

2020 Spring Newsletter

Published by the Indian Four Cylinder Club, for it's members
Volume 55, Number 1

Indian 4 Club

"America's Most Beautiful Motorcycles"

1938 Indian Four



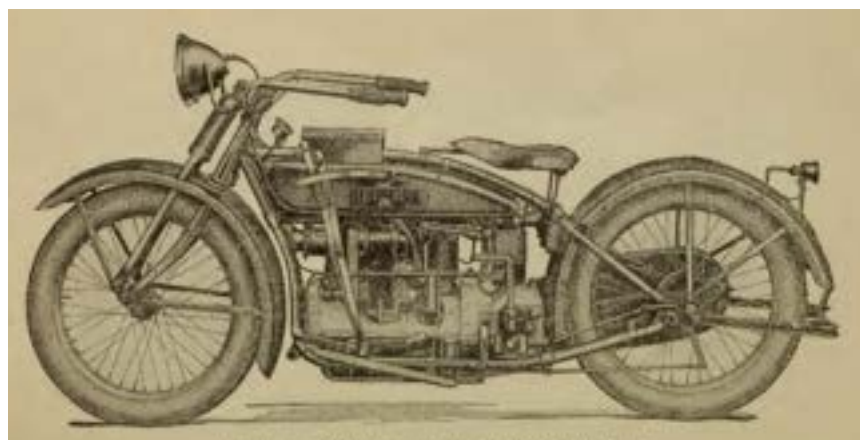
Indian 4 Club

"America's Most Beautiful Motorcycles"

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Front cover: A beautifully restored 1938 Indian Four, owned by Ed Bortner

A Letter from the President



I hope you are all safe and taking good care of yourselves. I figure if I stay in my garage working on my 4 Covid-19 won't get me! (Riding also seems like a good way to avoid it...) August is way too far down the road to speculate, but we are still anticipating holding the Annual Meet. The Board is planning to meet at the Oley AMCA meet, if it is not cancelled. We will do our best to keep everyone apprised.

To that end I encourage everyone to take full advantage of the new website. The 'address' is still the same: www.Indian4Club.org. Beverly has, with the Board's full backing, enlisted some professional help and built the Club an up-to-date professional-grade website.

The site has a public 'landing page' but all of the real goodies are for paid Club members only. When you pay your dues, you get full access. Content is being added literally on a daily basis and there are still features to be added. Everyone for whom we have addresses has been contacted with the 'how to' and other necessary information. If you still haven't checked it out, I give you this warning as a free public service: be prepared to spend a lot of time! And don't forget to thank Beverly...

I would be remiss if I did not here acknowledge the work that was done quietly, behind the scenes, at no cost to the Club for more than 10 years by Jeff Huyck. Jeff and Sue usually ride to our Meet from Grand Rapids on their red, well... not Indian 4's! He has also taken our 'banner' pictures for many years and provided lots of great pictures for the Newsletters and Magazine. The Club's desire to expand the scope of our web presence pretty much coincided with Jeff's decision to retire. Hence the new website. Don't forget to thank Jeff...

That's all for now. I've already missed two deadlines for getting this to Tracy! (Technically, I did not specify by noon today in *which* time zone...) Keep yourselves informed and safe; be careful on the road - there are numskulls out there! We'll be in touch. Hope to see you soon.

APRIL 14 UPDATE:

Add deadlines to the list of things upended by COVID 19! August is a month closer but no less uncertain. The Board is in regular communication, though our planned face-to-face meeting at Oley was yet another casualty... **But we are still moving ahead with the Meet - August 6-9, 2020!** I just spoke with the folks at the Fairgrounds in Tiffin. Although like just about everything else, they are shut down, they will be sending Beverly the contract for the facility. I'll be booking my room shortly and encourage everyone to do likewise, if that's the way you roll.

Think positive! The Board will be watching things closely and will let everyone know in a timely manner if we do have to cancel. We are interested in any ideas anyone has about possible alternatives, should things remain unchanged. With all this fancy technology there ought to be a way to have some kind of 'gathering' in cyberspace, wherever that is!

The new website is up and running and is nothing short of spectacular! I highly recommend it as a way to make this involuntary monasticism more bearable, perhaps even a bit enjoyable! Kudos to everyone involved. Yeah, there were a few 'rollout' hiccups, but hey - anyone you know get everything right on the first try? **Pay your dues!**

Ride if you can, indulge that OCD if you're so afflicted and stay in touch. I say this with a sense of urgency rather than the usual throw-away closing salutation: **Be safe! Take of yourselves!**

Treasurer's Report April 6, 2020

We are still planning to have our Annual Meet, August 6-9, 2020 in Tiffin, Ohio. If anything changes, we will post on the new website, our Facebook page (Indian Four Cylinder Club), will send out a mass email and of course snail mail those who aren't using technology.

Bank Balance as of last report 11/22/2019:	\$3,331.73
Fall Magazine Printing/Mailing:	(\$2,476.93)
WIX Website Fee:	(33.75)
USPS Mailing Publications	(15.15)
2020 Dues Received since 11/22/2019:	<u>\$165.08</u>
BALANCE ENDING 12/31/2019:	\$970.98

JANUARY 1 - April 26, 2020

Paid 2020 Membership (67) 2019 Members not yet paid	\$7,126.60
Postage <i>Includes membership mailing</i>	(176.75)
Office Depot Envelopes 2020 Invoices	(\$49.41)
Website Expense	(\$700.00)
<i>Approved by Board</i>	
Bank Service Charge \$12/mos Jan-Apr	<u>(\$48.00)</u>
Bank Balance 4/26/2020	\$6,152.44

Beverly Corsmeier
Indian 4 Club Treasurer
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Milford, Ohio 45150
513-623-7756 cell



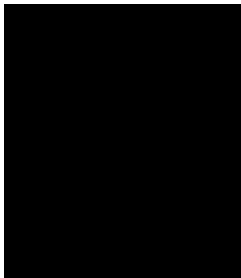
Welcome to the Club's new website!

This is the new database to track your dues, mailing addresses and email addresses. I can't stress enough how important it is for any club member who uses a computer to please create an account and login. THE WEBSITE DOES NOT KNOW YOUR EMAIL ADDRESS until you create an account. See steps below:



This is the front page of the website:

www.Indian4Club.org. If you have NOT paid your dues for 2020 please click on "Pay My Dues" which is just above the headlight.

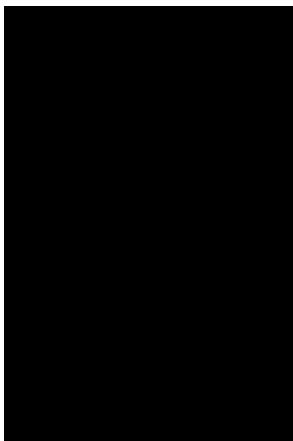


This is the screen that should appear. Please click the **RED "SIGN UP"** on the second line. When you do this the registration page will appear:



This form appears when you select the **RED "SIGN UP"**. This is also where you give permission to be in the club roster, let us know if you are using Facebook so you can be added to the private club page and most importantly captures your mailing information so we can be sure to mail your publications to the correct address.

Next screen that will appear is the payment screen. Select which pertains to you. Price difference is to cover postage of publications. After you select USA or Foreign, you will then go to checkout where you can add your credit card information on a secure platform.



Some of you went straight to "Log On" and entered an email address but couldn't get a password to work. This was because the website had no idea who you were since you had not registered. If you have any problems please call me so that I can walk you through it.

Once you are paid and have full access to the website, please click on the down arrow down on the far right side of the websites front page. This will give you a drop down menu. Go To "My Account" you can add a photo and please complete the address information. This is your dashboard which will allow you to see your Indian 4 Club Account going forward.

I am trying to streamline the past manual labor that is a full time job for the Treasurer of this club and desperately need your assistance. 90% of our membership has provided email addresses.

For any member that does not use a computer, you will continue to receive everything club related via the US Postal Service so please don't worry.

Thanks for your help and continued patience!! Beverly





Derrel DeRoche, dressed as a police officer, with his 1920 Henderson Model K Four. Derrel rode this in the making of the movie "Kingfish", released in 1995. On a funny note, during a photo op, the Henderson got more attention from bystanders than John Goodman, the star of the movie.



Take me back, to "The Good Old Days"...

NEW TYPE MOTORCYCLE

[2000.] Having read your article in the May issue, entitled "Motor Cycle or Motor Driven Bicycle," in which you advocate getting away from light bicycle construction, no pedals, a designed machine, etc., I would be interested to know your opinion of the design I am sending you. This machine is proportionately large throughout—46 inch

view shows a pan completely enclosing the under side of the power plant, with large opening in front to allow air circulation.

WM. C. HENDERSON.

BUFFINGTON, N. Y.

Your design is clean cut and original, but your drawing does not seem to be to scale, for the engine appears to be not over 9 or 10 inches in height, which makes your draw-

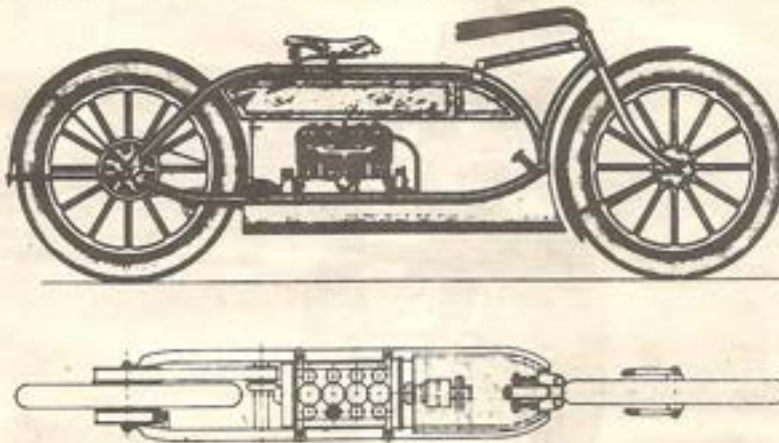


Fig. 1. Henderson Motorcyclo Design.

wheel base, 28 inch artillery wheels, 3 inch tires, 4 cycles, 2 1/2 x 3 in motor, belt drive, with idler sheave operated by foot lever for slipping purposes; brake operated by foot lever; no pedals; foot board; oil, gasoline and tool kit in one divided tank; spring frame as shown in accompanying sketch; saddle located very low and nearly between wheel centers, thereby reducing effect of road shocks; speed from 4 to 50 miles per hour. The rear axle construction consists of belt sheave and brake drum integral with hub flanges mounted on large ball bearings. The plan view with top bar and tank removed shows the general hook up and location of footboard, magneto, motor, jackshaft, belt drive and brake. The side

ing show apparently room for a low seat and tank over the engine, yet with large road clearance, while in all probability your actual construction will require much greater height for the engine. The wheel base is rather longer than necessary; 28 inch wheels and 3 inch tires are all right for American roads, provided the position of the rider is not too high. The spring arrangement of your front wheel ought to take the shocks well, but the construction is such that there will be considerable up and down motion to the handle bar and grips. Some brace between the upper tube and the lower tubes might be advisable and a step of some kind near the rear. Personally I would not use a belt drive with a four cylinder engine, a shaft running in oil or an enclosed silent chain with free engine being preferable. The under pan is good, also the platform for the feet and pedal control. Your drawing shows too little clearance between the tires and the mud guard, even in view of the fact that there is no relative motion between the two. Personally I should prefer springs on the rear wheel also. Perfect your engine design, then you will know exactly how much space will be required and can more permanently arrange the other details. Your motor is larger than there is any necessity for, and will undoubtedly carry the rider anywhere without a direct drive, but this is a wasteful method, as a smaller engine and two speeds will accomplish the same results.—Ed.

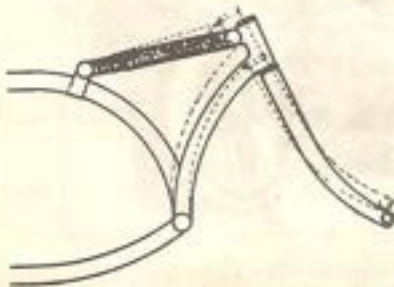


Fig. 2. Henderson Front Wheel Spring Suspension.

This historical letter was written by Will Henderson to Editor of Cycle and Automobile Trade Journal in 1910. Note unusual fork springing. This model was never manufactured for sale.

The Henderson Motorcycle Company

Detroit, U. S. A.

NOVEMBER, 1911

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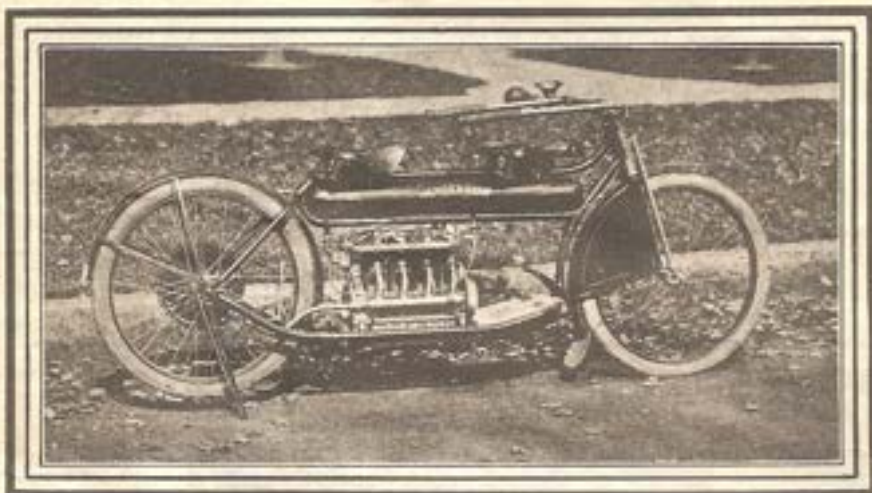
CYCLE AND AUTOMOBILE TRADE JOURNAL.

New Four-Cylinder Motorcycle

A new comer in the field of motorcycles has recently made its appearance in Detroit, Mich., and has attracted considerable attention. It is a four-cylinder machine and is manufactured by the Henderson Motorcycle Company, of 268 Jefferson Ave. The Company has been incorporated under Michigan laws with a capital of \$175,000, by T. W. Henderson, W. G. Henderson, George Monaghan, William E. Metzger, Charles Larned, C. W. Dean and F. M. Alken. The machine was designed by W. G. Henderson, who has been engaged in automobile designing for a number of years.

strength, gives ample gas capacity for all cylinders to draw upon regardless of motor speed.

Lubrication is by splash system in addition to a sight feed device mounted below the oil compartment of the tank and leading to the crank case. The jack shaft is oiled in a similar manner. Bosch magneto ignition is used, the advance or retard being by spiral coupling, to obtain a wide range of spark position. The jack shaft casing, containing the bevel gearing, is divided horizontally, the shaft and clutch being borne in the lower half, which is a unit with a crank



The Henderson Four-cylinder Motorcycle.

As will be noted from the illustration, the frame lines are a radical departure from regular construction. The frame is of the curved trapezoidal cradle type. The front tube running down from the steering head is divided into two tubes, forming a cradle which carries the motor, jack-shaft casing, foot-boards and pedals. These tubes rise at the rear and attach to the rear wheel hanger, as do the rear forks. The motor is of the four-cylinder vertical type, the cylinders being of L head construction, with inlet valves over the exhaust valves, mechanically operated. Bore and stroke are $2\frac{1}{4}$ and 3 in. respectively. The crank case, which is of aluminum, encloses the cam shaft and has an extension for carrying the jack shaft. The case is divided horizontally, the shafts being borne in the upper half, while the lower half serves as an oil reservoir, as in automobile practice. The lower half of the case is fitted with ten flanges which help to cool the oil and give strength to the casting. The motor and jack shaft casing form an easily removable power plant. The carburetor is located at the rear of the motor, and the manifold, on account of its

case of the motor. The Eclipse clutch is used, the same being controlled from the handlebar. The coaster and band brakes are controlled by pedals on the foot-board.

The machine is said to be capable of sixty miles per hour. The machine has a capacity of two gallons of gasoline and two quarts of oil. A bicycle type mud guard is fitted to the rear wheel and a box guard to the front. The machine is listed at \$325.

Restoration of Another "Baby Four" - by Larry Burke

Back 40 years ago, Bud Redmond, of here in Wichita, Kansas, would host a fin welding party on January 1st of every year. Back in the early 2000's, I was lamenting to Howard Wagner, Bud Cox, and Herb Ottaway that I missed my 1931 baby 4 I had sold. I had ridden that bike all over Colorado chasing Herb on his 4 and Bud on his Ace, even to the top of Pikes Peak. Back in the 80's not a thought was given to what we were riding, it was just old iron and it was fun. This New Year's Day was good and cold, the chili was hot, the conversation was good, and no thoughts were given to the pair of Crocker jugs that laid in the forge being pre-heated by the master of stick welding, Bud Redmond. Before Howard left for Omaha that day he said to give him a call, he had an idea where a baby 4 was that might be had.

I could not wait to call Howard. What's this 4?, where is it?, does it run?..... all the hurried-up questions. Howard asked if I was interested in a three main 4..... I didn't hesitate. Howard went on to tell the story of how the set of cases came to lay under his work bench. Everyone but me knew of Howard's purchase at The McQueen's Estate Auction. Howard had not been able to attend so Bud Cox purchased the lot for him. Bud repaired the cases, Howard had the crank reworked, and all the babbitt ran and the crank bedded, then under the bench it went for almost 15 years.

Two days after Buds finning party, I visited Howard. Bits were all organized by group. I made the deal for the bike and never looked back..... well sorta. I didn't look back..... buyer's remorse sat in less than two weeks after I had purchased the bike..... There were great regrets, so I called Howard. "Howard I came up with the two grand you wanted for the 401 Princess Side Car..... is it still available?" "Sorry, but I was too late.....", and that is a whole other story. Howard always commented to me, that it's not a 401 with drop center rims. You have to have clinchers to make it correct. So I tore the bike back down.

I tore the bike down shortly before the 2018 Davenport meet with the plans to have it rebuilt and shown at the Fremont Winter AMCA meet, and in Tiffin the following August..... well, that didn't happen. A new health issue plus a radical rotator cuff surgery this past August put me way behind. So here we are today. I ran out of space in my garage shop, so since I had pre-paid the rent some 55 years ago (I bought the beer), I moved the project over to my buddy Dick's shop. Bike back together and the long awaited Princess getting hung to her side.

DA435

The bike was restored as purchased from Howard, with a lot of Indian Ace parts and features. The crank leg and kick pedal are Indian Ace. Early style rear brake leg and lever. Horn bracket is parkerized. A lot of the small springs and mag lever are parkerized. Jerry Ottaway & George Yarocki were great help with the first rebuild with details and specific special bolts, most all either excellent original or NOS.

Kent Thompson played a big roll in just plain support and the project would have never happened without the encouragement of Jim Wellemeyer and Terry Sawyer. All played a part in getting the mess of bits back together the second time. And, last but not least, my Great Grandson Austin who told me, "that's my motorcycle!"



LOT 611 1928 Indian.
4 cylinder parts bike (LOT)

McQueen
CERTIFICATE OF AUTHENTICITY

This certifies that

Lot Number 611

was originally owned by motion picture star
STEVE McQUEEN
and purchased at the actor's estate auction
held at the
Imperial Palace Hotel & Casino
NOVEMBER 24-25, 1984 • LAS VEGAS, NEVADA

Terry McQueen
Terry McQueen

Chad McQueen
Chad McQueen







Simple Zinc Plating Process for Do-it-yourselfers - by Rob Sigond

There comes a time in practically every motorcycle restoration where parts have to be re-plated. Zinc and Cadmium plating is meant to be sacrificial, meaning it sacrifices its life to protect the base metal from corrosion. In the case of fasteners, years of poorly fitting wrenches, pliers, and hammers being used have done a number on both the fasteners and the plating. Other parts simply have lost their plating over time and need to be refreshed to match the rest of the newly restored machine. Chrome and nickel are often best left to the experts. In most cases, those processes use dangerous chemicals and are not conducive to at-home settings. Zinc plating however is something that can be done at home, with pretty much zero risk to the individual or the environment. I stumbled upon this process on a vintage Honda eight years ago. It took me a bit of time and mistakes to fully understand the process and be able to produce quality and consistent results. Having seen others struggle with the process, it was decided to write a tutorial that should take all the guess work out of the process and get folks started with a quality plating job on their first try. So here it is, a description of how I zinc plate items. It is written like an instruction to make it more interesting to the reader. It is in no way intended to be anything more than an article written for entertainment purposes. I have to say this for liability reasons. Please see the disclaimer at the end of the article.

Materials and Equipment

Pure zinc – This is used to line your bucket. I use 99.999% pure zinc roofing strips available at hardware, roofing or big box home supply stores. It is used to prevent moss from growing on roofs.

DC Power Supply – This can be as simple as a pair of D battery cells connected in parallel or an AC/DC transformer like those used to recharge small cordless tools and appliances. A battery charger can be used as well. I recommend a rating of 12 vdc and 1amp minimum.

Plastic bucket – size is dependent on how big you want your set-up to be. Mine is about 1 gal. Must be plastic so it will not conduct electricity. Glass will work, too, but fraught with the potential for disaster.

1 gallon of white vinegar

1 package (normally a box the size of a ½ gallon milk container) of Epsom Salts

Copper, aluminum or stainless steel wire to use as hangers - I use 12 ga. copper wire normally used to wire houses.

Two digital multimeters - The ones you get for free from Harbor Freight are perfect.

An Ohmite variable resistor (potentiometer) rated at about 300 volts and 2000 ohms - I got mine as Army surplus for \$7.00. You could get away with smaller but there is a lot of heat generated in the potentiometer and I did burn up a couple of small ones I scavenged from an old stereo before I got the one I use now.

Small alligator clips - to connect everything together.

Digital Timer

Brass Brushes - size is dependent on parts being brushed.

Building the tank

I make a circular tank lining from the zinc sheet metal that hugs the ID of the bucket. I also make it nearly as tall as the bucket. I use a small 1 gallon bucket so mine is two strips high. The strips are mechanically connected to each other by cutting slots and weaving the top and bottom rings together.

This connects them electrically which is what is important. Save the trimmings from making the positive zinc rings. You will use them to “feed” your electrolyte.

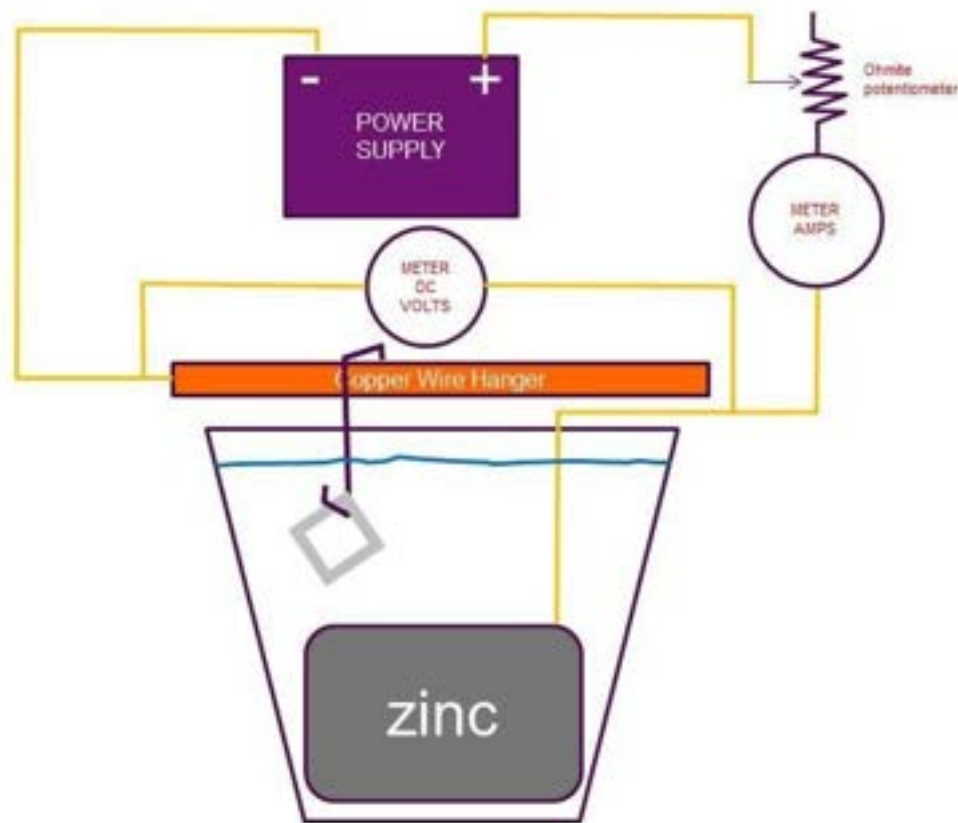
To the top edge of the top ring of zinc, fasten a piece of 12 ga. copper wire that will go up and over the edge of the bucket. This is the positive connection for the power supply.

Now, take a long piece of copper wire and secure it to the top edge of the bucket. You can drill a hole in one of the edges and run the wire thru it, loop it over the bucket, back thru the hole and back out to the outside of the bucket. Leave a tail as this will be the negative connection for the power supply. Leave the loop loose so you can pivot the wire up to allow clear entry to the bucket. Run the wire across the top of the bucket mouth and then bend it over the other edge. Most plastic buckets have lips intended for a snap-on lid. You can cut a small notch in the top edge of the bucket 180 degrees across from the end you just looped and then bend the wire so it passes thru the notch and then snaps in place and stays centered. It is from this wire that you will hang the parts to be plated.

System Wiring Diagram

Below is a simplified diagram showing how to electrically connect your plating system.

I simply unplug my power supply when I finish plating parts and plug it back in for another plating job. You can install a switch in either leg of the power supply if you prefer, for convenience.



Plating Solution (aka, the bath or the electrolyte)

The solution is very simple. Dissolve ¼ lb. of Epsom Salts into 1 quart of vinegar. So, for 1 gallon of white vinegar you add 1 lb of Epsom Salts. Stir or shake the solution until all of the Epsom Salts crystals are fully dissolved into the vinegar. With this done, take the trimmings from your zinc tank rings and drop them into the jug of plating solution. It does not take a lot. But you can cut up some small extra pieces and drop them in if you wish. Pop the cap back on the jug and leave it overnight. The zinc will be eaten by the acid (vinegar) and this will produce zinc ions in the solution needed to plate your parts. You just fed your electrolyte.

The Plating Process

Prep of the part to be plated is key. All rust/corrosion must be removed entirely. The finish on the part before plating will determine the quality of the finish on the plated part. Grease is another enemy of plating. Thoroughly degrease and dry the part before putting it into the bath. You might want to wear rubber or cotton gloves to handle the parts if you have oily skin.

With the system connected as above and the power supply turned off or unplugged, set the Potentiometer (aka Pot) to Zero Output (max resistance). Hang your part(s) on the wire hanger into the plating solution. Make sure they are not touching the zinc liner as this will create a short circuit. Plug in or turn on your power supply. Slowly turn up the Pot until you see amps reading on the ammeter and volts on the volt meter. Note that the meters will never be zero with the power supply on because the solution is an electrolyte and will conduct some current. Keep turning up the Pot until you read the current limit of your power supply (let's say 1 amp for this set-up) or 1.5 vdc, **whichever you hit first**. The amp limit is to prevent you from burning out your power supply. The voltage limit is to assure an attractive plating job. Too much voltage over 1.5 vdc and the plating will be very dark and sometimes scaly in appearance. The size of the part(s) being plated affects the power (volts x amps) required. The bigger the part or the more parts plated at one time, the larger the surface area and hence the area that is conducting electricity. So, you need to adjust the pot for every trip thru the bath. Exceptions would be the same part or identical parts going thru the bath. There are charts for surface area and current settings. But if you stay within the limits given here, you won't need the charts.

When the voltage and current are set, start your timer. Leave the parts in the bath for 5 minutes. It may take longer if your bath is weak (not enough zinc ions). This will happen if you start immediately after mixing a new solution. To avoid this, make sure you leave it at least overnight with pieces of zinc as recommended above.

When your timer tells you 5 minutes have passed, turn off your power supply and remove the parts from the bath. The parts should be a light flat gray in color, like gray primer. Put the part in fresh water and brush it with the brass brush. The dull gray smut will be removed and brushing will result in a nice shiny zinc plated surface. Put the part back into the bath for a second plating run. When done, remove as you did the first time, brush again while rinsing with fresh water and dry the part. You are done.

General Comments

The deposition of zinc on the part is called "throwing". The plating process is line of sight, hence similar to throwing a ball from one person to the other. This means that hollow parts will not be plated on the inside. If you want to plate the inside of a hollow part, you need to make a zinc electrode that will fit inside the hollow and be able to throw to that inside surface. It CANNOT touch the part so it is a tricky process if the ID being plated is small. As a general rule, edges will be plated, even though there is no zinc directly opposite the edges. There is normally enough energy in the bath to throw to those edges. And the edges create some type of electrical phenomenon that causes the plating to build up there.

The hanger may prevent the area touching it from being plated. So, when you put your part in for the second trip thru the bath, put the hanger in a different location on the part.

This is an electrical process so contact surfaces must conduct electricity. You can get build-up on the hangers and hanger wire, as well as corrosion/oxidation that will hinder good electrical contact. Before starting a plating session, clean off the hangers, hanger wire and electrical connection points with a brass brush, steel wool or fine sandpaper to assure good electrical connections.

Large parts can be plated a portion at a time. I have stood long parts up in my tank and held them to the hanger wire with a clothes pin. Then flipped them over and done the other end. You may see a slight transition where the two plating processes meet in the middle. But normally you can brush it and that will disappear.

The bath will last a long time. It will darken with age and that does not normally affect the plating process. When it gets too dark, just make more. The ingredients are cheap.

The zinc rings in the tank will get eaten up by the process. They are providing replenishing zinc to the bath. So, with time, you will need to replace those zinc rings. To maximize life of the ring, pour your bath back into the vinegar jug and cap it when not in use. Leaving it in the tank will just eat up your zinc that much quicker.

A special note on plating high strength steel like spokes, springs and grade 8 bolts.

The process of plating creates Hydrogen. Those are the little bubbles that you see. During the process, the H₂ can get into the grain structure of high strength steels and cause what is known as Hydrogen Embrittlement. So, to prevent this, after plating, place the parts in an oven set at 400 degrees F and leave them in there for at least a half hour. This will drive out any H₂ from the steel. You should do this within 24 hours of plating. It is best to do it immediately after plating.

Disclaimer

This information is being provided for free and for entertainment purposes only. If you choose to follow the process, you do so at your own risk. You should consult with experts if you have any doubts or are not sure of what you are doing. Electricity is inherently dangerous and all standard precautions should be taken.

PHOTOS OF MY SET-UP



Here is my set-up. Starting at the left, the power supply. Plastic bucket, lined with zinc roofing sheeting, 2 Harbor Freight Multi-meters, an Ohmite potentiometer to control the power to the bath, a timer and a bucket of brushes.



Here is the inside of the bucket. You can see the negative wire (hanger wire) running across the top and the positive wire connected with a screw to the zinc sheeting inside the bucket.



Here is the back side of the Ohmite potentiometer showing the electrical connection. Also gives you an idea of what you are looking for in a potentiometer.



Here is an assortment of hangers to suspend parts from the top hanger wire. Note that they are nothing fancy. The thin wire is stainless safety wire. The heavy wire is 12 ga. house wiring. The small gray tube to the left was a set-up I made to plate the inside of a hollow part.



Here is a bolt set up for plating. There is no electrolyte in the bucket for photo purposes.



Here is a wrench being used to demonstrate that even parts too big to fully immerse can be plated. The clothes pin is holding the wrench to the hanger wire to complete the circuit.



Shown here is a special plating set-up I made to plate a long part that could not be plated in my regular plating bucket. The gray area is the zinc sheet which has turned gray from use. That tab sticking out on the left is where the tank plate gets connected electrically. A negative connection wire would be attached to the part which would be suspended over the tank plate in some manner. I built this years ago from a section of plastic rain gutter.

From the Editor - Tracy Woodall

Becoming the editor for the Indian Four Cylinder Club wasn't necessarily something that was on my radar. When I was asked if I would like to help out or even take this on it surprised me because I was still very new to being a member. I am finding that the greatest benefit in doing this is the fact that I'm learning a lot along the way and that was a big part of my goal in joining in the first place.

Please keep in mind, as you read this, that I haven't had the opportunity to meet everyone, or become familiar with what you know or can offer as far as possible input goes. Please feel free to speak up if you would like to participate. A couple of thoughts have been shared with a few people asking for their help in putting a story together on a more particular subject related to the use of these bikes. If you have any thoughts or ideas on subject matter for articles or information I would be happy to look into this or even work with you to get it put together for a future issue. Preparing up front for the future will certainly help keep the clubs publications more interesting.

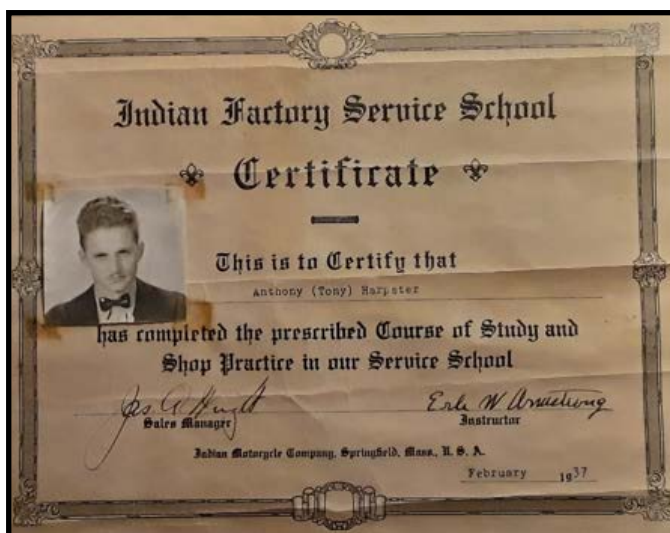
I see what we are continuing to put together to be as much a preservation of history as the preservation of the machines themselves. With so many new members coming on board, along with those who had stepped away coming back as members again, we are one of the largest groups of people who support the American made Fours in the manner that we do.

Hopefully you will find the archives contained within the new website helpful and informative. Work has started on a larger project that I hope to be able to introduce later this year. I'm not an expert by any stretch of the imagination so I've turned to those who are for their assistance in helping to complete that.

When we put out the word that we were looking for your help in putting articles and pictures together for this Spring issue, the support started coming in. A big thank you goes out to everyone who has sent pictures, written an article, worked with me to allow me to help put your story together, or even requested that a for sale or wanted ad be placed for you. It's been a pleasure! - Tracy

1940 Indian Four - by Andy Tarnik

Andy Tarnik purchased this 1940 Indian Four last year at the meet in Tiffin. It was being sold by the family of Tony Harpster. Along with the information provided with the bike came this certificate awarded to Tony for having attended the Indian Factory Service School, once taught at the factory in Springfield, MA. From what we've learned, he started out in the Cleveland area where he served as a police officer using this Four when he was on patrol. The siren is still mounted and works just fine as was demonstrated by a few during the meet as they made their way around the fairgrounds. In his later years, Tony provided escorts for funerals and certain other events. At some point it was converted to have a 1950 Chief fork. This bike is in terrific shape considering it's many years of use. Also with the information came the two pictures of Tony in uniform showing what would have been "then and now" at the time. Also shown is a picture of the bike at the meet.



For Sale/Wanted to Buy

For sale:

1946 restored Indian Chief
1941 restored Indian Sport Scout
1938 Indian Chief
1970 Triumph Davtona
1938 Restored Indian 4 with side car
1996 Harlev Soft-tail Springer
Contact: Sarah Cecil (859) 351-4817

For Sale: 1940 to 1945 Indian complete sidecar. Have mounting brackets for Chief 1940 to 1953. \$12,000 or Best Offer. Contact: Elmer Lower Phone: (717) 379-2827 or indnelmo@yahoo.com

For Sale: 1932-1935 and 1938-1942 exhaust manifolds is now \$750.00. I had to use a different foundry for the castings and the costs are more. The aluminum manifolds are still \$475.00. Tom Wilcock - manifolds - castings - (905) 263-2557 or twilcock@hotmail.ca

For Sale: Princess Sidecar, restored. Presently attached to a 1938 Indian 4. \$29,500 for the sidecar. Located in Florida. Contact: Mike Grossberg, email: r985mike@yahoo.com

For Sale: 1938 Indian Four. \$75,000 OBO. Awarded Junior 1st place at Ft. Sutter years ago. Excellent condition. Mike (904) 402-2774, email: r985mike@yahoo.com

For Sale: 41 Indian 4 cvlinder. Numbers matching. Shows 16,000 Miles. Running. Plus 39-4 engine and all extra Indian Parts included. \$74,000. Blair Duncan Dillsburg, Pa. Blabonrt@gmail.com or 717-796-9755 leave message & call back number.

For Sale: Longer side stand leg's and a stronger return spring. The legs are for 1932-39 Indian 4 Cvllinders only. The leg is \$ 80.00 and spring is \$ 8.00 plus shipping. All parts are repro. Contact: Wally Krzyzanowski (574) 896-2695 or email: wjkindian@hughes.net

For Sale: 1940-45 Chief and 4 cvlinder #42596 rear shock upper springs 2 for \$ 20.00. And 1946-53 chief # 809015 rear shock upper springs 2 for \$ 20.00 plus shipping. All parts are repro. Contact: Wally Krzyzanowski (574) 896-2695 or email: wjkindian@hughes.net

For Sale: 1930-1936 Indian 4 cvlinder Simms magneto freshly rebuilt by Marks. Contact: Mike Tillotson, Omaha, NE (402) 453-8185



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W: (717) 774-7221

Wanted: Looking for a tire pump and a kick lever for a 1931 Indian 402. Please contact: Lincoln McIlravy email: lmcilravy@southslope.net

Wanted: 441 Front Cylinder Head - Tom Brewer (T-Bone) bfide2@hotmail.com

Wanted: Marvel 1663 carburetor for a 436 motorcycle. Contact: Colin, email: calinba11@yahoo.com

Wanted: 1933-1935 cylinders and intake. Will purchase outright or trade for earlier cylinders and intake. Tom Wilcock (905) 263-2557 or twilcock@hotmail.ca

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From The Springfield Museums - by Karen Fisk

The Wood Museum of Springfield History, one of five Springfield Museums, celebrates innovation in the Connecticut River Valley and beyond. Its Indian Motorcycle Collection includes motorcycles and memorabilia collected by Charles and Esta Manthos, friends of Indian founder Oscar Hedstrom. Every summer in late July, the Springfield Museums celebrate Indian Motorcycle Day (July 26, 2020) and invite Indian Motorcycle owners to showcase their vintage cycles.

Figure 1 features museum volunteer Don Skarp's four cylinder Indians which have won prizes during Indian Day.

Figure 1: Don Skarp, a volunteer organizer for the Springfield Museums' Indian Motorcycle Day, has won prizes for his beautifully restored Indian Fours.



Figure 2 is the Springfield Museums' Indian Four Police Model, 1942. Considered a "luxury" cycle, the Indian Four can trace its roots back to the Ace Motor Corporation, which Indian purchased in 1927. Modifying and improving on the Ace designed by Arthur O. Lemmon, former Chief Engineer at Ace Motor, the Indian Four had a stronger tube frame, a sturdier crankshaft and improvements to fork and spring elements. Large skirted fenders, a plunger rear suspension and balloon tires were all hallmarks. This particular cycle carries engine number DDB117 telling us it was made in 1942, the last year of production for the Indian Four. In 2012, this Four was one of two motorcycles from the Wood Museum of Springfield History featured in the show *Steel Ponies* at the Eiteljorg Museum in Indiana.

Figure 2: Indian Four Police Model, 1942, Indian Motorcycle Company, Springfield, MA, Collection of Wood Museum of Springfield History, Gift of Esta K. Manthos, 2007.44



Some Things You Can't Buy - by Brian Riegel

Being at home for days on end has given me plenty of time to think. I've been reminiscing about the things in life that are important, and those that are not so much. The people we meet and the experiences we've had are at the top of the list. We all have our toys and special things, but the bumper sticker that reads..... "The one who dies with the most toys wins", is wrong. A good example of which is the club's great fortune to have been invited to share the many blessings afforded to our wonderful hosts through years of hard work and faith. I am speaking of course of the gatherings on the beautiful and historic property being preserved by the Millers. If you have ever been to "The BBQ at Don Millers", you have witnessed the pristine grounds and mid blowing collection of motorcycles, vehicles, and memorabilia on display. Don is a long time member of the club, and had been bitten by the bug long before most of us.

This family gathering would not have happened if not for the efforts of our friend, Elmer Lower, who had a conversation with his long time and much cherished friends, about possibly having a small get-together on the Thursday evening prior to the 2010 Annual Meet in Tiffin. Over the years it has grown and Elmer has been doing a lot of work every year behind the scenes to make it look easy. It's not. The Millers always say how much they love having us, but we know it is a big undertaking on their part.

Through the years there have been great times had by all. Such guests have attended as Champion Motorcycle Racers Bobby Hill and Dick Klamfoth. These gentlemen were gracious enough to sign autographed posters for all who wished, and trade racing war stories with each other, along with Butch Baer and Don Miller, for all of us to enjoy. Precious memories for all of us, that will never be forgotten.

We weren't invited there to show off the treasures and toys about the place, or to show off their famous friends. The Millers enjoyed our company, and wanted to share the things they like, collected for fun, and are preserving the heritage of, for future caretakers down the road. This brings me back to the original thoughts. To me, the measure of a life well lived, are the experiences that have been shared with friends you have made. I have a few pictures of a couple of things you may not have noticed or known about, which will illustrate the humbleness and sense of humor of our hosts. One picture is of something just hanging over the workbench, something many folks would display front and center so no one could miss it. Another shows there are cool things other than motorcycles. The third is a close up of a bit of tongue in cheek humor.....

Mr. and Mrs. Miller, I just want to say..... Thanks for the Memories.



1939 Indian 4 Serial #282 - Shared by Steve Jenson

I've had this for a little over two years. It came from southern Minnesota. The paint is not original but I'm leaving the old finish where I can. I'll let the next owner restore the paint. After I ran it and checked the compression, I found that it had none. The bottom end had been done before but it more or less needed a top end overhaul. The engine is at Ripka Machine in Redwood Falls Minnesota for this and is about finished. I should have it running this summer. This will have a magneto ignition. The fork is at Jerry Greer's to be repaired. The rear wheel has been fit up and the seat has been installed. Sharing this as a work in progress.





Henderson Deluxe Zenith T4 and T4X Carburetor Repair By Rocky (Dave) Corsmeier

Once again, my wife has requested, I write a tech article, I am the fall guy when the magazine needs material. I thank all of the members who have been contributing to the club's wonderful publications from the bottom of my heart! As always, when she asks, I say, "Gee, I can't think of anything." The more she pushes the stronger writer's block I have. At her suggestion, she asked me to write about what I am currently working on, which happened to be a set of Penna-Lite spotlights. I had some great pictures of that project. But for the first time in my limited experience with a smart phone/camera, I have somehow lost $\frac{3}{4}$ of those photos. So, you're getting the details of what I am working on now, which is the Zenith carburetor for my 1924 Henderson which was last on the road in 1930. I brought it to the meet quite a few years back in its bare barn fresh state, not even wearing any tires. As it was inspected by everyone at the meet, I requested anything from the Henderson gurus as far as helping me get her on the road again. Being a fairly complete bike, I asked people to give her a scrutinized eye and Toney Watson pointed out the crack in the cast iron part of this otherwise bronze carburetor. And he said, "Yeah, almost all of them are cracked in that spot". I thought why in the world would some company make a carburetor out of bronze and add a piece of cast iron which is considerably more brittle (thinking it was the irons fault). Finally getting to tear into it and begin a sympathetic rebuild 12 years later, I realized the cast iron cracked, not because it was brittle but because of the force of the DAMN POT METAL VENTURI SLEEVE inside of it that was installed at the factory to regulate air flow. These were meant to be able to slip in and out like most carburetors to adjust air flow upon any certain application. Example, this particular carb was not only used on Henderson's but also on Model T trucks. However, amazing that it is, this pot metal swells up so tight that it can grow its outside circumference to the point that it won't come out. Literally expands its outside circumference a full $\frac{1}{4}$ inch. Some people have the same problem getting a venturi out of a side draft Schebler or Linkert carb as well. But I have never seen any example as bad as these Zeniths. It is as if frozen water split it, the same damage you see to frozen copper pipes.



I purchased 2 other Zenith carbs and both of them have the same problem. I studied a few on eBay and they all had the same problem but worse!! So, I guess my old friend Toney was right. One of the 3 on eBay looks like a 357 slug went ripping through it...it is incredibly shattered. Hard to believe metal can change that much all by itself with no heat, water, ice, chemicals or other entities to make it grow so much. Pot metal should have been named garbage metal...haha. It can literally expand even after it has cracked through the iron sleeve and who knows how much more after another 50 years. SO, if you happen to have one of these carbs, inspect it closely. If it isn't cracked, you might consider taking the venturi out before it's too late and also so you can more easily model a new one out of aluminum....to my knowledge there are no reproduction venturi's available.

For years I have heard and followed the stance that we are but custodians of these wonderful old machines. So, if you have a Zenith T4 or T4X and value it, pull the venturi out. If you can get it out in one piece now, it would be easier to model a new one and not have to go through what I did.

First thing I did was ask myself, "what is the best way to get this out without cracking it (the iron) any further". I proceeded to cut a groove from top to bottom in the pot metal venturi with an 1/8" diameter carbide end mill and got as close as I could to the iron without scarfing it and finished



the job by hand with a small plastic handled fine hacksaw blade so that looks like a knife.



As I sawed through the venturi the amount of force still existing in that damn pot metal actually pinched the hacksaw blade and broke it as it cut through. Amazing huh?

I then got a drift pin and knocked out the broken piece of hacksaw blade that had become stuck. I knew I had to release the tension, so it didn't crack any further let alone crack in half. I drilled a hole at the end of the crack to keep it from growing. Second step, always keeping in mind that you don't want that crack to grow any further, one must chip out or cut it out with a machine. I thought about machining this out, with a lathe or boring bar (minimal tool point contact). But, I would still have stress against the 2-bolt flange "ears" on either the top or the bottom where you would be holding onto it in a lathe or mill operation. Top ones being bigger and stronger but that is the direction that I am pushing this crack, so I did not want to do that. And of course, a 7/8 and bigger twist drill would really destroy this project. Therefore, I decided to use a mini custom-made chisel, made from a 3/16 diameter ejector pin (I came from the tool and die world) approximately 6 inches long and nipped at it where I made my groove, taking very small nibbles at a time.

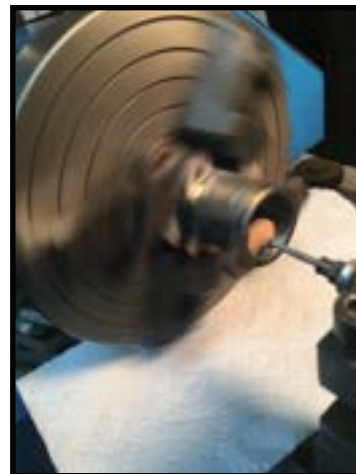
Once I got all the way up the groove and knew there was no more tension against the diameter, (mind you I have this bound in a vise) to not only hold it as my third hand but also to keep it from expanding, I then started chipping out bigger pieces.

Once all the pieces were removed, I sandblasted it to get all the crud and oxidized iron off the surfaces and inside the cracked area. And a good soak in sodium hydroxide and water solution and then a dip in acid so that it is extremely clean, especially in the cracked area so that the braze runs in the crack and not everywhere else but the crack. (Things must be far cleaner for brazing than for welding).

Next step was brazing. After heating it up, I was able to close most of the gap to try and maintain the original inner diameter. I then went about brazing it shut. To help braze from running out the other side, I made a sleeve of aluminum (brass braze, or silver braze won't stick to it).



After brazing, I hand ground most of the excess brazing material off the inside to help minimize the interrupted cut that I knew I was going to encounter when setting it up and turning a new diameter on the inside. I cut (turned) just enough off the inside to clean it up and make it round and then radial ground the inside of the iron sleeve to make sure it was more accurate.



A new inside measurement then gave me the dimension to turn my new aluminum venturi outside diameter to. Remember the new sleeve has to fit quite well to prevent any air escaping between the venturi and iron sleeve.

Dimensions to consider:

New outside diameter of aluminum venturi

Overall length

Inner most diameter (what we call the "throat")

Lead in radius (think of the shape of a power plant cooling tower)

Opposite end/trailing end radius

Taper Angle from throat diameter to outside diameter (see photo)

Set screw location.

Making this venturi was actually the most fun part of the entire job.

Next Step, measure down from the top how far the drop where the venturi starts; which is approximately 1 1/8" from the top of the carburetor. Hold it in that position and mark with a transfer punch where to drill the pilot hole for the 10/32 tapped hole in the aluminum for the set screw that holds this venturi in the iron sleeve.

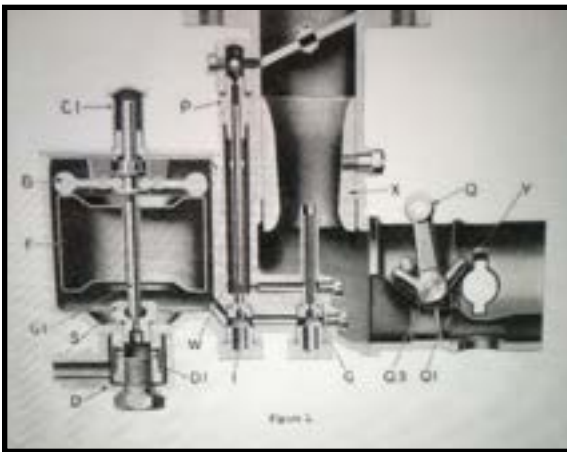


I believe this is a #21 drill and if you are lucky you can stop there on the inside of this iron sleeve. But if the crack on yours runs all the way up then you have one more piece to make which I had to do, and that is to make another sleeve to bring back the upper area to exactly 1- 3/16 diameter ID.



Only because when your throttle disc is closed you will be getting extra air around it even if it is completely closed. These brass throttle discs are very well engineered at this exact diameter to close. If you have excess gap from turning in your earlier lathe operation, then you need to make this sleeve as I did. I had an extra .010 air gap, which of course won't allow this bike to idle down to its recommended rpm. I happened to have a piece of bronze that would encompass my 3 dimensions which are OAL, OD and ID. I don't have any collets with the lathe I own so I had to hold this in a 3-jaw chuck. Very small cuts toward the end!!

Once that diameter is met, the next step is to install it on top of the venturi which is now set in place and line drill 3 holes from the outside. 2 holes are for the throttle shaft, and the 3rd tiny hole which can't be forgotten is the tiny idle mixture passage which feeds the throttle disc at idle speed. (See Zenith factory cross section picture below)



Now to focus on the outside: One reason why these carburetors crack where they do is because the pressure looks for the weakest point to crack. Unfortunately, one of those places is the area where the inside diameter is at its thinnest with the outside diameter of the iron sleeve. There is very consistent thickness everywhere except that point which is right where the low speed mixture adjustment knob is. (I call this a design flaw) Since that spot is where the brazed joint is, and I couldn't leave any extra "meat" on the inside. I hoped to leave a little on the outside but that is right where the adjustment knob is.



After a few assemblies, dis-assemblies, and filing, I finally got enough clearance for not only the knurled adjustment knob but also the fine brass screen that goes around it.

The typical process for me when going through a carburetor is to soak everything in strong Berryman's carburetor cleaner overnight and then a good soak in gasoline to neutralize the stink of the Berryman's and complete the cleaning process. Followed by 100 plus PSI from the air compressor and paint gun cleaning brush set through every passage. Then what I usually do is to lap all the mate faces so that there is minimal chance of air leaks. Most carbs with a 2-bolt flange pattern tend to be warped. As you lap them, they will always come in first at the outside of the "ears".



A thicker gasket only causes the ears to bend further when tightened which can cause a crack. After lapping all the mate faces on this carburetor, blow out the carburetor once again to remove any sanding dust. I focused on where the carburetor meets the intake manifold and sure enough it was warped the same way (ears being bent inward). After taking care of that surface I decided to go ahead and lap the 4-port pattern where it meets the cylinders and it really needed it as well.

You will need a fairly good-sized surface plate to do that operation. A granite surface plate or a 2-inch-thick piece of Blanchard ground steel (which is what I use) or a nice big thick piece of plate glass will suffice. Make sure you had your Wheaties that day!! It is easier to do this operation with PSA (pressure sensitive adhesive sandpaper). As far as other tools for this job, I usually end up with at least a half a dozen "blade" screw drivers so that I don't "round" out the screw's slot by using the wrong size. Liberal use of Kroil, time, and patience and maybe a micro torch to get the screws loose helps immensely! Speaking of screw drivers more modern screws have us spoiled. It is so easy to hold onto a "torx, allen or even a philips" screw than a slotted screw. If you don't have a **slotted screw holding screwdriver**, I highly recommend buying one. They really do work and you won't constantly be looking for screws that fell out of your fat fingers, off the screwdriver, tweezers or nose pliers. When you get up off your knees from looking, you can thank me later.

I hope I have helped at least 1 guy with my little article. The Henderson Deluxe guys tend to get left out and I didn't want to write a re-run on something regarding an Indian 4. Hopefully, the current situation with COVID19 is over soon and I can see most of you guys in Tiffin. With a little luck, I'll have my Deluxe with me.

Good luck with your current endeavors!

Rocky



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