

Technical Notes

Silencer III for Granite

Alpha Professional Tools® recognizes the need for a high quality granite blade for bridge or table saws and brings this to the marketplace in the form of the Alpha® Silencer III for Granite. 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, granite 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 comes in three different bond types. The first bond type is designed for general use on most common granites. The second bond type is very effective for large fabrication jobs that call for extended cutting on very hard granites and, the third bond type is for general use on softer granites. If you fabricate granite, the Alpha® Silencer III is perfect for you.

Sections:

- How to Use
- Frequently Asked Questions (FAQs)
- Helpful Hints
- Reference



Part No.	Size	Maximum RPM	Type	Arbor
SLW1439G	14"	4,365	General Purpose Granite	60mm, 50mm
SLW1639G	16"	3,820	General Purpose Granite	60mm, 50mm
SLW1839G	18"	3,395	General Purpose Granite	60mm, 50mm
SLW1437G	14"	4,365	Hard Granite	60mm, 50mm
SLW1637G	16"	3,820	Hard Granite	60mm, 50mm
SLW1837G	18"	3,395	Hard Granite	60mm, 50mm
SLW1450G	14"	4,365	General Purpose Soft Granite	60mm, 50mm
SLW1650G	16"	3,820	General Purpose Soft Granite	60mm, 50mm
SLW1850G	18"	3,395	General Purpose Soft Granite	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 to the saw and turn the water on to assure good water flow.
9. Set the depth of the blade to 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 setup procedure.

Frequently Asked Questions (FAQs)

What materials is the Alpha® Silencer III for Granite blade designed to cut?

This blade series is designed to cut all types of granites from soft to hard. To achieve optimum life and performance, choose the Silencer III blade for Granite best suited for the granite hardness classification.

How do I decide which Silencer III for Granite to choose?

Alpha® develop a series of granite blades best suited for providing fast, chip free cutting of soft to hard granite classifications: Choose the blade which best fits your shops cutting requirements for optimum life and quality of cut.

- General Purpose Granite (Medium to Soft Granites)
- Hard Granite
- General Purpose Soft Granite

Can the Alpha® Silencer III for Granite Blade cut “Iron Red” Granite?

Yes. We recommend using the Silencer III for Granite “Hard Granite” blade. It is our understanding that this Iron Red granite is a material which is very difficult to maintain your cutting performance. Re-dressing of the blade may be required and you will need to reduce your traverse cut speed. Step cutting is highly recommended when cutting this Iron Red granite also. If your blades cutting edge glazes over, the easiest way to solve this problem, from our experience is as follows:

- Once the blade gets glazed, try cutting concrete (sand mixture only)
- Make a couple of cuts / passes with the water reduced to 1/4 volume cutting this concrete.
- If concrete is unavailable, try cutting some abrasive sandstone or travertine.
- Step cut into the material for dressing the blade, make at least 2 passes into the material for each cut.

Will the Silencer III for Granite blade cut engineered stone or marble?

We do not recommend using the Silencer III for Granite blade for cutting engineered stone. This blade series is designed for use on granite only. If you attempt to cut other materials such as engineered stone or marble using the Silencer III for Granite blade, the cutting speed maybe be slower and the life of the blade may become short.

Can the Silencer III for Granite blade be used dry?

No. Wet cutting diamond blades must be used with water to prevent excessive heat buildup during cutting. 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? Please see the following charts for RPM indicators and traverse speeds:

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? Please refer to the following chart and diagram

See Appendix A chart for flange sizes.

Which size blade works best?

The Alpha® Silencer III blades are available in 14, 16 and 18 inch. These sizes will fit most common cutting applications. Select the size based upon the requirements for your saw. If your saw can accept all available sizes, select the size blade that will give you the best cost per cut.

What sizes are these blades available?

These blades are available in 14", 16" and 18" diameters.

What is the arbor size of these blades?

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. See Page 1 for other arbor sizes.

What is the cutting width of this blade?

This blade will leave a 1/8 inch kerf. This is suitable for cutting grooves to install re-enforcement rods that are 1/8" thick.

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 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 also 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 free blade re-tipping service for the Alpha® Silencer III 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 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"