

small holes into a large chamber where it expands and is forced through another partition. This style was poor at silencing and was responsible for a high power loss.

The next iteration was a straight-through muffler with the radial silencing chambers around a flow tube incorporating a series of different sized holes. Large holes on the entry side cancelled low-frequency sounds while the exit side used smaller holes for high-frequency attenuation. Silencing was done by applying the Helmholtz principle, and there was no material around the radial tubes. The advent of the oval-shaped or Tri-Flow muffler is what most of us are familiar with. In this design, the gas passed through three distinct mufflers housed in a single shell. It consisted of tuning chambers and low- and high-frequency chambers. Other designs included fiberglass material around a radial diffuser (glasspacks) along with variations of the Tri-Flow design with fewer chambers.

The advent of Flowmaster's (patented) exhaust-silencing technology represented a quantum leap. Having studied exhaust theory for years, owner Ray Flugger developed a muffler that improved performance while canceling unwanted sounds. To develop this technology, Flugger used a spectrum analyzer and an advanced SuperFlow dyno with an engine cycle analysis program. By incorporating four distinct chambers, he was able to cancel sound while offering a minimal flow restriction. His brainchild actually creates a low-pressure area in the muffler that helps scavenge the cylinders.

As our hobby progresses, it would be wise to take advantage of the breakthroughs in exhaust technology. A properly sized custom exhaust system and headers using a balance tube and an efficient muffler will unleash power while minimizing noise—something that Detroit could only dream about 30 years ago.

Sources

Dr. Gas

Dept. HR10, 1672 East 10770 South, Sandy, UT 84092;
801/563-1111
exhaust crossovers

DynoMax

Dept. HR10, 2701 N. Dettman, Jackson, MI 49201;
800/767-3966
high-flow mufflers

Flowmaster

Dept. HR10, 2975 Dutton Ave., Ste. 3, Santa Rosa, CA 95407;
800/544-4761
mufflers and exhaust systems

Hedman Headers

Dept. HR10, 16410 Manning Way, Cerritos, CA 90703;
562/921-0404
headers

SuperTrapp

Dept. HR10, 4540 W. 160th St., Cleveland, OH 44135;
216/265-8400
adjustable back pressure mufflers

Van Sant Enterprises Inc.

Dept. HR10, 415 E. Oskaloosa St., Pella, IA 50219;
515/628-3206
mandrel pipe bending equipment