

Technical Notes

Silencer III for Marble

Alpha Professional Tools® recognizes the need for a high quality marble blade for bridge or table saws and brings this to the marketplace in the form of the Silencer III for Marble. The Alpha® Silencer III is a technologically advanced blade that produces excellent cuts while achieving superior cost performance with reduced noise levels. The uniquely designed core is made of two hardened steel sheets with a thin copper sheet laminated between them. This special construction dissipates the usually high noise levels common to this application. Ideal for use in a variety of different sized shops, marble fabricators will love the cutting ability of this blade and the amount of time they'll save. The Alpha® Silencer III is equipped with a 60mm arbor which is a common size. Adapters are available to reduce the arbor size. Specially formulated, the Alpha® Silencer III will provide excellent cost performance and reduce noise levels while maintaining a high quality cut. If you fabricate marble, the Alpha® Silencer III is perfect for you.

Sections:

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Part No.	Size	Maximum RPM	Type	Arbor
SLW16S2M	16"	3,820	General Purpose Marble	60mm, 50mm
SLW18S2M	18"	3,395	General Purpose Marble	60mm, 50mm

How to Use

1. Choose the specific blade for your application.
2. Make sure that the saw is off. Disconnect from the power supply if possible to ensure safety.
3. Clean flanges, collars and shaft of dirt and debris
4. Place blade on shaft with arrow on the blade indicating same direction of saw rotation. If an arbor reducer is used ensure that the blade and the reducer are snug to the back flange.
5. Put the front flange in its proper location and tighten the lock nut securely. The flanges should always be equal in size and the correct size for the blade being used.
6. Turn blade by hand to ensure correct mounting position (only if motor does not lock)
7. Adjust water feeds to proper locations on the leading edge of the blade.
8. Turn the power on the saw and turn the water on to assure good water flow.
9. Set the depth of the blade to between approximately 3/8" inches below the underside of the stone. This will assure a good clean cut.
10. Turn the saw motor on and start the traverse of the blade to begin cutting.
11. When cutting is finished, return the saw motor to its starting point.
12. Shut down all power to remove the blade.

Always review the operation manual for the proper set-up procedure.

Frequently Asked Questions (FAQs)

What material is the Alpha® Silencer III for Marble blade designed to cut?

This blade is designed as a general purpose blade for all marble.

Will the Silencer III for Marble blade cut granite?

No. This blade is designed for use on marble material only due to its bond. If this blade is used on other material such as granite which is more abrasive, the life and cutting performance of the blade will be sacrificed.

Can the Silencer III for Marble blade be used dry?

No. Wet cutting diamond blades must be used with water to prevent excessive heat buildup during cutting. Using water on the blade also reduces dust and helps enhance the cutting performance and life. A continuous water flow is critical. Using “wet” blades without water even for a few seconds will cause excessive heat and blade damage.

What is the RPM requirement for the Silencer III?

See Appendix A chart for RPM indicators and traverse speeds.

How fast should the blade traverse be set at?

See Appendix A chart for RPM indicators and traverse speeds.

What size flange should I use for my blade?

See Appendix A chart for RPM indicators and traverse speeds.

What sizes are these blades available?

The Silencer III for Marble blades are available only in 16” and 18”.

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What is the arbor size of this blade?

This blade is equipped with a 60mm arbor size which is a common size in the industry. Each blade comes with a 60mm/50mm reducer ring. Other arbor sizes are available. See the chart on page 1.

What is the segment height of this blade?

The segment height of this blade is 5/16” or 8mm.

What is the cutting width of this blade?

The width of this blade is 3mm.

Does the direction of the blade make a difference?

Yes. The blade should be installed on the saw so that the indicator arrows (engraved or screened) point toward the direction the spindle turns. If a blade is installed in the wrong direction, the cutting ability of the blade will be poor.

What is the difference between a regular blade and a silent core blade?

Regular blades are typically constructed with a solid steel core. The hard steel of the core actually reflects and amplifies the sound waves being generated by the blade during the cutting action. This means that the noise levels are far above acceptable ranges without adequate hearing protection. The Silencer III uses a thin copper sheet to absorb the sound waves rather than reflect them. The copper, which is much softer than solid steel, is a better conductor of sound waves much like it is for electricity. The copper absorbs the noise of the cut and conducts the sound waves out through the spindle. By the time the sound waves reach the spindle, the strength of the sound waves has been significantly reduced so the cutting process is much quieter.

I have heard that Alpha Professional Tools® offers a free blade re-tipping service for the Alpha® Silencer III blade Series; is this true?

Yes. If one of your Alpha® Silencer III blades experiences segment(s) loss, Alpha Professional Tools® offers a free re-tipping service which is performed at our NJ facility. We can re-tip these segments back onto your blade as long as the blade core has not been damaged making it unsafe to use. If possible, please send the segment(s) which came off the blade back together with the blade itself.

Helpful Hints

- To get the maximum usefulness from our blades, always select the best blade for the task at hand. Don't try to cut products not suited for blades such as asphalt, tar, large pieces of metal, wood or Corian plastic.
- Inspect blades frequently for signs of excessive wear or possible dangerous conditions such as warping, overheating, cracking or glazing and remove from saw at the end of each work session to lubricate the spindle and flanges.
- Do not use a blade that has been dropped or mishandled. There is a good possibility that the segments may have a developed hairline fracture and may break during use.
- Before doing any work on the saw, installing a blade or removing a blade, make sure that all power to the saw is off and disconnected to prevent accidental start-up.
- When installing a blade on the saw make sure that the spindle and flanges are clean of debris. Dirt or debris can cause the blade to seat improperly and produce warping or out of round wear.
- Make sure that your water supply is plentiful.
- Make sure that the blade is installed so that it will turn in the proper direction.
- When cutting thicker material, make sure that you lower the traverse speed to ensure that the diamond has the opportunity to cut.
- Never exceed the maximum RPM or the maximum traverse speed. This will force the blade to cut and could cause premature wear or segment loss.
- Most segment damage and loss occurs when the operator fails to raise the blade sufficiently to clear the material when moving the blade before or after a cut.

Reference

For more product information, visit us on the web at www.alpha-tools.com.

Appendix A

Silencer III Blade RPM indicators and traverse speeds

Recommended Peripheral Speed Chart															
Peripheral Speed of Blade Vp (feet per second)															
0.0	66.5	82	98.4	114.8	131.2	147.5	164	180.4	196.8	213.2	229.6	246	262.4	278.8	295.2
(inches)	Spindle Rotations (RPM)														
14"	1100	1350	1637	1910	2183	2456	2729	3002	3275	3548	3821	4094	4367	4640	4913
16"	950	1200	1433	1761	1910	2149	2388	2627	2866	3105	3343	3582	3821	4060	4299
18"	850	1000	1273	1466	1698	1910	2123	2335	2547	2760	2972	3184	3397	3609	3821

Recommended Speeds		
(feet per second)		
Materials	A	B
Granite with a high quartz content	82-98	
Granite with a low quartz content	98-115	
Marble	148-180	197-230
Travertine	148-197	262-295
Sandstone	148-213	
<i>A = Standard Speed</i>		
<i>B = High Speed</i>		

Note: Peripheral Speed of blade = 82 ft/sec is for Hard Granites, 98 ft/sec is for softer granites and 164 ft/sec is for marbles.

Traverse Speed for Granite							
Granite Hardness	Square cm. per minute	Slab Thickness	Slab m/minute	Slab Thickness	Slab m/minute	Slab Thickness	m/minute
1	600	3cm	2 meter	2cm	3 meter	1cm	6 meter
2	500	3cm	1.6 meter	2cm	2.5 meter	1cm	5 meter
3	400	3cm	1.3 meter	2cm	2 meter	1cm	4 meter
4	300	3cm	1 meter	2cm	1.5 meter	1cm	3 meter
5	200	3cm	0.66 meter	2cm	1 meter	1cm	2 meter

Traverse Speeds for Marble		
For cutting speeds, please use the same system as the above chart		
Kind of Marble	m/s	Square cm/min
White Crystal Marbles	50-55	2000-2500
Coloured Marbles	45-50	1500-2000
Serpentines	45-50	1500-2000
Travertines (Limestones)	50-60	2000-3000
Sandstone	50-60	2500-3500

Additional Arbors			
Part No.	Arbor Size	Part No.	Arbor Size
ADP6001	60mm to 1"	ADP6045	60mm to 45mm
ADP6030	60mm to 30mm	ADP6050	60mm to 50mm
ADP6035	60mm to 35mm	ADP6125	60mm to 1-1/4"