

A Review of ZR-1 Exhaust Systems

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Exhaust System Types

Sound

Performance

Headers

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Exhaust Systems That Are Found On C4 ZR-1's

- OE '90 – '92 2 ¾"
- OE '93 – '95 2 ¾"
- Borla: 2 ½"
 - Challenge 3"
- B&B: 3"
 - Version 1. Least restricted.
 - Version 2. With screens.
 - Version 3. With screens and plates.
 - Version 4. With screens, plates and outlet restrictor.
- Corsa 2 ½"
- Power Effects ?
- Flowmaster 2 ½"
- Stainless Works 3"
- Desert Development 3"

Exhaust Tone

There are two basic methods to reduce loudness:

- Absorption

Has a low frequency rumble sound

Borla

B&B

Power Effects

Stainless Works

- Pressure wave cancellation

Has a high frequency sound

OE

Corsa

Flowmaster

Exhaust Loudness

- The OE systems are quiet
- Medium Loud:
 - Borla. Both systems.
 - B&B Versions 2, 3, and 4.
 - Flowmaster
 - Corsa at less than 40% throttle
- Very Loud:
 - B&B Version 1
 - Power Effects Open
 - Corsa at full throttle
 - Desert Development

Resonance

- None:
 - OE
 - B&B version 4
 - Corsa
- Medium:
 - B&B versions 2 and 3
 - Power Effects closed
 - Borla. Both systems.
 - Flowmaster
- Loud:
 - Any B&B with an x-pipe
 - Power Effects open
 - Desert Development

Power That Is Lost To The Exhaust System

I believe that power increases constantly as backpressure is reduced.

- OE '90 – '92 - 20 hp
- OE '93 – '95 - 10 hp
- Borla: 2 ½" - 10 hp
- Challenge 3" - 10 hp
- B&B:
 - Version 1. Least restricted. - 5 hp
 - Version 2. With screens. -10 hp
 - Version 3. With screens and plates. -10 hp
 - Version 4. With screens, plates and outlet restrictor. -15 hp
- Corsa - 5 hp
- Power Effects Open –5 hp Closed –10 hp
- Flowmaster -10 hp
- Stainless Works - 5 hp
- Desert Development Low loss

Why Is The '90 – '92 OE System So Poor For Power?



How Did They Improve The '93-'95 OE System?

- The resonator is 2 5/8" ID
- Without the mufflers it's a lot like straight pipes

Borla Systems

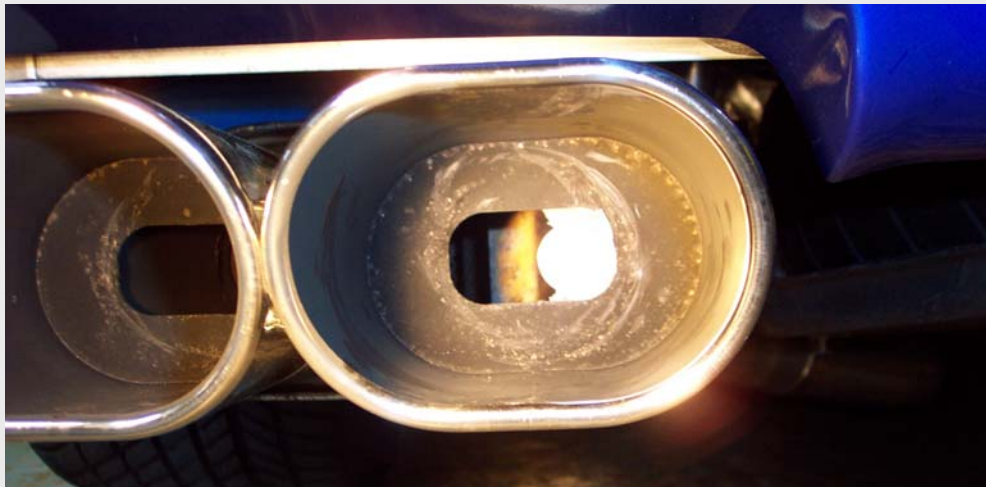
- There is a 1 5/8" choke at the inlet to the resonator
- Excellent performance without the choke and resonator
- I think that the Challenge system is no better for power

B&B Systems

- Version 1 is the best for power and the loudest
- The resonator on version 2 and up is restrictive



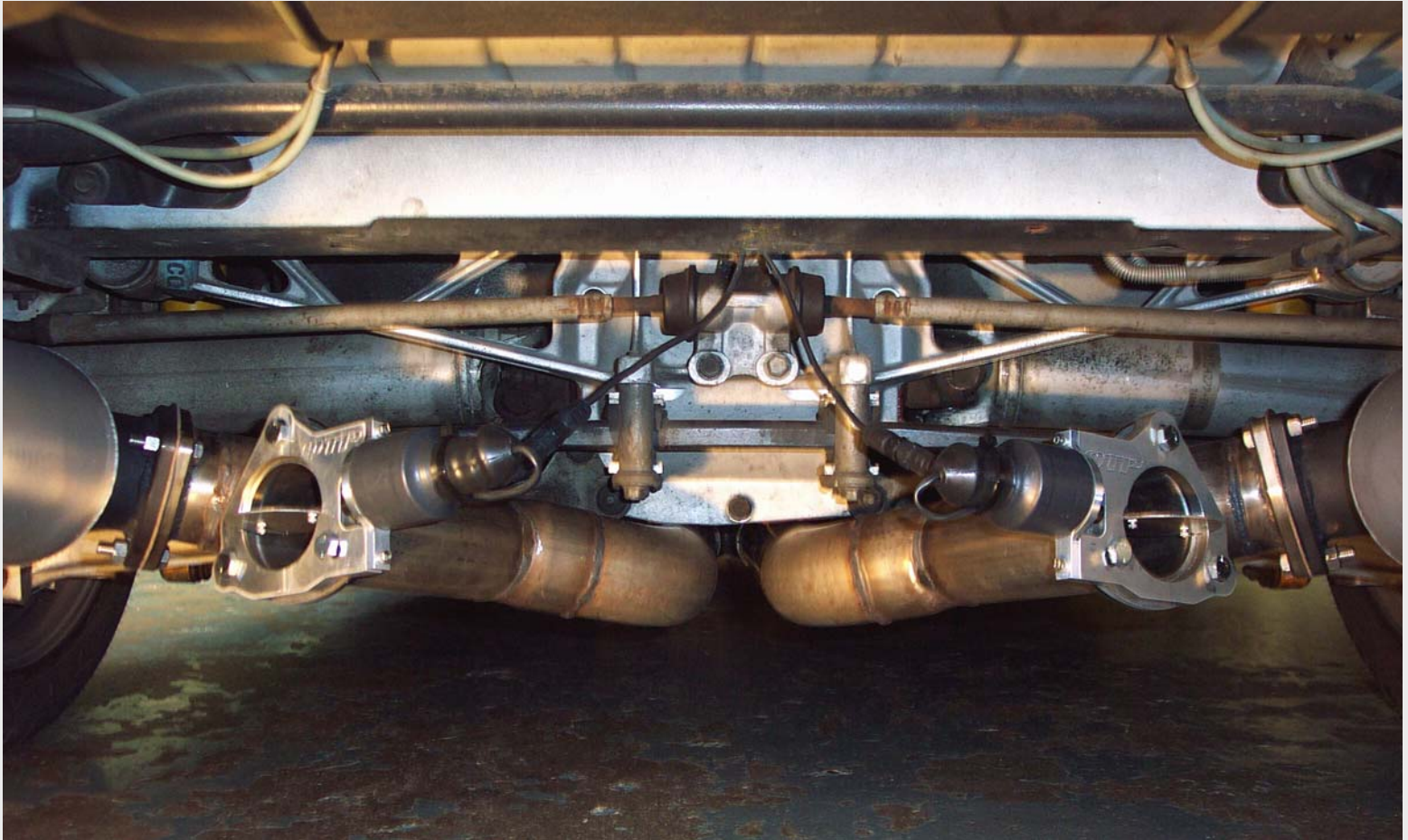
- The muffler on version 3 has a blocking plate
- They fixed the resonance on version 4



Why Does The Corsa Outperform The B&B With An X-Pipe?



The Best Of Both Worlds



Headers

The OE manifolds are easy to improve upon for power



+ 25 hp

