

SUPERTRAPP LIMITED WARRANTIES

SuperTrapp Industries, Inc. of 4540 West 160th Street, Cleveland OH, USA 44135 ("SuperTrapp") offers the following warranties with SuperTrapp Automotive & Marine products.

Limited Lifetime Warranty for S/C Elite Series

S/C Elite SuperTrapp Automotive mufflers are warranted against defects in factory materials and workmanship until original ownership of the muffler is transferred, subject to the limitations below.

Standard Limited Warranty

All non-S/C Elite SuperTrapp Automotive & Marine Series products are warranted against defects in factory materials and workmanship for one year from the date of purchase or until original ownership of the muffler is transferred, whichever occurs first, subject to the limitations below.

Under these warranties, SuperTrapp, at its option, will repair or replace defective, covered parts or provide a replacement unit. Repair by SuperTrapp or replacement are the exclusive remedies under these written warranties or any implied warranty. SuperTrapp makes no warranty with respect to components of the SuperTrapp muffler not manufactured by SuperTrapp, including but not limited to the following: clamps, bolts, nuts and packing. SuperTrapp will not pay for the cost of removal or installation of the unit from any vehicle, or for delivery or pick-up of the unit.

SuperTrapp shall not be responsible for any consequential, special or incidental damages of any nature, including but not limited to the loss of use of any vehicle on which the unit may be installed and the cost of obtaining another substitute muffler. Some states do not allow the exclusion or limitation of incidental or consequential damages.

These warranties are valid only if the proper type of unit is installed, operated and maintained in accordance with factory instructions. These warranties do not cover any damage caused by (i) modification or alteration of the unit; (ii) improper installation, maintenance, operation or use; (iii) accident; (iv) service or repair by anyone other than SuperTrapp or its authorized agents.

To obtain service under these warranties, the original purchaser must submit such a unit with a dated sales receipt or copy to an authorized SuperTrapp dealer or SuperTrapp Customer Service Department. Factory direct submissions must be issued a return authorization number before returning the unit or warranty will be denied. To obtain factory direct return authorization, please call 216-265-8400, M-F, 8-5 EST.

These warranties give you specific legal rights and you may also have other rights which vary from state to state. Outside of the United States, a different warranty may apply. For details, please contact SuperTrapp or an authorized SuperTrapp dealer.

Don't forget! - SuperTrapp mufflers are rebuildable for a lifetime of service. Call SuperTrapp or your nearest dealer for parts information and availability.

SuperTrapp Industries, Inc. - 4540 West 160th St. - Cleveland, OH 44135
Tel - (216) 265-8400, Fax - (216) 265-8352, www.supertrapp.com, *E-mail - sales@supertrapp.com

**Please include a return phone number with all e-mails.*

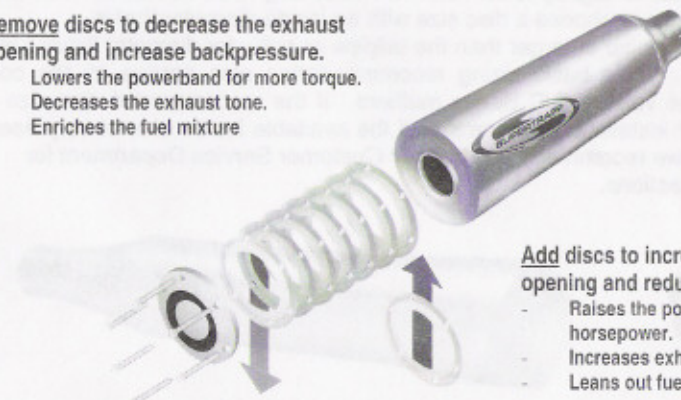


AUTOMOTIVE & MARINE GENERAL TUNING GUIDE

SUPERTRAPP mufflers let YOU tune the Performance and Sound Level of your exhaust system!!

Remove discs to decrease the exhaust opening and increase backpressure.

- Lowers the powerband for more torque.
- Decreases the exhaust tone.
- Enriches the fuel mixture



Add discs to increase exhaust opening and reduce backpressure.

- Raises the powerband for more horsepower.
- Increases exhaust note.
- Leans out fuel mixture.

Diffuser Disc Functions

Flow Controller - The precision air gap formed by stacking discs provides the open area for exhaust flow and noise to escape. The illustration above shows how adjusting the amount of this open area affects power, sound level and fuel mixture simultaneously. When the open area is increased by adding more discs, back pressure is lowered for more peak horsepower, more noise is allowed to escape from the system and it will usually lean out the fuel mixture. By adding enough discs, a SuperTrapp muffler can achieve 'open' exhaust flow or more (see Exhaust Scavenger below). Decreasing the open area by removing discs has the opposite affect on all these factors.

Noise Diffuser - Simply stated, noise is broken down as it forced to pass over the combined surface area of the discs. The remaining noise is then diffused as it disperses radially from the outer circumference of the discs. This noise diffusion technology is what makes SuperTrapp products the most efficient performance mufflers available.

Exhaust Scavenger - As exhaust flow passes through the narrow gaps between the discs, a venturi effect is created that 'pulls' or scavenges exhaust gas out of the system between pulses. This 'pulling' effect results in less work for your engine, a cleaner burning combustion cycle and more power. (See Wave Tuning for more info.)

Spark Arrestor - All SuperTrapp mufflers are U.S.F.S. Approved Spark Arrestors.

PRODUCT SELECTION GUIDELINES

Just like having the right camshaft or carburetor, having the right SuperTrapp muffler ensures the best possible performance. Consider all of the following items.

<u>Disc O.D.</u>	<u>Disc I.D.</u>	<u>Max. HP (per muffler)</u>	<u>Max. Eng. Size (per muffler)</u>
3"	1 5/8"	100	92 c.i./ 1.5 liter
4"	2 7/16"	250	250 c.i./ 4.0 liter
5"	3"	400	350 c.i./ 5.7 liter

Horsepower & Displacement - To maximize the disc tuning effect, it's important to select a disc diameter that is large enough to handle the engine's flow requirements. The disc size recommendations shown above are estimated for normally aspirated engines. Engines with comparatively high exhaust flow requirements (i.e.; forced induction, high compression, sustained high RPM use, etc.) should assume slightly lower Max HP/ Max Eng. Size numbers. The best overall guideline is to choose a disc size with an inside diameter that is close to the same size or larger than the tailpipe or collector diameter flowing into it (the muffler). This basic sizing recommendation also applies to the core diameters of the various S/C Series mufflers. If the recommended disc size is too big for your installation concerns or if the available inside diameters present flow concerns, we recommend you call our Customer Service Department for additional suggestions.



A range of muffler lengths is also offered in each of the disc diameter categories. The **Disc Only** mufflers are the shortest and offer a moderate amount of silencing in a lightweight, compact design. Disc Only mufflers are generally used for off-road/ racing applications or as an 'add-on' silencer to existing systems. (The **Marine Series** mufflers are based on the 5" Disc Only design so they can be run 'wet'.) The **S/C Series** muffler design mates the disc technology to the outlet of a straight-thru stainless steel core, noise absorption muffler. Available in different lengths, the S/C Series mufflers are the most popular choice for street-driven vehicles or racing applications with moderate-to-strict noise controls.

Powerband - Determine the primary operating RPM range or in what RPM range you want power to be most enhanced. Realize that tuning strictly for high RPM power gains may result in some low RPM power losses.

Noise Tolerance - It's important to remember that the larger the SuperTrapp muffler, the more it will flow with the least amount of noise. For example, a Disc

Only muffler with twelve 5" discs compared to an 18" long, S/C muffler with twelve 5" discs will flow the same, but the S/C muffler will be quieter. So applications with a comparatively low to strict noise tolerance may want to consider larger mufflers than are required for power and engine size alone. This will insure against power losses resulting from too small a SuperTrapp muffler being adjusted 'down' to comply with noise concerns. Also, S/C Series mufflers with smaller core diameters contain more packing than their larger-cored counterparts, resulting in a slightly quieter muffler with the same external dimensions. Racers with critical power, noise control and installation objectives are encouraged to call our Customer Service Department for detailed technical assistance.

Physical Preferences - Installation space, tailpipe collector size to muffler inlet size matching, choice of stainless steel or black-painted steel, etc.

TUNING GUIDELINES

The following information assumes that the proper model SuperTrapp muffler has been selected to meet your combination of performance and sound control objectives.

How many discs do I need to use? - All SuperTrapp Automotive mufflers come with a standard quantity of (12) discs each. This (12) disc quantity or fewer is usually adequate for most stock-to-moderately-modified engines. Engine designs of a more extreme nature or any high rpm engine use can usually take advantage of more than the standard (12) disc quantity. Generally speaking, 'open' exhaust flows are usually achieved at about 20-24 discs, regardless of disc size. So adjustment beyond these levels seldom results in noticeable change.

Although there are some common examples, the combined factors that affect individual adjustment levels are virtually unlimited. If you need a more detailed recommendation, our Customer Service Department will be glad to assist you.

Color Tuning - For gasoline burning engines, one of the easiest ways to check for proper disc adjustment is to read the coloration of the discs the same way you would read a spark plug. Generally, discs that are tan-to-dark brown (a little black is also OK) indicate an ideal balance between exhaust backpressure and fuel delivery. Untinted or grey discs usually indicate a lean condition, while overly black to 'sooty' discs indicate a rich fuel mixture or oil burning condition. Fuel delivery or disc adjustments can be performed to suit your preferences for powerband and noise control.

Wave Tuning - This refers to tuning the scavenging of the exhaust pulses or exhaust waves that occur, particularly with normally aspirated engines. The exhaust scavenging effect of the discs primarily enhances low-to-mid RPM performance. Proper wave tuning can result in a versatile combination of low RPM torque with high RPM horsepower. (See Exhaust Scavenger for more info.)