

## HEADERS

From: "Skid" <Not\_here#gte.net>  
Subject: MY \$.02 on the header issue...and another question!  
Date: Tue, 17 Mar 1998 22:44:43 -0800

Yo!

Having had several sets of headers in my past, and particularly a longer haul experience with a full Banks kit on my last P-30 moho, believe it or not I'd tend to agree with Arch: save the \$\$ on the headers - just make sure that you get a superior job done on the system aft of the manifolds.

We just had to replace the original manifolds on our '76 Eleganza (a 455, but most of you know that!), and the problem was that the beautiful, almost new 3" exhaust system was only put on very recently by the previous owner. So the original manifolds had cracked on both sides, in several places. We were pleased to find out that Cinnabar still has some NOS 455 manifolds, and in spite of UPS strike (the work was done last summer), they were able to get them to us in less than 4 days.

> From: Brewer, Bob [SMTP:rebrewer#ucdavis.edu]  
> Sent: Wednesday, March 18, 1998 12:38 AM  
> Subject: RE: GMC: Re: GMC Open discussion of Upgrades

>  
> I think I'd disagree. Headers can make a great improvement, especially (and >I think this is what Marcus alludes to) if the exhaust is designed properly, >i.e. large enough diameter to provide proper flow, proper muffler, etc.

>  
> Jet-Hot coating the headers is a wise investment, as it reduces engine >compartment temps enormously and provides a bullet-proof protective coating.  
> Just my .02  
> Bob Brewer

>  
Full Caspro suspension, Jardine exhaust & headers, upgraded front calipers & pads. What do you all think and what is the reasoning on the cost benefit trade off?

Marcus

IMHO I would not put on headers. Yes, lots of people "LOVE" them. Headers are great for hot rods. I have used them on my race cars. I would never put on headers in front of a muffler. Headers help to get more burned fuel and air out of the cylinders. When you have a muffler and nearly 20 ft of tail pipe after a header they just can't do that. Headers are also going to raise the under hood temps alot. Well I have gone and done it now so let me only say that you have my honest opinion-----maybe not a popular one-----but honest from my point of view.

Take Care  
Arch

Date: Wed, 18 Mar 1998 09:43:34 -0500  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>  
Subject: RE: GMC: Re: GMC Open discussion of Upgrades

I installed headers, coated (ceramic aluminum) inside and out by High Performance Coating (<http://www.hpcoatings.com>), Flowmaster mufflers (2.5 " inlet/outlet) and 3 " exhaust tubing after the Y-collector. Not only did that wake up the engine, but I have less heat in the engine compartment compared to the original system. Thermodynamically, the hotter the exhaust gasses, the faster they will flow.

Not only is the coating (looks almost chrome plated) an insulator, but it inhibits corrosion of the piping. I'm not ever expecting to have to replace the coated piping.

Along with a 3:42 to 1 ring and pinion gear, my 403 ci engine 78 GMC will outperform a 455 ci engined GMC (without the modifications I installed) on the hills.

Paul Bartz

Date: Wed, 18 Mar 1998 09:38:43 -0600  
From: Rich and Dottie Major <bmajor#worldnet.att.net>  
Subject: Re: GMC: Re: GMC Open discussion of Upgrades

Paul,

I achieved the same performance you are talking about, but without the headers. I installed Flowmaster Mufflers, an MSD ignition with a "spark box" and an open element air cleaner. The engine breathes better and all the fuel is burnt in the cylinders with the new ignition. An added benefit with the MSD is the engine now starts much easier.

I have had headers on several other cars and I would not want to install them on a motorhome. I was replacing header and collector gaskets continuously on these cars. Due to the nature of headers, they burn gaskets and I would not want to be replacing them on the GMC too often.

Rich Major  
'78 Kingsley

Date: Wed, 18 Mar 1998 07:51:59 -0800  
From: "Heinz Wittenbecher" <heinz#bytedesigns.com>  
Subject: GMC: Another 2 cents re Headers and particularly wrapping them.

DON'T.... wrap 'em that is.

I've had Thorley's on my '76 for close to 200k and almost 10 years. They've never been off, until now.

I don't know if the original manifolds would've lasted this long but they might've. Anyhow this 2 cents worth is about wrapping headers. I never received any advice/warning from the shop that installed them against wrapping so when it came up some years later and pointed out to me that it would help to get rid of heat faster, not that I had a problem, we wrapped them. [ Sometimes we (at least I) do things just because, not for any real reason other than that we (I) want the best for the coach as I fully expect 'it' to outlive me :- ) ]

Anyhow, after about 3 years after wrapping them the headers are disintegrating in rust. What is now being explained to me is that you 'never' wrap headers in use on a motorhome, i.e. it's a racetrack trick/application. Moisture collects during cooldown, etc. and eventually there's nothing left. Makes sense, now...

I'm currently putting new ones on. Yes, Thorleys again. This time I'm doing it 'in-house', which means that I got to open the box that contained a "can't miss it" notice that warranty is void if headers are wrapped. I can't help but wonder if the notice was there when I bought my last set... oh well, that's water under the bridge.

So much for my ramblings (this time :-)

Heinz  
'76 Transmode

Date: Wed, 18 Mar 1998 11:04:06 -0500  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>  
Subject: RE: GMC: Re: GMC Open discussion of Upgrades

Pat:

The brand is Doug Thorley and I've put about 10,000 miles on them so far.

Although the Thorley instructions say to retorque the bolts initially, after a few hours running, after 30 days and every six months thereafter, I've only retorqued them once.

No problems with the gaskets.

One of the ways to eliminate the leaky/cracking original cast iron exhaust headers common to the GMC, is to change to headers. Everyone I've heard talk about it says you never have to worry again.  
Paul

>Bob.....

I agree with your thoughts on headers. They're designed to do a specific job, but not for a GMC. Mufflers and a long exhaust system produce back pressure. Headers are designed to dump exhaust gas rapidly so a clean charge of fuel can come into the cylinder without exhaust contamination. I just don't think it can happen on a GMC. We already have an overheating problem if we're not careful. Why add to it?  
Jim Davis  
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Date: Wed, 18 Mar 1998 17:45:02 EST  
From: CHill113 <CHill113@aol.com>  
Subject: Re: GMC: [Fwd: MY \$.02 on the header issue...and another question!]

In a message dated 98-03-18 08:05:02 EST, you write:

<<

I'll join Bill and Arch swimming against the tide on this one. I've had headers on several vehicles. My first experience was on a 70 Camaro and it was the best of the lot - due IMO to the fact that an increase in power

related (quickly!) to an increase in speed, easily dissipating the additional heat. On vehicles that need to make their power at low speeds(4WD trucks and motorhomes), I've never been happy with them. The increase in engine compartment heat is tough on fuel and ignition systems. Header wraps or ceramic coatings help that somewhat, but then you have to deal with accessory brackets that mount to the exhaust manifolds not fitting well on the headers (BTDT). IMO, the power gains that most people attribute to headers actually come from the free flowing exhaust system they mount at the same time. Go with the 3" exhaust, but save your money (and headaches) on the headers.

>>

I haven't had headers, but have gone with 3" exhaust and it made a noticeable difference. It will fit in the same channel as the original exhaust pipe, "if you know the right words to use while installing it"!!!

Justin

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Date: Wed, 18 Mar 1998 17:53:27 EST  
From: CHill1113 <CHill1113@aol.com>  
Subject: Re: GMC: Another 2 cents re Headers and particularly wrapping them.

A somewhat related subject, torquing the bolts. Everyone except me may know this already, but in a tech seminar at our GMC Club awhile back, one of the gurus conducting it said that if you will dip the exhaust manifold bolts in plain (not flavored) Milk of Magnesia before installing, they will not seize and can be removed easier when that becomes necessary!

Date: Sun, 22 Mar 1998 20:06:01 -0811  
From: Scott Woodworth <myvair#lemooren.net.com>  
Subject: Re: GMC: [Fwd: cylinder heads for 1976 Palmbeach]

Rich,

The GMC motorhome shop manual does not show the use of exhaust manifold gaskets. There's a good reason not to use them in this application.

Motorhome service causes a great amount of heat. The engine is under a moderate to heavy load most of the time. I'd be willing to bet that the exhaust manifolds can get dull cherry red during long hill climbs. Using gaskets will insulate the exhaust manifolds from the heads. That leads to overheating and cracked manifolds.

The best solution is to take them down to a good machine shop and have them checked for cracks then have them surfaced. Make sure that they take off only as much metal as necessary.

Reinstall the manifolds without gaskets and torque the center bolts to 25 foot pounds. Then torque the outside bolts to 15 foot pounds. That allows the manifolds to expand lengthwise when they get really hot. That way, they won't crack. Leaving the gaskets out will allow the water cooled heads to sink more heat from the manifolds. This tip comes from the book Trailer Life's Rx for Rv Performance and Mileage by John and Estes, Bill Geraghty. (Out of print)

Note: Do not use galvanized bolts on your manifolds if you ever plan to remove them. Please use grade 5 or grade 8 bolt and put anti seize on them or dip them in plain unflavored Milk of Magnesia.

- -Scott Woodworth  
P.S. The 403 heads are 4C.

From: Heinz Wittenbecher [SMTP:heinz#bytedesigns.com]  
Sent: Sunday, March 29, 1998 8:11 PM  
Subject: GMC: Project enlarged to include Muffler/Tailpipe.  
Looking for suggestions/recommendations.

My new Thorley Headers are not quite sliding in as a direct replacement which means some cutting and welding is going to be necessary.

Since my tailpipe past the muffler is 10+ years old and the mufflers are of the Muffler Shop variety done as an emergency replacement I'm considering to treat the ol' gal to some new ones.

When the Muffler Shop installed the last ones everything got welded. Is that really necessary? recommended?

I've seen Flowmasters mentioned/recommended in this list before. I presume that's the mufflers?

I would also assume that complete kits are available and while I've seen Jardine exhaust kits advertised I've not been paying the greatest of attention as there hasn't been the need :-)

So... what is going to be my best bet if replacing new from back bumper to Thorley Headers?

Any suggestions/recommendations/experiences greatly appreciated.

Heinz  
'76 Transmode, Vancouver BC (actually Langley).  
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Date: Wed, 1 Apr 1998 10:29:45 -0500  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>  
Subject: GMC: RE: Project enlarged to include Muffler/Tailpipe. Looking for suggestions/recommendations.

Heinz:

A year ago last December, I replaced my entire exhaust system at the time I needed a new muffler.

Went with Thorley headers, Flowmaster mufflers (big block series) and three inch exhaust pipe after the Y-pipe on my 78 with a 403 ci engine. Had a muffler shop custom bend the piping between the mufflers and the Y-pipe.

Prior to installing the system, I sent the parts to Hi Performance Coating to be coated with an aluminum-ceramic coating. I was after longevity and as a bonus the coating acts as an insulator and keeps the engine compartment cooler.

When I assembled the joints, I used band clamps vs. the usual U-bolt style, which put a crimp in the metal and make it difficult to separate later when needed.

In conjunction with the 3.42:1 ring and pinion gear installation, I now have better hill climbing ability on the highways than a stock 455 ci engined coach.

In case you're not already aware, there is another alternative in addition to the Jardine system. A fellow in Ontario Canada makes a stainless steel system. He usually advertises in the GMCMM magazine in the want ad section, however I didn't find it in the March issue.

Paul Bartz

Date: Wed, 08 Apr 1998 11:34:13 -0400  
From: Thom Hole <thhole#cisco.com>  
Subject: GMC: source for Thorley Headers

Does anyone know of a mail order source for the THORLEY (?) headers that I have been reading all about?? I need to rework the exhaust system from cylinder heads to bumper. Also looking for source for Stainless y-pipes and other parts necessary. I have just subscribed to GMCMM and Cinnabar's newsletter, so I don't have any back issues for researching the Ads.

Thx.....th

Thom Hole-----

Date: Thu, 09 Apr 1998 19:06:34 -0400  
From: Marcus McGee <crsalert#frontiernet.net>  
Subject: Re: GMC: source for Thorley Headers

Thomas G. Warner wrote:

>

>>From everyone that I have talked to they advise against having the headers coated. The reason that they run hot is that there is too much backpressure,(SNIP)

Well, I have the 3" exhaust from Jardine and the headers. The idea is to keep as much heat in the exhaust pipe so that the heat and exhaust are drawn out at the tail pipe. The ceramic coating does this and also allows the engine compartment to remain cooler. The compartment already has a heat problem. Before having mine coated they were very hot (red glow at night). I had mine done by Swain Coating here in Rochester and now I can almost touch them and not get burned. What I had done was overkill as this stuff is used by the Air Force, NASA and Nascar but he is close and it was easier than sending them to Jet-Hot. Swain does not look as nice as Jet-Hot but is more effective and a few more bucks.

If I ever do an engine I will have them do all the internals, such as the bottom of the manifold, tops of pistons etc. The new ceramics can control heat and friction in ways that were unknown in the past. Most major racing - F1, WSC and endurance engines use the stuff and along with

new syn oils the engine self destructing has gone way down. It truly is overkill but all I want is the GMC to go like a Cobra, ride like a Mercedes, and handle like a go kart. My wife says "OVERKILL" is my middle name.

Marcus

Date: Fri, 10 Apr 1998 14:39:59 -0400  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>  
Subject: RE: GMC: source for Thorley Headers

As I understand it, thermodynamically speaking, the principal is that the hotter exhaust gas can be kept, the faster it will flow, which leads to more complete expulsion of the products of combustion in the engine and consequently less back pressure. Thus, exhaust tubing that is ceramic coated is more efficient in retaining the heat of combustion vs. uncoated tubing, which radiates or loses heat.

Paul Bartz  
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Date: Fri, 10 Apr 1998 15:31:17 -0400  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>  
Subject: RE: GMC: source for Thorley Headers

Marcus, et al:

Another thing I should have discussed about ceramic coating is that it provides longevity to the exhaust system.

When I decided to get my headers, etc., coated, I was looking for longevity (don't want to have to replace exhaust system components a few years down the road due to corrosion/rusting out) as well as a reduction of heat in the engine compartment.

Some individuals claim uncoated headers increase engine compartment temperatures, while others claim the opposite??

I understand that the coating put on the Doug Thorley headers during production, is a cheap nickel coating. After use, it starts turning colors and even rusts.

You can save a little money by purchasing the headers uncoated if having them ceramic coated. Otherwise, the coater will need to sandblast it off prior to coating, which costs extra.

Had my coating done at Hi Performance Coating (HPC) in Salt Lake City. They were able to coat both the inside and outside of the tubing.

As a matter of fact, I got the best price on the headers from HPC with the added advantage of saving cost shipping them to HPC.

Paul Bartz

> From: Marcus McGee [SMTP:crsalert#frontiernet.net]  
> Sent: Friday, April 10, 1998 2:55 PM  
> Subject: Re: GMC: source for Thorley Headers  
>  
> Exactly what I was trying to say, but Paul says it with such elegance.  
>  
> Marcus  
>  
> Bartz, Paul wrote:  
>>  
>> As I understand it, thermodynamically speaking, the principal is that the hotter exhaust gas  
>>can be kept, the faster it will flow, which leads to more complete expulsion of the products of  
>>combustion in the engine and consequently less back pressure. Thus, exhaust tubing that is  
>>ceramic coated is more efficient in retaining the heat of combustion vs. uncoated tubing,  
>>which radiates or loses heat.  
>>  
>> Paul Bartz

Date: Thu, 18 Jun 1998 16:25:13 -0700  
From: Chuck Will <willa#impulse.net>  
Subject: To Coat or Not to Coat!

Greetings. I was wondering if any of you out in the GMC world have taken to the Ceramic Coatings for the Doug Thornley Headers or some other brand of headers. I purchased the headers from "Mondello's in Paso Robles" and have read a lot about the coating. The ceramic coating cost is \$ 220.00 plus the freight each way. Is it worth this cost? The Thornley headers comes with a "Jet Hot" Industrial coating on the outside. This coating however, does not cover the entire inside of the headers.

In addition, the copper gasket supplied by Mondello (at an additional cost) has two cylinder exhaust ports together in the center. Is this correct or should the center ports be welded shut. I am confused here. I thought the idea from the header was to keep all the exhaust ports separated so they would increase the flow of the exhaust gases independently of each other. If this is the case does it not seem reasonable the thick copper gasket should be closed in the center for this application? Need some Technical Help.  
Thanks Chuck

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Date: Fri, 19 Jun 1998 09:38:21 -0400  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>  
Subject: RE: To Coat or Not to Coat!

Chuck:

Where have you been. Back on April 12th, there was a lot of discussion on



Thorley headers and coating.

Let me know if you don't have access to e-mail from that era and I will e-mail it to you.

If by the "two cylinder exhaust ports", you are talking about the passages to the intake manifold, there was also previous discussion on that. If you want to pursue that, the ports have to be plugged and then you need to substitute an electrically operated choke on the carburetor for the original choke. Same as above, if you don't have access to the earlier discussion, let me know and I'll e-mail it to you.

Paul Bartz

Date: Thu, 10 Dec 1998 22:07:52 -0000  
From: "Donald W. Miller" <millerdw@vaix2.net>  
Subject: Re: GMC: Ceramic coating for thorley headers

Tom , I know two places you might check out.

Jet Hot Coating  
55 E. Front Street  
Bridgeport, Pa. 19405  
800 432-3379

Swain Tech Coatings  
35 Main Street  
Scottsville, NY 14546  
716-889-2786

Jet Hot did mine. Outside looks great. Close inspection showed a small area inside they missed coating.

If you buy new thorley headers, before coating, put a light inside and check the welds. Had to do a little more welding on mine. Of course their welder had missed those areas where it is most difficult to get to.

Don Miller  
Shenandoah Valley of Virginia

Date: Thu, 10 Dec 1998 20:25:30 -0500 (EST)  
From: "Thomas G. Warner" <warner@borg.com>  
Subject: Re: GMC: Ceramic Coatings For Thornley Headers

could you tell me about how much I will have to pay?

At 04:13 PM 12/10/98 -0800, you wrote:  
>Greetings! Aloha. Just returned from the islands and catching up on the email. Maybe somebody already put Tom in the right direction but if not contact Cory Ure at 1-800-456-4721 or [www.hpctech@hpcoatings.com](mailto:www.hpctech@hpcoatings.com). They have a plant in Utah and one in Oklahoma. The plant in Oklahoma does the headers inside and outside and are very nice. I also suggest you take or turn in your new Thornley headers from where you purchased them and get them from Cory. If your got your headers any where else they will have a coating on them, looks nice and shiny and must be removed first. Of course this is an

additional cost. Then the ceramic coatings cover the inside and outside. I have them on mine and they are great. My cost through Cory was very reasonable and equal to the Mondello price off the shelf without the coatings. Thanks Chuck in Lompoc, CA 78 Eleganza PS I do not work for Mondello or HPC for High Performance Coatings

>

Tom & Marg Warner  
Vernon Center NY  
1976 palmbeach

Date: Fri, 11 Dec 1998 09:01:28 -0800  
From: Chuck Will <willa@impulse.net>  
Subject: GMC: Ceramic Coating

One More Time for all of you that want the superior heat extractor for your GMC Engine Compartment, a little better milage and a whole lot of power. HPC on the www. also the 800 number is 456-4721. Talk to Cory Ure. To my knowledge (which is somewhat limited) there are only two places in the USA (due to EPA0 environmental Protection that have licensed this process. Both are owned by one company HPC, High Performace Coatings. The one in Oklahoma can do the insides and the outsides and the one in Utah can only do the outsides. ONE MORE TIME.

You can purchase the Thornly Headers from them with the coatings more reasonable than purchasing them from Thornly and have to have their coating removed. Thornly puts on a coating that looks like chrome and is pretty to look at. But cost a bit to have removed. It is not a Jet Hot Coating it is a High Performance Coating. There is a difference. Sort of like our GMC and the rest of the coaches running around on our highways. Give Cory a call he will answer all your questions. ONE MORE TIME. My headers from Cory were just about the same cost with shipping as they were from Mondellos but without the Ceramic Coating.

Check it out. Chuck

Date: Fri, 11 Dec 1998 13:44:56 -0500  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>  
Subject: RE: GMC: Ceramic Coating

Chuck:

I have to question your statement that HPC SLC plant can't do the inside. I toured the place two years ago this month and they were doing the inside and outside both.

Did something change????

Paul Bartz

From: Chuck Will [mailto:willa@impulse.net]  
Sent: Friday, December 11, 1998 12:01 PM  
To: davegreenberg1@juno.com; gmcmotorhome@mailinglists.org  
Subject: GMC: Ceramic Coating

The one in Oklahoma can do the insides and the outsides and the one in Utah can only do the outsides.

Date: Fri, 11 Dec 1998 19:39:09 -0500 (EST)  
From: "Thomas G. Warner" <warner@borg.com>  
Subject: Re: GMC: Ceramic Coating of headers etc

Someone gave me the name of another company, Swain Technology that does ceramic coatings, not only for headers but also intake manifolds, blocks, valves, final drives etc. In addition they do very low friction coatings for gears and other parts. Look at their site before making a decision. It is <http://swaintech.com/sindex.html>. I have an inquiry in to them now to do my headers. About \$225 a pair. How does that compare with HPC?

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Date: Thu, 10 Dec 1998 17:17:53 -0500  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>  
Subject: RE: GMC: Ceramic coating for thorley headers

To further lower your price, get Thorley to pull a set of headers prior to them being sent to their coater who I'm told applies a cheap nickel coating. This way the ceramic coater shouldn't charge you for having to remove the nickel coating.

I had High Performance Coating do mine on that basis. In fact, HPC got me a better price on the headers shipped directly to them from Thorley than I was able to arrange and the fact that I didn't have to ship them to HPC, saved some money also.

Paul Bartz

From: Donald W. Miller [mailto:millerdw@vaix2.net]  
Sent: Thursday, December 10, 1998 5:08 PM  
Subject: Re: GMC: Ceramic coating for thorley headers

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Shenandoah Valley of Virginia

Date: Thu, 10 Dec 1998 16:13:33 -0800  
From: Chuck Will <willa@impulse.net>  
Subject: GMC: Ceramic Coatings For Thornley Headers

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Date: Thu, 7 Jan 1999 11:07:46 -0500 (EST)  
From: "Thomas G. Warner" <warner@borg.com>  
Subject: GMC: Coatings for exhaust headers

Just got off the phone with Dan Swain CEO of Swain Technology Inc and talked to him about having my Thorley headers coated with his proprietary white lightning coating. The price is approximately \$225.

I looked at the other industry coatings, Jethot, HPC etc and thought after much reading that they were inferior to the Swain process for drastically cutting down exhaust header heat inside the engine compartment. Dan confirmed this. His process cuts down over 60% of the heat we are now experiencing. REally hope it works.

I have suggested to him that he consider a discount to other members of the net and he will be getting back to me shortly. Here is some of the details of the process.

<http://swaintech.com/sindex.html>

Mention coatings to racers, and responses are likely to be mixed. Some believe the technology is just for well financed Winston Cup and Grand National teams. Others compare coatings to snake oil, and still others think they can solve every racer's performance and reliability problems. Here's the truth of the matter. Coatings have come of age. They've evolved through five generations, and a sixth is almost upon us. Coatings now offer improved durability at every level, from Saturday night racers to the Daytona 500. In the 1970's, while working for a company that made ceramic industrial coatings, I applied my ceramic engineering background to developing a coating for piston domes. My three brothers and I also owned a NASCAR modified that we ran at local tracks. Our ceramic coating was plasma-sprayed

onto piston domes .015" thick. We tested it extensively in our own race car before offering to sell it to anyone. Not surprisingly, weekend racers were reluctant to invest in our unproved product. But Winston Cup engine builders began asking us to coat their pistons. One of the first to use our new coatings was the Junior Johnson team, with Harold Elliott as engine builder. Elliott must have liked what he saw because he is now in the coating business himself. The second generation of coatings appeared in the early '80's. While some were professionally formulated and applied by either plasma spray or flame spray, others were nothing more than self-applied high temperature paint. Some of this stuff didn't work well at all and hurt the whole industry. Despite this black eye, the major companies continued their research, and technology progressed. As the fly-by-nights and garage operators faded away, the third generation of coatings emerged with three major players--Swain Tech Coatings, High Performance Coatings (HPC) and Polymer Dynamics, also known as Poly Dyn. This generation of coatings was engineered to provide added durability and increased horsepower. As each company went its own way, differences evolved. Improved formulations could be applied just .002" thick, eliminating the clearance problems created by the earlier, thicker coatings. Bonding was also improved, so there was no chipping, cracking or crazing. The fourth generation began with header coatings. HPC and Jet Hot developed inexpensive "wet" processes aimed at street rods and show cars. Improved appearance was the primary goal; enhanced performance was secondary. We offered a header coating in which form--specifically thermal insulation --followed function. Our three-layer header coating may not have looked as nice as the others, but it held the heat in. Then, as header coatings became a specialty all their own, ceramic and fiberglass header wraps began competing with them. While the three leading companies continued to improve the technology and variety of high tech coatings, a fifth generation of coatings appeared, characterized by a new crop of do-it-yourself coatings that showed up in the early '90's. This has caused some concern among major coating companies because some of the new companies claim that their products are professional quality. I don't think they are telling you the straight story. As coatings have matured, so have racers' reasons for using them. The emphasis has changed from performance to durability. Maintenance-cost savings have prompted some sanctioning bodies, that had prohibited coatings, to change their rules to allow them. Coatings are currently used in 9:1 motors, street stocks, go-karts and other economy divisions.

Today, there are coatings to protect every part or component that is subject to heat, wear, corrosion or friction. While pistons, combustion chambers and headers remain the most popular parts to coat, an increasing number of engine builders are having engine bearings and valve springs coated. Brake coatings are increasingly popular on heavy cars that need a lot of stopping power. Transmission and ring-and-pinion gears now get coated as well. The coatings evolution is now approaching the sixth generation. Products currently under development include diamond coatings for wear and lubricity, self-lubricating coatings, laser-applied surface coatings and catalyzed coatings. Catalyzed coatings, which have precious metals in sus-trol combustion rates, could be the next generation of piston coating. Many weekend racers now look upon coatings as an investment rather than an expense. JBR Racing of Rochester, New York, runs both a Grand American IMCA modified and a super stock. Says Jon Burroughs, the team captain and a ten-year veteran of both dirt and asphalt tracks, "Coatings are the affordable thing to do, and we're a small budget team. We've coated their pistons, valve springs, intake manifold, rocker arms and balls, bearing races and their exhaust systems. The stock manifold on the Grand American car is also coated. This team and others

report good reliability, which they attribute to coatings. "Last season," Burroughs relates, "the oil pump pickup broke in the Grand American car. We were in the championship race at Apple Valley [NY] Raceway. Oil pressure dropped and fluctuated between 0 and 60 PSI, depending on whether we were in a straightaway or turn. We just kept running and took the championship. When we tore down the engine, the bearings, pistons and cylinder walls had no damage, so we just put the engine back together and we're running it again this season. We do not recommend running your race engine on limited oil pressure, no matter whose coatings or additives you use. We can sometimes get you through an otherwise impossible night, but running with fluctuating oil pressure or other serious problems should not become a way of life.

I can tell you with confidence, however, that coatings can save parts and entire motors. All of us in the aftermarket business hear on Monday mornings when our stuff works, and we really hear when somebody thinks it fails. We've been around for a long time, and we just couldn't keep doing this if those Monday morning calls were mostly angry ones. Don't get the idea you need to rely on the phone to reach us. UPS and FedEx have shrunk the world, and coating companies regularly service teams far from their home base. In fact, we've been told that our Winston Cup work has helped several teams save engines after terrible punishment. We know the other coating companies have some similar stories to tell, too. When it comes to the high dollar teams, well, they could probably afford to run without coatings. But the added reliability makes coated parts an important element in their plans. Same thing with teams that operate on a limited budget. It would be nice if you could avoid it, but to get the job done you've just got to pay the extra money for professional application. Some do-it-yourself coatings are advertised as performing the same as professionally applied coatings, but it is technically impossible for a coating that is painted on and cured in your kitchen oven to provide the same quality and performance as those formulated and applied by trained professionals using sophisticated equipment. The big three coating companies all agree that it takes more than a spray can or air brush and kitchen stove. Professionally applied coatings don't cost as much as you might think. In fact, coated parts represent a modest insurance investment. Our company has never raised its price for piston coatings. This means that piston prices have been the same for sixteen years. We haven't even had to adjust for inflation because volume has increased dramatically. As a result, coated pistons actually cost less today than when we first opened in 1981. Each company publishes a price list. Terms and shipment policies vary by company as well. When shopping for coatings, as with other racing investments, it's smart to not shop on price alone. Coatings are not commodity items. Each company's formulation and application method is different, so be sure the coating will perform as you want it to. Check out the company's reputation in the marketplace. In short, shop for value, not just price.

Swain Technology, Inc. 35 Main Street, Scottsville, New York 14546 Phone - (716) 889-2786 Fax - (716) 889-5218

Tom & Marg Warner  
Vernon Center NY  
1976 palmbeach  
-----

Date: Thu, 7 Jan 1999 11:21:47 -0500  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>

Subject: RE: GMC: Coatings for exhaust headers

Thomas:

You mention that Swain's coating " cuts down over 60% of the heat..."

What are the figures for heat reduction for the other two coater's you mention????

What other qualities do you see Swain's coating have as being superior vs. the other two coater's???

Paul Bartz

-----  
Date: Thu, 7 Jan 1999 13:26:39 -0500 (EST)  
From: "Thomas G. Warner" <warner@borg.com>  
Subject: RE: GMC: Coatings for exhaust headers

There are all kinds of claims. The proof is as they say in the pudding. Note that the performance guys seem to be buying Swain coatings and the show car and street rod crowd seem to be buying Jethot.

Jethot is made of a mixture of ceramic and metal and is sprayed on wet. HPC the same. Swain is actually 3 layers of ceramic baked on. Look at their home page and read the technical details.

If the Swain coating works as they say it does than it would seem to be the coating of choice for GMCs.

Tom & Marg Warner  
Vernon Center NY  
1976 palmbeach

-----  
Date: Thu, 7 Jan 1999 13:56:08 EST  
From: Gcbr@aol.com  
Subject: Re: GMC: Coatings for exhaust headers

Tom

Thank you very much for taking the time to fill us in on coatings. I would now bet that we on the net know more than 99% of the population. Tom again thanks for letting me learn.

Take Care  
Arch 76 GB IL

Date: Thu, 7 Jan 1999 15:18:43 -0500  
From: "Bartz, Paul" <s9d3452@mail.drms.dla.mil>  
Subject: RE: GMC: Coatings for exhaust headers

Thomas:

You claim that "... the performance guys seem to buying Swain coatings and the show car and

street crowd seem to be buying Jet-Hot".

Not the picture from what I see below, in a previous e-mail message. Looks to me like there is a probably a sharing of the wealth, and I haven't seen Jet-Hot's "propaganda/claims yet. So how does one justify pitching one coater over the other at this point based on product and application?

By the way, I'd still like to learn your numbers for heat reduction for the other two coater's you mentioned compared to Swain's claim????

Paul Bartz

From: Chuck Will [mailto:willa@impulse.net]  
Sent: Tuesday, December 15, 1998 1:14 PM  
To: gmcmotorhome@mailinglists.org

Subject: GMC: [Fwd: Jet Hot vs. HPC]

Cory at HPC so here is his response. Thanks Chuck

Cory Ure wrote:

Chuck:

Not a problem. I get asked this very often. Jet-Hot is the same type coating as HPC. HPC's owner was an engineer at an aerospace company that applied these coatings on parts of jet engines. In 1981 he saw an application for these coatings in motorsports (his first love, he was a drag racer prior to entering the Air Force and flying F-105's in Vietnam) an a way to get out of the government end of things and be his own boss.

In 1982 HPC was opened in Oklahoma City. Since then we have opened facilities in CT, UT, AZ, two in Australia and one in New Zealand.

Jet-Hot's owner left the same aerospace firm in 1991 and opened MCCI/Jet-Hot. Since then they have opened facilities in PA, MS and AZ and Australia. Is there a pattern here?

Like I said, the ceramic-metallic coatings are similar. We manufacture our own coatings in our Utah facility. So the formula can be different.

Independent testing has shown that on the average our coating runs 25% thicker than theirs and has longer corrosion protection. The thermal properties are the same. Now our HiPerCoat Extreme(tm) that you and I spoke of is 5 times the insulation but very expensive. Jet-Hot has nothing like this. Your friend has been reading too many of their ads (That's why I am with HPC. I am a marketing guy trying to turn that around. Jet-Hot has done very good in "buying the market" in the last six years).



I think our winning record says it all:

11 Indy 500 winners  
14 Daytona 500 winners  
6 NHRA Pro-Stock World Champions  
8 NHRA Top Fuel World Champions  
9 NHRA Pro Stock Motorcycle World Champions  
First Top Fuel 4 second quarter mile  
First 6 second Pro Stock quarter mile  
Fastest Small Block Chevy on Earth  
Fastest Small Block Ford on Earth  
Fastest Roadster on Earth

Lest talk customers:

Eddie Hill (Top Fuel Dragster and Boat racer, First in the fours, fastest man on land and water for a long time)

Gary Scelzi (1997 & 1998 Top Fuel World Champion)

"Big Daddy" Don Garlits (yeah I know, he now endorses Jet-Hot for a salary, but when he was racing he only used HPC, and I have a cease and desists letter he wrote to Jet-Hot three years ago about them using his name in advertising falsely).

The late John Meyers (4 time Pro Stock Motorcycle World Champion and most winning driver in NHRA history).

Matt Hines (1997 & 1998 Pro Stock Motorcycle Champion and current mph and E.T. record holder)

Angelle Seeling (1998 Pro Stock Motorcycle runner-up) Warren Johnson, the "Professor of Pro Stock" (5 time NHRA Pro Stock World Champion and current E.T. and MPH record holder and first 6 second Pro Stock)

Kurt Johnson

Mark Pawuk

Bob Spina (World's fastest Harley)

Bobby Rahal

Sterling Marlin

Dale Earnhardt

Mark Martin

I could go on and on. Jet-Hot....John Force. That's really the only big name, and they pay him. Most of these people pay us or endorse us only for product sponsorship, when they could get paid by the competition. Maybe I'm being a bit hard on them here, but you can see why.

I hope this helps. Email with any other questions you have.

Best regards,

Cory

At 09:10 AM 12/12/98 -0800, you wrote:

Cory I am getting more and more confused. One of the GMC'ers disagrees with me about your coating and heat reduction. In one of his email's he indicates that the "Jet Hot" coating is more desirable for the GMC than your HPC. Is this true? If it is true why? I need more information

to assist me in helping myself and him to understand heat dissipation and performance for these old motor homes. Granted I am not racing this coach I am just using it as designed but trying to improve performance where it is required and needed. I would copy his email but do not know how to forward it to you. Unless I send the entire journal and then you pick his out and then throw the rest away. If that is ok I will send the entire Friday Page.

Just did not want to do that without you authorizing it.; It is really not that long but I hesitate in doing so without you knowing what is going on. I am very happy with the coating and the headers. I took them up an 8% grade at 55 mph on cruise and did not loose one MPH, the headers did start to get red. After coming home though they cooled rather rapidly and the heat exchange was phenomenal.

I could touch the headers after about 5 minutes. Incidentally the heat in the engine compartment is very cool compared to without them. I had the engine cover off so Tom could adjust the carburetor. I just hate to have somebody tell me something that I cannot answer even if I am wrong, Hope you understand. Thanks Chuck

From: Thomas G. Warner [mailto:warner@borg.com]  
Sent: Thursday, January 07, 1999 1:27 PM  
Subject: RE: GMC: Coatings for exhaust headers

There are all kinds of claims. The proof is as they say in the pudding. Note that the performance guys seem to be buying Swain coatings and the show car and street rod crowd seem to be buying Jethot.

Jethot is made of a mixture of ceramic and metal and is sprayed on wet. HPC the same. Swain is actually 3 layers of ceramic baked on. Look at their home page and read the technical details.

If the Swain coating works as they say it does than it would seem to be the coating of choice for GMCs.

Date: Fri, 8 Jan 1999 21:58:46 -0500 (EST)  
From: "Thomas G. Warner" <warner@borg.com>  
Subject: RE: GMC: Fact or fiction you decide in Coatings for exhaust headers

>Date: Fri, 08 Jan 1999 19:39:30  
>From: "Thomas G. Warner" <warner@borg.com>  
>Subject: RE: GMC: Fact or fiction you decide in Coatings for exhaust=  
headers

>

>Lets look at the facts paul. I stand by my previous information, there appears to be no comparison between Jethot, HPC, and Swain Tech when it comes to keeping heat transfer into the engine compartment to a minimum. Isn't that our problem hot engine compartments? HPC says that they are "more concerned about improving the life of your exhaust components", while jethot says "will lower under-hood temperatures by 30=B0F or more", note that is 30degrees not percent. Swain tech says "It reduces radiant heat by more than 50%. (It is NOT Hi-Temp paint like other products.)"

>  
>I am not interested in how the headers look (who is going to see them except road kill) and me when I am under the hood. HPC and JETHOT are virtually the same technology and almost 20 years old at that. Jethot and HPC are principally trying to stop corrosion and heat fatigue and thermal transfer is only a byproduct, and appears to be minor from their web sites. That is the reason that so many street rodders use them...looks and last a long time.

>  
>Go to the various web sites that I have sited and compare their claims. I am sold on the process and want to see the factory. How about coating our intake manifolds, pistons and final drive gears(low friction materials)also?  
>HPC:<http://www.hpcoatings.com/hpcauto.html>

>  
>HPC has been providing its services to more professional racing teams world wide than all other coating companies combined! We have proven our worth at Daytona, Indy and Lemans. Performance gains are in the 1-3% range, however these gains are proportional to the engine output. For example a 1200 horsepower Pro Stock engine will see a 10-13 horsepower gain where as a street engine will only see 1-5 horsepower. Underhood temperatures will drop from 20-35% depending on the vehicle and airflow surrounding the engine. We are more concerned with improving the life of your exhaust components. As you can see HPC offers a multitude of coatings. Unlike other companies that offer only one or two coatings, HPC offers over 40!!!

>  
>BENEFITS OF HPC EXHAUST SYSTEM COATINGS:

>Superior corrosion protection (self-sacrificial quality will not allow corrosion to develop even when damaged).  
>Lifetime guarantee against subsurface rust and corrosion.  
>Performance gains (increases gas velocity, improves laminar air flow, and reduces ambient underhood temperature).  
>Rapid cool-down.  
>Weldability.  
>Color availability.  
>Will not blue or stain.  
>Elimination of thermal fatigue/oxidation.  
>Excellent abrasion resistance.  
>Protection at temperatures of -375 degrees to +1,300 degrees Fahrenheit.  
>Can be applied to both new and used components.

>JETHOT: <http://206.243.32.11/jethot/pg3.html>

>  
>Famous for its double coatings inside and out, JET-HOT won't discolor, crack, chip, peel, fade or burn off up to 1300=B0F making it ideal for parts that see a lot of abuse. The latest addition to our line of coatings, JET HOT 2000TM, even protects metals at temperatures exceeding 2000=B0F. In accelerated salt-spray tests, JET-HOT outlasts chrome by a factor of 14 to 1 and puts other ceramics on the market to shame. In Fact, new exhaust components coated inside and out receive a lifetime warranty against rust-through. Of course the special process that assures complete coating on the inside of the part goes a long way toward making it last. And if the parts you have are used, JET-HOT even goes the extra mile to strip any old paint or rust off completely down to bare metal at no extra charge! The hottest in High-Temp Coatings! In addition to providing great looks and lasting durability, JET-HOT also helps you get more performance from your vehicle! The insulating quality of the ceramics is the key. When parts are coated inside and out, JET-HOTwill lower under-hood temperatures by 30=B0F= or

more. The coating does this by holding the exhaust heat inside and will actually increase the flow enough to add three to seven horsepower to an average motor.

>

>SWAIN TECHNOLOGIES: <http://swaintech.com/header.html>

>

>Swain Tech Header Coating is different than All the other header coatings. It is applied as SOLID Ceramic Layers, not hi-temp paint. It is a true .015 thick Thermal Barrier.

> Other header coatings are .002 thick and meant for appearance and corrosion resistance. Swain Coating is Functional not Cosmetic.

>

>White Lightning Coating

>Swain Tech Thermal Barrier Coating, TBC-EX -- TBC-EX is a 3-layer .015-.020" thick permanent coating. The coating is pearl white in color and extremely durable. It reduces radiant heat by more than 50%. (It is NOT Hi-Temp paint like other products.)

Date: Fri, 08 Jan 1999 23:53:20 -0500

From: Zachary Zehnacker <zakz@erols.com>

Subject: RE: GMC: Fact or fiction you decide in Coatings for exhaust headers

Tom,

How is the Swain coating applied? Is it sprayed on or is it a powder coat type thing where an electrical charge is used? An electric charge system or dipping system would definitely be much better than the spraying used by Jet Hot and HPC. There are some spots spraying cannot reach that would be coated with those other systems.

Calling the other products "high temp paints" is a little strong I think. Find me a paint that can stand up like any of those coatings. They are all ceramic coatings. Swain's MIGHT be better than the others, but Jet Hot is much better than any paint we have ever used. I'm pretty sure the Jet Hot may be thicker than .002". A friend sent out a set of headers and couldn't get his header bolts through the holes when they came back because the coating had made them that much smaller. I don't think header bolt hole tolerance is anywhere close to .004". If the Swain coating is that much thicker, you may want to enlarge your bolt holes a little before having them coated so they are back to the right size after the coating is applied. You don't want to have to drill out the holes after they are nicely coated like our friend had to. Swain should be able to tell you if this would be necessary or not and how much to enlarge the holes.

For what it is worth, I can tell you that Jet Hot (probably because of their mega-advertising/contingency stickers) is by far the most popular header coating among sportsman drag racers. I don't personally know anyone that has used anything but Jet Hot. We didn't worry about radiant heat on our race cars at all. We just wanted to find something that didn't need to be reapplied every year or two, would look good, and would keep the pipes from rusting away.

Zak

PS - I haven't seen anything but claims about the performance of any of the coatings. Do any of the companies have any facts/studies to back up their

claims? Since underhood temp is affected by a lot more than just the headers, it seems like any claim would be pretty difficult to reproduce/prove. It may just be me, but I am always suspicious of companies that slam other companies' products. If the statements are made in response to specific questions, that may be ok. If they answer the phone and say xxxx brand is terrible and our product is great, then I am forced to wonder. Does anyone that has talked to the 3 companies have any insight on this aspect of the companies?

Date: Sat, 9 Jan 1999 10:14:41 -0500 (EST)  
From: "Thomas G. Warner" <warner@borg.com>  
Subject: RE: GMC: Fact or fiction you decide in Coatings for exhaust headers

My understanding is that the Swain coating is dipped so that all parts are covered. The other coatings are indeed paints and they are applied with a paint gun. I have Jethots video that they sent me and watched the process. The others are excellent for their intended purpose, reduction of corrosion and as you noted that is what you are looking for, but are a metallic ceramic coating. Engines that run on methanol or alcohol can be very corrosive and hence why the majority of the drag racers were using them. They are looking for longevity of the headers which jethot and HPC are excellent at.

Swain is very matter of fact about its coatings and merely points out the differences between its coatings and the others. On his web site he also notes that they cooperate closely with the other companies.

As a racer you probably can see the difference immediately if you have visited their site. They not only coat the exhaust headers, but also do pistons, valves, heads, blocks, wrist pins, intake manifolds, engine blocks, brake pads, calipers, in fact anything on the car that has heat problems. They in fact have two different types of ceramic coatings, one that insulates and one that increases the heat transfer of the part. The main difference between this company and the rest seems to be the large variety of coatings that it produces.

Never thought about the bolt holes and will find out. Good point

At 11:53 PM 1/8/99 -0500, you wrote:

>Tom,

>

>How is the Swain coating applied? Is it sprayed on or is it a powder coat  
>type thing where an electrical charge is used? An electric charge system  
>or dipping system would definitely be much better than the spraying used by  
>Jet Hot and HPC. There are some spots spraying cannot reach that would be  
>coated with those other systems.

>

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>Find me a paint that can stand up like any of those coatings. They are all  
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>  
>Zak  
>  
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>phone and say xxxx brand is terrible and our product is great, then I am  
>forced to wonder. Does anyone that has talked to the 3 companies have any  
>insight on this aspect of the companies?

Tom & Marg Warner  
Vernon Center NY  
1976 palmbeach

Date: Sat, 09 Jan 1999 10:51:47 -0500  
From: Zachary Zehnacker <zakz@erols.com>  
Subject: RE: GMC: Fact or fiction you decide in Coatings for exhaust headers

Tom,  
If the Swain coating is dipped, then it should offer much better overall  
corrosion protection as well. You might want to find out for sure if they  
are dipped because that could be an important difference separating them from  
the others.

Have they said if their product will reduce corrosion or not? I would assume  
that any coating should stop corrosion, but they seem to be downplaying  
corrosion. Our race car headers have no corrosion at all where they are  
coated but the spots the spray could not get to have started to rust. We  
only run leaded gasoline in our race cars (112 octane).

IMHO corrosion resistance is just as/more important to the GMC than heat  
reduction. The headers and free flow mufflers should already cool down the  
engine compartment some I would think. No one wants a set of headers that  
isn't going to last more than a couple of years. Remember that these  
coatings are applied without the protective nickel coating that comes  
standard on the headers. That means that the coating is providing all of the  
corrosion resistance. Headers will rust out very quickly if not protected  
somehow.

I assume the Swain product doesn't look too bad either. Is it just that it is a flat black or some other colored coating instead of the silver shiny coating like the others offer?

If it is dipped and offers good corrosion resistance, then the Swain coating really sounds like a good idea. How is the cost when compared to the others?

Zak

PS - Just because a product is sprayed does not make it paint in my book. Plasti-Dip rubberized coating comes in a dip version and a spray can version. Is the one that comes in the spray can a paint and the one that comes in the dip can a coating? They both seem like the same product to me.

Date: Sat, 9 Jan 1999 11:41:47 -0500 (EST)  
From: "Thomas G. Warner" <warner@borg.com>  
Subject: RE: GMC: Fact or fiction you decide in Coatings for exhaust headers

Zak their header coating is called white lightning and is a beautiful pearlescent color, but not applied for its cosmetic qualities. In the case of the Thorley headers or others I have seen the welds are not perfect. All of them that I have seen on the GMCs that were not coated have started to rust.

You might think about looking at their other products for pistons, brakes etc

Date: Sat, 09 Jan 1999 08:54:15 -0800  
From: Chuck Will <willa@impulse.net>  
Subject: GMC: HPC coating/Real World Test

Here is Cory's email at HPC, might be worth your time to talk to him as he is a very information filled person concerning the varioius coatings and the heat reduction from the engin compartment. I have only traveled about 500 miles with the new engine, and all the other things that were applied during building by Tom Green and Mondello. The Thornly Headers with the HPC coatings were taken out and with the engine compartment cover off, Tom adjusted all the carburation going up and down the Central Coast terrain. The headers did glow at a 5% grade, did not loose any speed under cruise and pulled the grade fine. The headers with the coatings cooled to hand touch within five minutes of turning the engine off. Chuck, 78 Eleganza, Lompoc,  
-----

Date: Sat, 9 Jan 1999 11:59:22 EST  
From: Adohen@aol.com  
Subject: Re: GMC: Fact or fiction you decide in Coatings for exhaust headers

Doesn't Thorley void the warranty on the heddere if they are ceramic coated other than by Thorley?

2 cents

Scott Adohen@aol.com  
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Date: Sat, 09 Jan 1999 12:16:32 -0500  
From: Zachary Zehnacker <zakz@erols.com>  
Subject: RE: GMC: Fact or fiction you decide in Coatings for exhaust headers

Tom,

We do run coated bearings now in the race motors. After having the distributor pop out (ie no oil pressure), the coated main bearings were perfect while the non-coated rod bearings were hurt. They do seem to work well. The main reason to run coated pistons (usually only the top is coated) is to avoid hot spots so you can run more timing/compression without detonation. A current trick for aluminum heads seems to be to coat the chambers in the heads so that the heads can be a little more forgiving if detonation does occur. You gain some of the advantages of both types of heads that way. Our race motors are far from being on the edge, so we are not really worried about performance enhancements like the coated heads/pistons/etc. Many of the coatings of this type are seem to be meant for motors that come apart often. Ours only come apart every two years. We would be a little afraid of a piece chipping off and causing damage. I don't know if that concern is valid or not, but since we don't have a problem now, we don't see a need to change. The coated bearings, however, improve the durability, and we do like that.

We wanted to get some stuff coated for the GMC engine during the rebuild, but the Olds stuff is hard enough to find. We would have had to have them specially coated and the turnaround would have taken too long/been too expensive. The Chevy stuff can be obtained already coated right from the bearing companies. That way, the coating thickness is also properly accounted for. Had we had bearings specially coated, the thickness would have been much more difficult to account for.

For a road course car or a tight circle track, the brake coatings might be good idea. Our race car brakes only get used about once every 1/2 hour or so, so heat is not really a problem for them. We have never experienced brake fade in the GMC even when the trailer brakes weren't really working that well. I really think that many of the problems with the rear drums are due to failing parts rather than brake fade/drums vs. disks/etc. We changed the front disks to the bigger calipers with the performance friction pads. We changed the rear shoes to the asbestos ones. We changed the front bogies to the larger wheel cylinders. None of these improvements were really very noticeable. The biggest improvement by far in GMC braking we have ever found is changing our vacuum line for the brake booster. This made a HUGE difference. This problem could also be perceived as brake fade by some which IMO could lead to some of the stories about brake fade. Our brakes would work fine the first time, but then would not work so well after that if not given a decent amount of time. It turned out that the vacuum line had collapsed enough internally that the vacuum took a long time to build up in the booster. After driving for a while, the vacuum level would be fine and the booster would work well. Once the vacuum in the booster was depleted on the first pedal push, it wouldn't work anymore until given enough time to recuperate. This made stop and go driving difficult, but it was not because of brake fade. Now that the line has been replaced, everything is fine.  
Zak

Date: Sat, 9 Jan 1999 15:53:57 -0500 (EST)  
From: "Thomas G. Warner" <warner@borg.com>



Subject: Re: GMC: HPC coating/Real World Test

NO doubt they were cool to the touch after a few minutes and I am surely not voicing anything negative about either the Jethot or HPC coatings. They are both of fine quality, but if you read the things that I posted you will see that their primary purpose is to reduce corrosion (and that is in their sales literature on their web site), not reduce heat transfer to the engine compartment. My aim is to reduce the engine compartment heat as much as possible. corrosion is a secondary benefit and the swain coating does that also. If you want nice looking corrosion resistant headers buy the jethot of HPC applications.

If you want the maximum reduction of heat into the engine compartment buy the Swain coatings.

Just my opinion after reading all of the propoganda for them all.

From: "Thomas G. Warner" <warner@borg.com>

Subject: RE: GMC: Fact or fiction you decide in Coatings for exhaust headers

Zak according to Swains technical literature and my talk to Don Swain last week they have the ceramic technology perfected to the point where it no longer chips off internal engine parts. i understand that they will also do the bearings etc to your specs, ie; tell them the diameter you want and they will make the necessary adjustments in the bearings and coatings to allow for it. Thing that interested me is that they do a complete engine, pistons, valves etc for less than \$400.

Date: Sun, 10 Jan 1999 11:22:02 +0000

From: Cory Ure <hpcsales@hpcoatings.com>

Subject: Re: GMC: GMC Motorhome Digest V2 #190

[ADMIN note - the following is Cory Ure's response to Chuck Will. It was HTML encoded and in the conversion to plain text, some special characters were lost. Patrick]

To my knowledge Thorley does not void the warranty on the headers, but I know that if there is a warranty problem with the header (e.i. cracked weld) Thorley will not cover the price spent on the coating. The Thorley's are good allies of HPC, and Doug is a personal friend, so I have to feel the above is accurate. Thorley headers come from the manufacturer with an "Industrial Coating" which is just a nickel plating. This is better than paint for corrosion protection but offers little in the way of thermal benefits or protection.

The coating actually helps extend the life of the header, not just against rust and corrosion, but against thermal fatigue and oxidation. This is where the header will crack or develop oxide scale on the inside. Most header failures are due to cyclic heat, not rust. The process of heating to 1000degF and cooling off and heating again, takes it's toll on steel.

Please visit our web site at <http://www.hpcoatings.com/> for more information, follow the links for HiPerCoat and HiPerCoat Extreme on the <http://www.hpcoatings.com/hpcauto.htm> link for more information.

Also, feel free to email me at [coryu@hpcoatings.com](mailto:coryu@hpcoatings.com) with any questions you may have.

Best regards,  
Cory Ure  
Director of Marketing  
HPC, Inc.

Date: Tue, 19 Jan 1999 17:28:53 -0500  
From: "The Hamiltons" <[hamilton@king.igs.net](mailto:hamilton@king.igs.net)>  
Subject: GMC: Sheet Metal Heat Shields

Dave,

I have four sheet metal shields protecting various things from the header heat and if they do vibrate, I can't hear them. I put all of them on a year ago at the same time as the headers because of all the talk of heat and damage - so far nothing. The shields work well or the header heat is over stated!

Kathy & Al Hamilton  
76 Eleganza II  
Kingston, Ont