End Mill	13528	52-910	n/a	n/a	2	n/a	n/a	n/a	n/a
1/4" Downcut Carbide End Mill	13507	57-910	n/a	n/a	2	n/a	n/a	n/a	n/a
1/4" Upcut Carbide End Mill	1108	65-025	n/a	n/a	1	n/a	n/a	n/a	n/a
1/8" Tapered Carbide Upcut Ball End Mill	13636	77-102	n/a	n/a	2	n/a	n/a	n/a	n/a
1-1/4" Carbide Tipped Surfacing Cutter	13555	91-000	1/2-3/4 x D		2		200-600	12,000-16,000	1/8"

Laminated Plywood

Name	SB#	Onsrud Series	Cut	Chip Load per leading edge	Flutes	Feed Rate (ips)	Feed rate (ipm)	RPM	Max Cut
1" 60 degree Carbide V cutter	13648	37-82	1 x D	.004-.006	2	2.4-3.6		18,000	
1/4" Straight V Carbide Tipped End Mill	13642	48-005	1 x D	.005-.007	1	1.5-2.1		18,000	
1/2" Straight V Carbide Tipped End Mill	13564	48-072	1 x D	.007-.009	2			18,000	
1/4" Upcut Carbide End Mill	13528	52-910	n/a	n/a	2	n/a	n/a	n/a	n/a
1/4" Downcut Carbide End Mill	13507	57-910	n/a	n/a	2	n/a	n/a	n/a	n/a
1/4" Upcut Carbide End Mill	1108	65-025	n/a	n/a	1	n/a	n/a	n/a	n/a
1/8" Tapered Carbide Upcut Ball End Mill	13636	77-102	1 x D	.003-.005	2	1.8-3.0		18,000	
1-1/4" Carbide Tipped Surfacing Cutter	13555	91-000	1/2-3/4 x D		2		200-600	12,000-16,000	1/8"