Can you weld Porsche water boxer cylinder heads to save money?

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Dear all,

Can you weld water-cooled Porsche 911 - 996 - 997 - Boxster - Cayman cylinder heads to save money?

We get asked these and similar questions several times a year.



The background is: Cylinder heads in Porsche vehicles are often destroyed by cracking as a result of excessive heat input. This results in further engine damage. We notice this again and again in connection with engine repairs.

Due to the enormous cost of new cylinder heads, some of the aggrieved customers are looking to the open market for solutions, primarily to save money.

The result is often repair solutions by welding the heads, mostly using the laser welding process.

There is nothing wrong with that in principle, only the result is not a permanent solution. Therefore, I am making the following claim today, simply because that is our experience so far:

YES, you can weld cylinder heads!

NO, these repairs do not last, because the same defects of crack formation usually appear again after a relatively short time.

Why is that?

Cylinder heads of air and water-cooled Porsche engines are manufactured using the aluminum die-casting process. When casting an engine block or cylinder head, additives in the form of copper, silicon and magnesium are added to the casting in specified amounts as alloying additives.

Even if the weld metal, as the material used during welding is called, contains absolutely the same ingredients of the material to be welded, intermolecular stresses and Forces such that cracks and damage to the heads occur again, as in the present case.

Therefore we would like to advise our customers against welding their
cylinder heads and prefer to invest in new or good used cylinder heads.

If you have any questions, please do not hesitate to contact me.

Warm greetings

Jürgen Albert

master mechanic