

Final Report
on the findings of
Research Conducted to Identify
The Best Automotive Corrosion / Rust Prevention / Inhibitor System On-The-Market
IN THE WORLD

Just as so many of us have tried in the past, I thought it a good idea to identify the best automotive corrosion/rust prevention/inhibitor system available on the market. After all, if I'm going to gum up the underside of my car with something, it might as well be the very best %something+ available, right? Heck I thought, it's a simple enough question; however, that's where it stopped being simple.

My name is John Mulroy. I've been a member of OJC for a little over a year now, and I'm also a recent addition to OMGC. In asking around some of the other OJC members last year about this subject, I got as many answers as the number of people I asked. Clearly, this fact-finding (anecdotal) approach would be of little use to me. And then, out of the blue, Mike O'Brien (OJC, OMGC) comes out with a rather interesting statement, specifically: "Canadian Tire has the best rust/corrosion inhibitor on the market; however, they also do the worst application". Solely driven by that statement, I started to do some delving into the whole question of rust/corrosion inhibitors. So, I took on this little project in a completely unbiased manner, and approached it with no personal or preconceived opinion whatsoever. I knew nothing about rust/corrosion protection before I started!

My original research article on the subject of rust/corrosion prevention/inhibitors can be found following the observers' comments and feed-back section concerning the application demonstration of the selected system. I offered up my 2004 XJ8 to use as the test subject, and as events turned out, was so very glad I did! The experienced mechanic applying the chemicals actually saved my beauty from a horrible and ignominious death by rust in about 2 years from now. but more on that subject later. The demonstration was conducted at Holliday Auto Centre, owned by Josip Psihista, 4856 Bank St., 613-425-5001. Google map reference:















<https://www.google.ca/maps/place/4856+Bank+St,+Metcalf,+ON+K0A+2P0/@45.3073422,-75.5858641,15z/data=!4m5!3m4!1s0x4cce0a10b828f23d:0xeb08f95e2cd29939!8m2!3d45.3070744!4d-75.5865937?hl=en>

If you have ANY interest in the overall problem, but still find yourself sceptical after reading this final mini-report and the observers' comments, then you MUST read my original research article, which may convince you of the veracity of my claims. The article begins at the bottom of page 5, and provides sufficient research, information and links to even convince someone from Missouri.

I apologize for the length of this document; however, if I'd just said something like %Company X has the best rust-proofing system, and location Y is the best place to have it applied+ then it's just another unsupported opinion.

The practical demonstration of the application procedure was accepted by all who attended the demonstration as being the most exhaustive. rather old world. attention to every facet of required detail. The chemicals were applied by a very experienced mechanic (Doug) who is just as much a perfectionist as the garage owner (Josip) is himself.

Breaking with tradition, I will now give you the bullet points you should know here, rather than waiting to get to a report's usual % conclusions and summary+at its end.

-  The anti-rust / corrosion system is designed and chemically blended by a Canadian company, namely "Corrosion Free", with their headquarters in Brampton. [See much more on this company and the link to their website in the research section below . no, much further below . page 5, remember?]
-  The location I chose, again after researching the general area, was Holliday Auto Centre . see information and coordinates above.
-  Holliday appears on the surface to be just another general (usual) small garage operation, but any similarity ends there. Holliday approaches everything they do with an old-world, long forgotten dedication to quality work and a sense of responsibility to their clients, which is virtually unheard of in this day and age.
-  Holliday maintains this approach and attitude in whatever they are doing for their clients. Josip was telling me that they have one clients who will come all the way from Toronto, and many clients from Kingston, etc., simply because these clients trust Holliday without any reservation. After what I experienced at Holliday, I am now prepared to believe him!
-  Holliday offers the following standard prices for applying the Corrosion Free rust/corrosion prevention system: Cars - \$140., SUVs, etc. - \$160., Trucks, (e.g. F-150) - \$195. After all, size = time = money. These prices are no better or worse than you'd find anywhere else. However, what is different is that Corrosion Free only recommends reapplication every 18 months, rather than the industry %standard+of one year between treatments.
-  **Club members will automatically receive a 20% discount on the regular application prices! And you can stay and watch the whole process, and I mean up close. Any closer, and you'd also wind up being treated.**
-  Unlike any other %rust protection+application on the market, **Corrosion Free is effectively applied throughout the year!** Snow, ice, mud, water, the occasional remnant of road kills, etc., - none of it matters! To quote from my research: I asked the very experienced mechanic (Doug) applying the Corrosion Free system, what would happen if he hoisted a car for treatment and found mud, thick dirt or ice on the underside. He pointed to a hose about 15 feet away, and said %simple . hose it off, and then use a scraper to get rid of any thicker stuff+. I know from both my research, and first-hand observation, that any residual surface water will be chased away by Corrosion Free during its application . it's a chemical thing.
-  Holliday's standard hourly shop rate is \$100.
-  **Club members will automatically receive a 10% discount on the standard hourly shop rate! And you can stay and watch whatever's being done to your car!**
-  **Club members all qualify for the above savings,** as do their immediate families, extended families, friends and neighbours, acquaintances, anyone you've ever known, anyone you meet in a bar or pass on the street! These qualification requirements must never be violated.
-  **Discounts will automatically apply to any and all vehicles that Club members, and others meeting the strict qualification requirements as set out above.** If the vehicle can be delivered to Holliday, through whatever means, it qualifies . it's that simple.
-  I was asked by some of the observers at the demonstration, how those qualified to receive these discounts would go about identifying themselves (either by phone or in person). I suggested using the code phrase %like John+. As that recommendation received far too much laughter and heckling, we settled on the code word **CLUBS**. Please use it when calling to book an appointment with Holliday.
-  Although the idea of negotiating an arrangement was mine, and the above negotiations were entirely conducted by me on behalf of both clubs, I was specifically requested by Trish Adams, the Vice-President of OMGC, to represent their interests; and, tacitly authorized to do so by Mike O'Brien for OJC.
-  One final note: Josip at Holliday was not comfortable in immediately going to a 20% discount on the shop rate. At the end of the first year, the shop rate discount will be

reviewed, and if the volume of business generated by this agreement warrants the change to a 20% discount, then it will happen at that time. Sonja, who oversees all of Holliday's administrative requirements (and who is also Josip's wife), will, at the end of the first year, simply do a computer search for all work performed by them under the heading of CLUBS. Given this, please never forget to use this identifier when having anything done at Holliday.

I invited six qualified observers to the demonstration (I had to keep the numbers down, as Holliday is a small operation). After the demonstration, I sent the following email to those who attended. There were three representatives from each of the Jag and MG clubs. They were: Bob Hiland, Roy Fjarlie, Brian McAteer, David Adams, Barry Phillips and John Wright. All six responded, and their responses are recorded below

Good morning all,

I'm sending this request to all you fine fellows who attended the Corrosion Free demonstration yesterday at Holliday Auto, and am asking you to provide short comments on your impressions from yesterday. Whether good, bad or indifferent, your comments will make up a very important part of the final report, for distribution to both clubs' memberships. I thank you in advance for your taking the time to assist me, and more importantly, assist the memberships of both clubs.

Cheers, John Mulroy, OJC & OMGC

Their Responses:

From: **Bob Hiland**, Vice-President, OJC

I was at the shop long enough to see that they were very thorough in preparation work. Panels were removed from under the car and a problem with rust and a perforation in a hidden frame member was repaired. I doubt that any other undercoating shop would do that.

Bob Hiland

From: **David Adams**, OMGC Member

John,

My personal thanks for organising today.

Look forward to seeing your summary. The chaps from the MG Club enjoyed also. Particularly impressed with the trouble the mechanic took to "undress" the underside of your car, and deal with the resulting issue...

Sorry we were unable to stay for the whole event, but was impressed with the manner in which the mechanic removed undertrays and pretreated some particularly vulnerable areas. Discovering, cleaning and welding one area on a 13 yr old car that otherwise didn't seem to have a spot of rust on it was particularly impressive. Personally haven't experienced that level of attention to detail from Kr__n.

David

From: **John Wright**, OMGC Member

Thanks for organizing the demo John.

As regards your report I really can't add anything to what David has said apart from the fact that I thought it was a very professional operation, good customer service and I have no reason to suppose that they don't always operate in that way. I got the impression that they were happy for customers to watch the process which is good in a situation like yesterday when some unexpected rust was encountered.

John

From: **Barry Phillips**, OMGC Member

Thank you all for allowing me the opportunity to attend the demonstration of Corrosion Free rust preventative procedures. Unfortunately we were unable to stay to the end but it was obvious that the distributor took a great deal of care in preparing the vehicle prior to actually applying the compound.

For the last 28 years I have always had my vehicles treated by alternative rust prevention companies, some good some awful!! Over this period of time it has become obvious that the procedure in preparing the vehicle is a major component in the effectiveness of the product.

Removing the under shield is a must and this must be carried out to ensure that the compound effectively reaches every part. In the past if any corrosion was discovered and the facility were unable to deal with that problem then they would report it to me for me to have fixed and then they would ask me to bring the vehicle back to the shop to have the area re-applied at no cost.

According to the body shop that I use, a great deal of corrosion occurs in areas far removed from the salt and mud that is normally deposited on the underside of vehicles, and this corrosion is caused by condensation in the body panels, think of the inside of door panels, windshield surrounds etc. For this reason it is imperative that access to these areas is vitally important. I assume that this procedure is adopted by Holliday Motors, although we were unable to see if that was the case.

To sum up, I think that the demonstration was effective and that there is no doubt that this product, if applied in the manner that we saw, is a first class barrier to rust.

Barry

From: **Roy Fjarlie**, OGC Treasurer

John:

Thanks for inviting us along to visit the Holiday Car garage. I was impressed by the way they took over your 04 XJ to apply their product professionally. Interesting to see the damage caused by having the engine shroud installed. I was going to buy a shroud as my car (05 VDP) does not have one, but after having seen the corrosion damage caused by having yours in place I will no longer do so. The work impressed my friend and I, and indeed I booked an appointment to have my cars done.

So from my perspective, I learned something and will no doubt benefit from Corrosion Free products. The location is a little out of the way for me, but we'll see how it works out.

Roy

From: **Brian McAteer**, Independent Scientific Observer, Jaguar Enthusiast, and close friend of Roy Fjarlie, OJC Treasurer

Not sure what sort of comments you are looking for, but I'll try

My research on rust started out at Queen's, in the Chem-Eng library, in the early seventies. For years I worked away at the problem, and tried a dizzying variety of solutions which ranged from comical, to useful.

Conclusions to date are:

1. Rust prevention varies from highly effective if applied to new cars, to marginally effective where rust has had years to establish itself.
2. Established rust can be slowed down considerably from spreading further, but it's tricky to stop completely. Rust is auto-catalytic, so once it's established, it tries to catalyze the formation of more rust. That's why we have all seen rust starting out as round brown spots on a fresh piece of steel, and continue to enlarge even when the original external cause is removed. Once a single molecule of rust forms, it catalyses formation of more rust all around itself, and so spreads out from invisible, microscopic nuclei. Removing it completely is very difficult, so the optimum strategy is to prevent it in the first place.
3. Rust prevention is as effective as the people applying it. So, it is best done by someone knowledgeable and conscientious.
4. A small omission by a rust-proofer can seriously compromise your car. Choose'em carefully.
5. Everybody has the best rustproofing chemical in the business. They are probably all pretty good, with small differences in effectiveness.
6. No chemical can discourage rust if it's not applied. It's like lottery tickets - if you don't buy one, you can't win.
7. Dirt and rust are synergistic. Some estimates hold that 50% of rust is started by bacteria. Soil bacteria (*Clostridium tetani* - lockjaw bacteria) actually derive energy by catalysing the rust reaction. Cleanliness is next to shininess.

Favourably impressed by the chaps at Holliday Auto Centre. They are obviously very experienced, and seem to be meticulous. I would avoid rustproofing plans sold by automobile dealerships; or rust-proofers who hire teenagers to do their work.

Brian

The Original Research Article:

Subject: The Best Automotive Corrosion / Rust Prevention / Inhibitor System On The Market

By: John B. Mulroy, OMGC, OJC, November 2017

Just as so many of us have tried in the past, I thought it a good idea to identify the best automotive corrosion/rust prevention/inhibitor system on the market today. After all, if I'm going to gum up the underside of my car with something, it might as well be the very best ~~something~~ available, right? Heck, I thought, it's a simple enough question. However, the *correct* answer well, not so much!

My name is John Mulroy, and I'm a fairly recent addition to the OMGC membership roster. I've also been a member of OJC for a little over a year now. In asking around some of the other OJC members last year about this subject, I got as many answers as the number of people I asked. Clearly, this fact-finding method would be of little use to me. And then, right out of the blue, Mike O'Brien comes out with a rather interesting statement, specifically: "Canadian Tire has the best rust/corrosion inhibitor on the market; however, they also do the worst application". Solely driven by that statement, I started to do a little delving into the whole question of rust/corrosion inhibitors. So, I took this little project on in a completely unbiased manner, and went into this with no personal or preconceived opinion whatsoever. I knew nothing about rust/corrosion protection before I started! Now though, I can bore people to thoughts of suicide about the subject. Just ask my wife!

So, for those of you who might be interested, here are my general findings, all of which are, or can be, substantiated,

1. The system that Canadian Tire uses is not proprietary.
2. The system is actually manufactured by a Canadian company, namely "Corrosion Free", with their headquarters in Brampton. It seems that the chemical treatments developed about 40 years ago (and still used today with little modification), were developed by Canadian chemical engineers specifically for the Canadian winter, to protect against all the salt/calcium we have always had to deal with on our roads. It's called a system, because it's impossible to achieve the results which they do with only one type of spray.
3. While their chemicals do provide significant and quantifiable advantages over other brands promoting rust/corrosion protection/inhibition, it is the proper application of their system which makes all the difference. naturally. The company's major clients are all military, government, NGOs, etc., as well as large commercial users, who must ensure that all of their own maintenance staff be fully trained by the company in the proper application of the system (except at CT, it seems).
4. By far, their biggest client is the US military. NASA, Boeing and the overall aerospace industry (think aluminum alloys and exotic metals), are also, to name but a few, among their larger and most prestigious clients. The Canadian military is also very high on their list of clients.
5. The products are clear; do not drip; do not gum everything up, thus making under-vehicle maintenance and inspection extremely difficult; and, will not damage rubber, synthetics or plastics. they are completely inert to these composites. Four absolute essentials, in order to even be considered for use by the military and aerospace communities. The stuff even protects plastics and rubbers against UV degradation (for those of us who like to drive upside down, I guess), and prevents gas and brake lines and cables from rotting. I'm even told that it can be applied when the underside of the car is wet. it just chases the water and moisture away. You'd also be glad to know that it doesn't smell. The products do not become gummy or hard over time, but continue to creep and penetrate into every joint and crevice, and leaves a protective lubricating film behind. It even prevents reaction between different metals⁽ⁱ⁾. Water spray won't wash it off. not even high pressure car washes.
6. The materials and labour, are no more expensive than any other of the more readily identified commercial rust/corrosion inhibitors, and the manufacturer only recommends reapplication every 18 months as being necessary, rather than the typical 12 months. Therefore, it actually winds up being less expensive than the better known names. Corrosion Free also has a far superior warranty program. While the warrantee doesn't do anything for older cars, it's extremely comprehensive and fair for new cars, as well as cars less than two years old. The product line is also available for purchase directly by the do-it-yourself guys, and comes in standard aerosol cans. Please see their website at www.corrosionfree.com after you've finished this article.

Anyway, after identifying the company in question, my research quickly led me to the following Technical Publication: DRDC - Atlantic - Pub# 2006-055, which turned out to be a joint research effort by Defence Research & Development Canada (DRDC) . Atlantic, and RMCC - Kingston. The publication reports on tests conducted on behalf of the Canadian Army, where all rust/corrosion inhibitors on the market back then were tested and analyzed until tanks and trucks rusted out . just kidding. The Publication's References, which begin on page 26 and go on for several pages, are absolutely astounding . you have to at least read the list. I've actually taken the trouble to read some of the referenced publications (but then, I'm the one who's putting their name on the line here), and they all come out supporting the Corrosion Free system over other, better known brands, after they've done their own in-house laboratory and real-time field trials! Please see: <http://cradpdf.drdc-rddc.gc.ca/PDFS/unc53/p526285.pdf> , but not yet!

After assuring myself that the "Corrosion Free" system was the best choice, from a long list of uninspiring also-rans, my next task was to identify, if possible, a local operation which used the system and applied it correctly. After all, this research would have been nothing more than just a minor academic exercise, and would've stopped dead in its tracks, if I couldn't find a local qualified operation that used the "Corrosion Free" system, and who's staff could be trusted to apply it correctly. I found one.

So I set up an appointment with the owner of this local operation a few weeks ago, to view and assess his operation. The operation's owner talked to me about the proper application of the system, let me get in close to a car up on the hoist which was having the application done to it at the time, just to see first hand how things were done, and afterwards, he put my Jag up on a hoist, simply to use as a procedural example. I have to say that I was extremely impressed with the attention to detail and professionalism shown by the very experienced mechanic (Doug) applying the stuff, and he had no idea why I was there. I asked him what would happen if he hoisted a car for treatment and found mud, thick dirt or ice on the underside. He pointed to a hose about 15 feet away, and said "simple . hose it off, and then use a scraper to get rid of the thick stuff, if I have to." When my car was hoisted and the owner started looking around underneath, I was again impressed with his immediate understanding of the rust/corrosion problems my 13 year old XJ8 had, and the detailed explanations on how to stop any further degradation in its tracks. Discussing the steel sub-frames, which did show a fair degree of surface rust but were still sound, he said that he'd use another product specifically designed for deeper penetration and extreme treatment given their condition, which would last six months before requiring reapplication. The conversation continued, and about two minutes later he went back to the previous topic, saying that he would blend another stabilizing chemical with the extreme treatment for the rusted sub-frames, which would make it last as long as the Corrosion Free treatment (18 months). This man always seems to be thinking of his clients' best interests. And as for all the rust under my car, my excuse is that I just picked up this Jag in September of last year.

I told him about an inherent problem with XJ8s of those years, where the under engine/transmission protective shroud pushes up against the underside of the front sub-frame which is flat. Salty water can be held there (and obviously had been, judging from the amount of surface rust), by the "dam" effect caused by the close contact of the sub-frame and the shroud. Before I was even finished explaining the problem, he had an answer that was so simple and fast, that I felt ridiculous not having thought of it myself!

From there, I asked him why anyone would bother treating the inside of aluminum door panels. He said that it's even more important to treat them than it is with "metal" doors because of the much higher costs associated with repairing aluminum corrosion in body panels.

OK, so far, so good! Now for the bad news that you've all been waiting for! When I pulled up in front of this guy's operation for my appointment, I was absolutely shocked! The place is a tiny little operation. It's a two hoist garage with a small office attached, and with the owner's house in front of the garage. I'm sure you can imagine some of the thoughts going through my head in those first

few seconds. Anyway, I was there, my car was there, and he was there, so I thought, let's get it over with. Well, you've already read about how impressed I was with him, his staff, their knowledge, the operation, the attention to detail, etc., and I'll stand by my every word. In point of fact, I was so impressed with the operation that I immediately booked an appointment to have my Jag treated.

Whereas my original, somewhat narrow, plan was to complete the research and test application on my car, collect any impressions that watching the process would give me, and then share the information with other Ottawa MG and Jag Club members, it has since dawned on me that these findings would be of interest to all local clubs and owners of vintage vehicles. Everyone will be informed - eventually.

On my way home, a thought I had was why the heck would a company like Corrosion Free be doing business with this tiny hole-in-the-wall operation. And then I started putting our conversation together, and it came to me. This man had been one of Corrosion Free's first customers way back 4 decades ago, when they were both just getting established.

During my fact-finding appointment with him, I asked whether he would be prepared to give OJC a club price on undercoating. He enquired as to the number of members, and I told him that there were a little over 100, at which point he offered a 15% discount. I then told him that my intention was to also advise OMGC members immediately, and also make some of the other valley car clubs aware of everything, and that the total number of club members would probably hit between 600 and 700. We were interrupted at that point, and I was never able to return to negotiations. If all turns out well during my car's treatment, it will put me in a more powerful bargaining position for all of us. I've been asked by Trish Adams to represent OMGC's interests during negotiations.

My apologies to all, but I hope you can understand why I must withhold the name/location of the operation in question at this time, but just until final arrangements have been negotiated. At that point, I'll rush to get the word out through an all-members email.

Oh, and before I forget - YES, YOU CAN STAY AND WATCH!!

Whatever the final arrangements turn out to be, rest assured that they will include all vehicles owned by any club member, and not just the European makes (MG, Triumph, AH, Jag, MB, BMW, etc.)! Members will also be able to have their 2018 Lincoln Townbox or 2012 Mazda treated to the same club discount. Details to follow, after negotiations are concluded.

Well, that's all for the time being . this is where I really get to work.

Sincerely,

John B. Mulroy, OJC, OMGC



(i) Galvanic corrosion (also called bimetallic corrosion) is an electrochemical process in which one metal corrodes preferentially when it is in electrical contact with another, in the presence of an electrolyte (e.g. salt water). Metals can react with each other when they are in aqueous solution through redox reactions. (Redox stand for reduction-oxidation.)