

GRS PRESENTS

Learn

DEDICATED TO THE BENCH ARTIST



Q&A WITH TODD DANIELS INSPIRATION FROM THE WORLD AROUND ME

TECHNICALLY SPEAKING PREP & POLISH TECHNIQUES WITH BRUCE FARMAN

GRS TOOL TIPS HANDPIECE CLEANING

ISSUE 1
FALL 2020

Welcome to the first issue of **LEARN:**

GRS is excited to introduce our new e-magazine "Learn"!

"Learn" was created to showcase artists across engraving and jewelry disciplines. Make "Learn" your new resource for tutorials and tips to help expand your knowledge. Contributors range from GRS staff and instructors to friends of the GRS family. Thank you to everyone that helped make "Learn" possible!

If you have something you would like to contribute,
please email GRS at creative@glendo.com

DEDICATED TO THE BENCH ARTIST

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The entire GRS team thanks **Mitchell Lurth** for his contribution of the 2020 Learn plaque. His design was used for our cover logo on the 1st edition of "Learn: Dedicated to the Bench Artist." For more information about the 2020 Learn Plate, see page 18.

CONTRIBUTORS

BRUCE FARMAN

PREP & POLISH TECHNIQUES, PAGE 10

Primarily a stockmaker, metal finisher, and restorer of early American firearms, Bruce built his first rifle when he was 16. Mostly self-taught, he spent lots of time studying the best stockmakers. In 1986, Bruce applied to the American Custom Gunmakers Guild and was accepted. By the mid-90's he had begun doing restoration work, which led to an interest in engraving. In 2005, Bruce took his first GRS class. He retired from the Department of the Navy in 2004 (after 38 years) and now does firearm stocking/restoration full-time.



Todd has an impressive combination of formal training and professional background in diamond setting, custom jewelry design, fine metal engraving, and art.

He earned a Bachelor of Fine Arts degree with concentrations in Intaglio Printmaking and Jewelry Design from Miami University in Oxford, Ohio. As a 37-year professional goldsmith and jeweler, Todd now creates custom pieces for clients. He also provides intensive training opportunities on all facets of jewelry design, manufacturing, and production.

TODD DANIELS

INSPIRATION FROM THE WORLD, PAGE 04





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PREP & POLISH TECHNIQUES
WITH BRUCE FARMAN





INSPIRATION FROM THE WORLD AROUND ME

Q&A WITH TODD DANIELS



Todd Daniels has a professional background in diamond setting, custom jewelry design, precious metal engraving, and art that spans over 37 years. He uses bright cuts and geometric patterns to add decoration and emphasis to his settings. He has a deft mastery of engraving and utilizes whatever style is needed to achieve the desired effect. Todd often layers together pierced, engraved, and set pieces to create refined jewelry with dimension and beauty.

Todd was interested in making art and jewelry from a young age. As a child, he crafted jewelry out of metal parts his dad had around. He was creative with the materials he had available, taking a plain metal nut and filing it into a signet ring. In high school, Todd enjoyed taking part in an art program that had a jewelry design option. He won a Governor's Award in a jewelry design competition and decided to pursue art in college.

Todd graduated from Miami University in 1983 with a Bachelor of Fine Arts degree, with a concentration in Jewelry Design and Intaglio Printmaking. After graduating, he continued to expand his skillset through observing other professionals, research, and trial

and error. Once he had the process down, he would practice until he perfected these new techniques.

Todd worked for a local jeweler for thirteen years. During his time there, he developed its custom design department while also building his own shop. In 1996, Todd started his own business. Through his work, he met Joe Vogelsang and began to do contract work for Whitehouse Brothers. Vogelsang brought him materials and told Todd that he would take as many pieces as he could produce. Todd honed his skills as a designer and developer by working on vintage-style filigree rings over a period of 10 years. At the time, he was the only person working with the company that could complete a ring from start-to-finish.

Since then, Todd has worked independently, creating custom pieces for clients. He also regularly teaches for GRS at the Training Center in Emporia, KS, and has taught and demonstrated in different parts of the world, including China, India, Greece, France, Norway, and many, many more. He has also spent time working with a local high school art program, introducing a new generation of students to engraving and jewelry work.



2006



2019

Many people will know you as a GRS Training Center instructor. What made you decide to teach?

GRS is known for being a world-renowned teaching center and I was honored to be a part of it. I am always happy to share my knowledge and help others succeed.

What do you like best about teaching?

I enjoy sharing knowledge that can be a part of someone else's success. It is rewarding to see the progress students make not only during the class itself, but later when they contact me and show me how they are applying the skills they learned.

Out of everything you have worked on, do you have a favorite project? What is your most memorable project?

My most memorable project: I was commissioned to create a Master of Sacred Theology ring to commemorate an honorary doctorate that has been given by the order since the 1300s. One of my favorite projects is a watch that I worked on in collaboration with Geoffrey Roth which appears in November 2019 Special Watch Edition of the Robb Report.



Where do you go for inspiration?

I get inspiration from the world around me. I see designs in nature that I may use in a future piece. For example, I'm inspired by the layout of the seeds in a sunflower, the twist of a pine cone, repetitive shapes, fractals in nature, geometric patterns, etc. I enjoy abstract as well as representational art. I love to visit museums and view art from various cultures, both contemporary and ancient.

Are there particular artists that inspire you?

One of my favorite influences would be George Daniels (famous watchmaker) who is one of the only watchmakers that can build the entire watch from start to finish. I really enjoy Escher's work as well as Leonardo da Vinci, Michelangelo, Hendrick Goltzius, and Albrecht Dürer who was also a goldsmith.

When creating a new piece of work, what process do you go through (sketches, research, etc.)?

Once I have an inspiration, I make sketches to get the basic idea down on paper. Then I create models so I can engineer a design that will not only be beautiful but will also be functional. Unlike other forms of art that may be hung on a wall or set on a shelf to be enjoyed, jewelry must be designed from the beginning to fulfill its purpose of being worn.

Just for Fun

Todd loves to get out in the country and bicycle. He likes to learn about health and fitness.



He also enjoys traveling and experiencing other cultures and foods.

You have traveled the world sharing your art and working with different cultures. What is your biggest take away?

I think traveling always shows me that while each culture may have its own way of doing things, the people in those cultures are always just as eager to learn about others as I am. I have benefited greatly by being able to see the world through a different cultural lens. Every time I have the opportunity to travel, I always find inspiration and ideas for creating new pieces.

Where do you see the future of jewelry and hand engraving?

I think stone setting and hand engraving can be applied not only to custom jewelry such as rings, bracelets and watches but can also be expanded to embellish other forms of art and custom goods.

To see more of Todd's work, follow @todddanielsdesigns.



Your Instagram also features other forms of art, including printmaking, drawing, and sculpture. Do you find that your work in other arts influence your metal work and vice versa? What benefits do you see from working in other media?

I feel that by doing multiple art forms I have the opportunity to express both organic and geometric designs separately, however, I can also bring these two polar opposites together in a piece. For example, in a single watch project I may incorporate both organic and geometric qualities and the contrast of the two together in a single composition can amplify the effect.

If you could pass one bit of advice on to other artists, what would it be?

The biggest piece of advice I could pass on is that people need to give themselves grace when they are learning new skills. Don't be self-defeating. Understand that you learn by making mistakes. If you do not push yourself to your boundaries, you will never know your true potential.

Is there anything else that you would like to share?

Enjoy the journey of learning and creating, not just your final goals.

FIREARMS ENGRAVERS GUILD OF AMERICA

PROMOTING THE ART OF FIREARM ENGRAVING & ENGRAVERS SINCE 1981

Web Site: www.fega.com

Dear friends, engravers, and fellow members,

The Firearms Engravers Guild of America actively engages in promoting and encouraging the next generation of engravers. The Emerging Artist Award has been established to encourage artists to display their works of art for the first time. Each year's Emerging Artist will be granted the opportunity of a free display table at the annual FEGA Gun Show in Las Vegas, Nevada.

Applicants must be members of good standing and submit photos of their work for consideration. The winner not only receives a free show table, but also two tickets to the banquet and \$500 towards their hotel accommodations. This is just one of the many benefits of involvement in FEGA.

FEGA's strength is its membership. With their dues, our members support our Magazine "THE ENGRAVER" which our members receive four times a year, and "The Gun Engravers Show", the largest gathering of hand engravers in the world, held each January in Las Vegas USA. The Firearms Engravers Guild of America unites in our members love of the Art of Engraving.

For more information about the Emerging Artist Award, or joining FEGA visit FEGA.com.

All the best,

Barry Lee Hands
President of the Firearms Engravers Guild of America

The Greatest Generation Colt:
Engraving by FEGA Master
Engraver Mike Katherine Plumer
Engraver Mike Katherine Plumer
scratches by Katherine Plumer



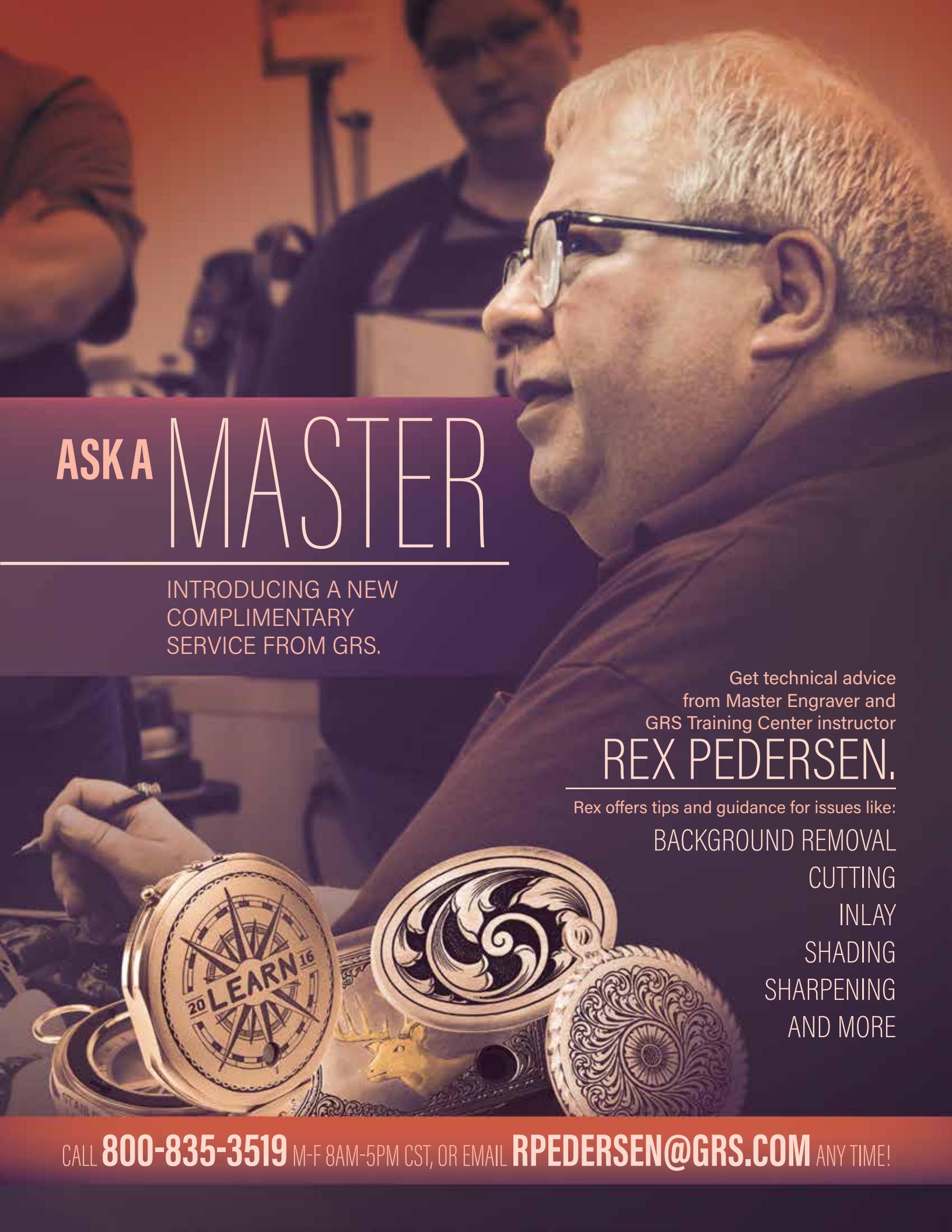
For additional information visit

FEGA.com

fegainfo@fega.com

1866 Winchester:
Casting of engraving by FEGA
Master Engraver Marty Rabeno





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TECHNICALLY SPEAKING

PREP & POLISH

TECHNIQUES

WITH BRUCE FARMAN

The preparation of a firearm for either engraving or metal finishing is one of the single most important aspects of completing a quality project. Engraving is usually the last process to be completed before the final finish is applied, so the firearm must be polished/sanded before engraving. Metal that has scratches from factory metal preparation or other fabricating processes will detract from the overall composition of a completed project. The final finish that is applied will not hide or cover scratches from poor preparation — it will make them stand out like a sore thumb. These techniques and processes are how I prepare a firearm for engraving or final finishing.



PROPER POLISH MAKES FOR THE BEST FINISH NO MATTER WHAT YOUR PROJECT IS.
IF YOU DON'T NEED TO REMOVE BLUING, YOU CAN SKIP TO THE NEXT PAGE.

METAL PREPARATION

REMOVING BLUING

SUPPLY LIST



RUBBER GLOVES



SAFETY GLASSES



STAINLESS STEEL CONTAINERS



FINE/SOFT STAINLESS STEEL BRUSH



4F STEEL WOOL



SCOTT® BLUE SHOP PAPER TOWELS



PRODUCT TO REMOVE RUST/BLUING



See below for recommended products.

As an engraver, you will generally receive your project for engraving in the white or blued. If it is blued, you must first remove the bluing before polishing the firearm in preparation for engraving.



Safety First! Wear **rubber gloves** and **safety glasses** while removing the bluing from a firearm.

Mix your **removal product of choice** and soak the parts in the **stainless steel containers** until the bluing is removed. You may need to use **4F steel wool** or a **fine/soft stainless steel brush** to clean out crevasses and stubborn areas on the firearm. Rinse the parts in cold water and dry with **paper towels**. Ready for polishing.

BROWNELLS® RUST AND BLUE REMOVER		WD-40® RUST REMOVER OR EVAPO-RUST®
PROS	<ul style="list-style-type: none">Removes bluing quickly with very little effort	<ul style="list-style-type: none">BiodegradableAvailable locally (automotive stores)Creates phosphate coating that protects metal from rusting for a while
CONS	<ul style="list-style-type: none">Not biodegradableCan flash rust almost instantly after rinsing in water (extra work)	<ul style="list-style-type: none">Time: 30 to 40 minutes

SUPPLY LIST



SANDPAPER (120, 220, 240, 320, 400, AND 600 GRIT)



SANDING BLOCKS FLAT

- 3 or 4 blocks of wood that measure 1 1/4" x 2 1/2"
- 1/16" rubber or cork glued to one side

RADIUS

- Plastic tubing (3/16", 1/4", 3/8", 7/16", and 1/2" OD)
- Steel rods that fit tightly inside the tubing



SANDPAPER LUBRICANT

- WD-40®
- Marvel Mystery Oil® (preferred)
- Odorless kerosene



SCOTT® BLUE SHOP PAPER TOWELS

POLISHING CHECK (STEP 5)



.0025" STAINLESS STEEL BRUSHING WHEEL (MOTORIZED) ONE INCH WIDE, FOUR ROW



MIRKA® MIRLON TOTAL® SANDING PADS 1500 AND 2000 (BY HAND)

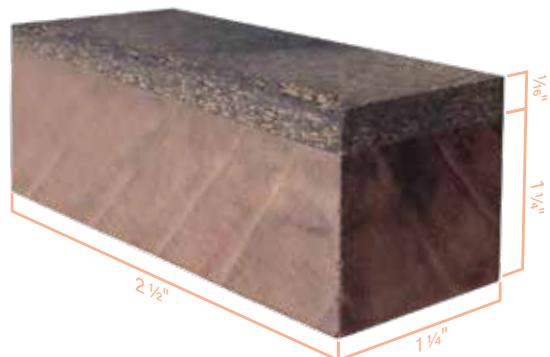
SANDPAPER PREPARATION

The actual polishing of the metal is accomplished by using various grades of wet or dry sandpaper. There are several different makers of sandpaper, but I use either 3M® or Norton® brands. The grades that you should have on hand are 120, 220, 240, 320, 400, and 600. These come in 8 1/2" x 11" sheets. I start by folding the sheets and cutting them in half until there are 16 pieces 2 1/8" x 2 3/4". It is **important to cut the paper with scissors** because tearing the paper will leave coarser edges than the grit of paper that you are cutting into smaller pieces.

MAKING THE SANDING BLOCKS

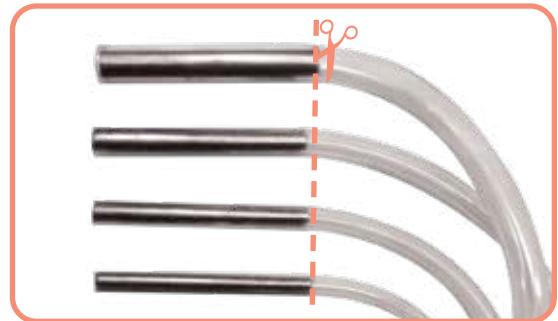
FLAT

To hold the paper flat, I use 3 or 4 blocks of wood that measure 1 1/4" x 2 1/2" and have a piece of 1/16" rubber or cork glued to one side. It cushions the paper, so it does not wear out as quickly.



RADIUS

Curved surfaces require a different configuration. At the local hardware or box store I buy plastic tubing in 3/16", 1/4", 3/8", 7/16" and 1/2" OD. I then purchase steel rods that fit tightly inside the tubing and cut them to 3" lengths. This provides a firm radius block for polishing curved areas.



POLISHING PROCESS

There are two basic methods of preparing firearms for engraving/finishing.

The **first method** is mechanical. Mechanical polishing requires the use of felt and cotton polishing wheels that are attached to an electric motor. The wheels are charged with polishing grit which ranges from 120 to 1200. Using this method can wash out the lettering and round any straight edges unless great care is taken. Poor polishing

has ruined many fine firearms. The **second method** is to hand polish the firearm. This is accomplished by using wet or dry sanding paper, special blocks and contoured round rods (all homemade) to sand the metal and maintain all of the edges and contours in perfect condition.

How much of the exposed metal do you polish?

There are several views on this topic. Some say, "Only polish what

you plan to engrave," but I believe you need to sand every exposed surface. Doing so gives you a smooth surface that will translate into a finely finished piece. Your engraving is part of a composition. If another person finishes the polishing, they will either spend a lot of time sanding around your work or risk ruining it if they sand into your engraving. By polishing before engraving, you save time and reduce the risk of damage during finishing.

✓ SAND ONE SURFACE AT A TIME.



✗ DON'T ROLL THE BLOCK OVER THE EDGE TO THE NEXT SURFACE.



Doing so will round the edge and lose the crisp design that was intended.

1



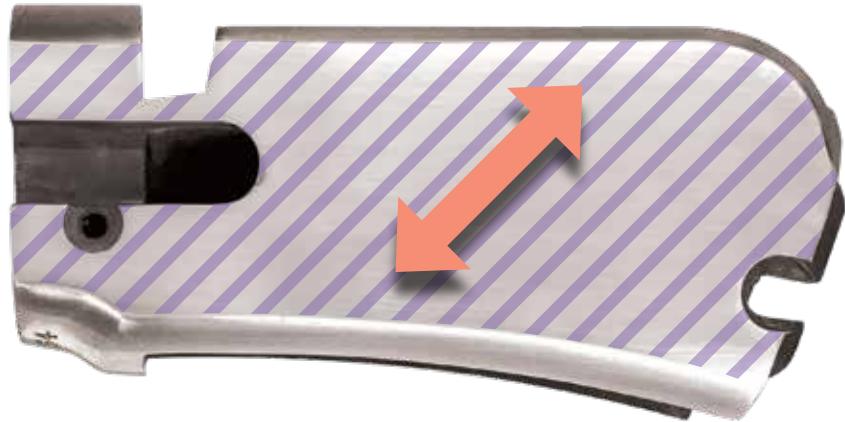
220 OR 240 GRIT

(or 120 grit if there are filing marks)

I generally start the process using 220 or 240 grit paper and one of the sanding blocks. There will be times when you will have to start with 120 if there are any filing marks. Lubricate the sandpaper and begin sanding at a 45-degree angle to the length of the piece being polished.

Lubricating sandpaper helps it last longer. It also breaks down grit into finer particles and eases the transition when going to the next finer grit in the polishing process.

2



320 GRIT

(or 240 grit if you started at 120)

Now it is time for the next grit, 240 or 320. Begin sanding at 90 degrees to the previous sand marks until all of the sanding lines are gone.

HOT BLUED, FRENCH GREYED,
COLOR CASE HARDENED, AND
OTHER FINISHING PROCESSES
Continue below.



RUST BLUED

Skip to step 4.

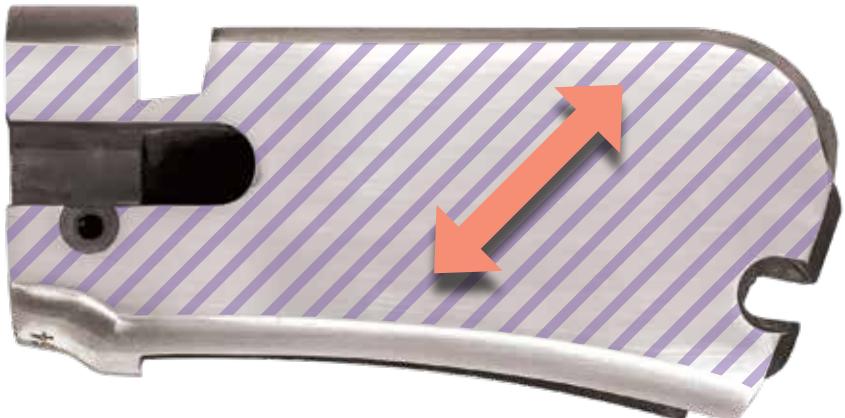


3

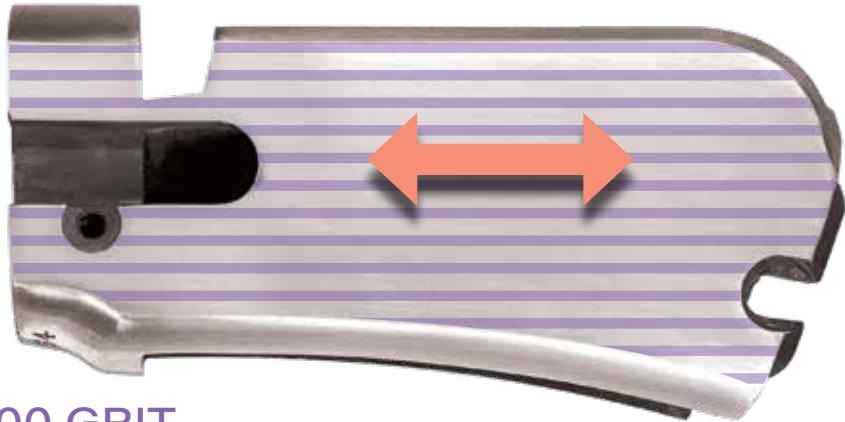


400 GRIT

Cross sand as before
with 400 grit.



4



RUST BLUED 400 GRIT OTHER FINISHING PROCESSES 600 GRIT

Do your final polish by sanding lengthwise on the piece being polished.

5

CHECK YOUR WORK

At this point in the process I check my polishing. Scratches can get hidden as you work through your sandpaper progression. Using the brushing wheel or Mirlon pads will make any remaining marks very visible.



OR



BRUSHING WHEEL (Motorized)

A brushing wheel is the only piece of power equipment I use while polishing. Running the wheel at 1700 RPM, I lightly move the entire piece at a 45-degree angle to the wheel.

MIRLON PADS (By hand)

If you are not set up with a blending wheel you can achieve the same effect using 1500 and 2500 grit Mirka Mirlon Total pads and lubricating oil. Cut the pad into 3" square pieces. Rub these across the surface at a 45-degree angle.



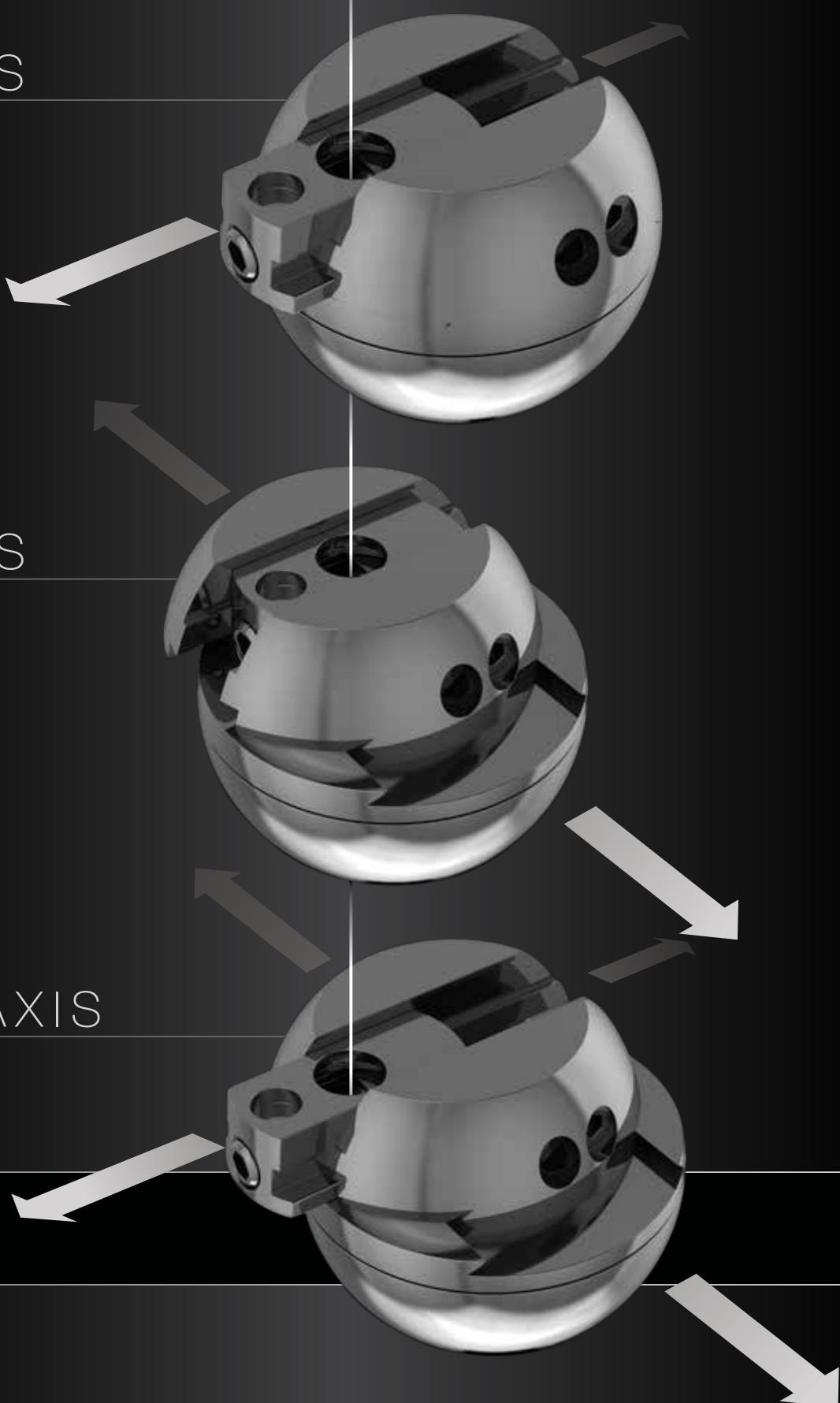
REPEAT
STEPS 3-5
AS NEEDED.

Closely examine the work under a light to see if any scratches remain. If they do, go back to 400 grit and redo those areas until you are satisfied, again using the blending wheel.

Your engraved project will only be as good as the surface preparation. Follow these simple steps, and your engraving will always look its best. Now that you've finished the preparation, the fun can begin. Start engraving!

S T A Y C E N T E R E D

X AXIS



Y AXIS

X+Y AXIS

JURA
BY GRS®



3X HOLDER ADDS
THREE AXES

J U R A 3 X L I N E

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EMPLOYEE PROFILE

OTIS MOON

Otis may be our **longest tenured member of the GRS sales team** with over 20 years of experience

but Molly, Torell, and Chelsey keep him on his toes! His favorite things about working at GRS are meeting people from all over the country (and world!) and the fun that he has with coworkers. He loves to keep people smiling and laughing. Otis is a big fan of the Oklahoma Sooners, Sanford and Son, Johnny Quest, and Scooby Doo. He is fond of animals and provides a home to a wide assortment of furry and scaled pets. Otis also enjoys cooking and R&B and gospel music. He doesn't believe in ghosts.



Otis working the corded phone circa 2002.



Otis played football at Emporia State many moons ago.

FEATURED WORK

MITCHELL LURTH

Mitchell masterfully engraved this 2020 Learn plaque showcasing his signature scroll style, fine shading, relief, and script lettering. He made quick work of the brass plaque that measures approximately three inches tall.

The Learn project is a yearly commissioned piece to promote the GRS Training Center. We loved the script Mitchell used so much it became the logo for this magazine!

Thank you Mitchell!

To see more of Mitchell's work, follow @theshadedleaf.



WANT TO BE A FEATURED ARTIST?

Please submit high resolution photos to glendo@glendo.com

SHINE ON

FEATURED WORK FROM THE GRS FAMILY.

KARL BRENNEMAN



JURA



DALE BASS





HANDPIECE cleaning

If your handpiece is sluggish, has noticeably less power, hesitates, or uses more air, it may be time for a cleaning.

SUPPLY LIST

- 5/64" HEX KEY WRENCH
- QC TOOL HOLDER
- CLEANING PADS
- CLEANING ROD
- COTTON SWAB
- RUBBING OR DENATURED ALCOHOL
- SYNTHETIC GREASE

1 DISASSEMBLE HANDPIECE

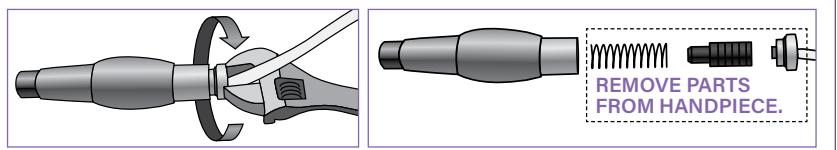


Current Model



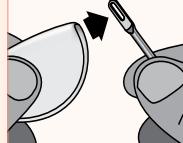
Previous Model

If the handpiece hose enters at the back, carefully remove the two parts as shown at right. Please note: The #004-801 and #004-821 (GraverMeister model handpiece) have two small spanner holes in the end cap.

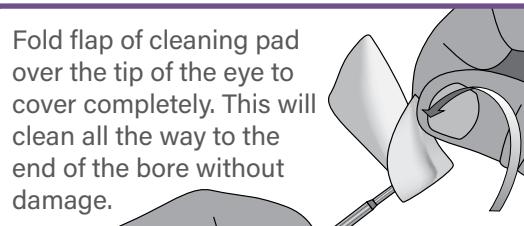


2 PREPARE CLEANING KIT

FOLD CLEANING PAD IN HALF, THEN INSERT THROUGH CLEANING ROD EYE.



Fold flap of cleaning pad over the tip of the eye to cover completely. This will clean all the way to the end of the bore without damage.



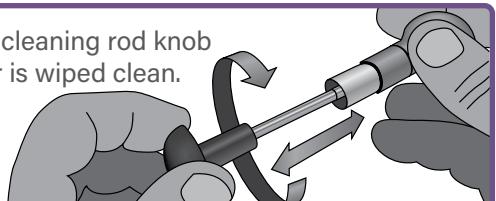
WET THE PAD WITH RUBBING OR DENATURED ALCOHOL.



3 CLEAN HANDPIECE BORE

CAREFULLY INSERT THE ROD INTO THE BORE OF THE HANDPIECE AS FAR AS IT WILL GO.

Once fully inserted, turn the cleaning rod knob so the entire inside diameter is wiped clean. Then gently move it up and down to clean the interior of the bore as well.



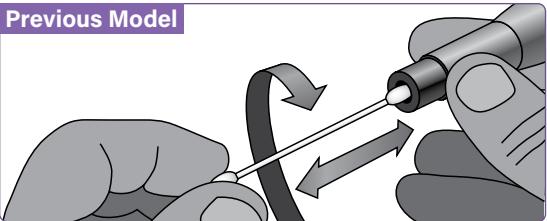
4 CLEAN RECEIVER BORE



WET A COTTON SWAB WITH RUBBING OR DENATURED ALCOHOL.

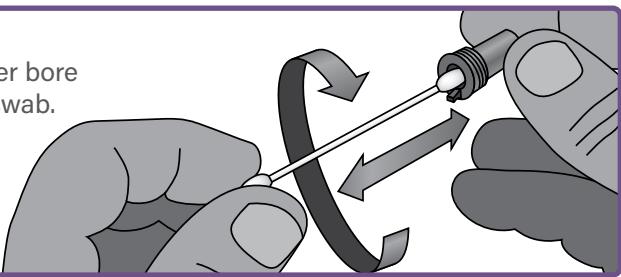
NOTE: Cleaning rod is too big to be used on receiver bores. A cotton swab must be used.

Previous Model



Current Model

Clean the receiver bore with the cotton swab.



Cleaning the bore is important for allowing the maximum power transfer from the piston while striking the back of the receiver and transmitting this force to the tip of the graver or setting tool.

5 CLEAN PISTON & SPRING

Lay out piston and spring on clean pad and wet with rubbing or denatured alcohol. Gently scrub with wet pad until clean.



! ALLOW ALL PARTS TO DRY COMPLETELY BEFORE REASSEMBLING.

6 CLEAN QC HOLDERS

Wipe down each QC holder with a pad and rubbing or denatured alcohol to remove debris.



7 LUBRICATE QC HOLDER BODY

APPLY SMALL AMOUNT OF SYNTHETIC GREASE TO FINGER.



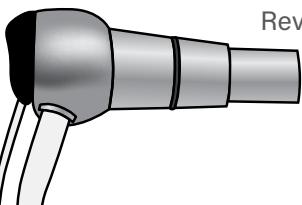
AVOID APPLYING TOO MUCH LUBRICANT. EXCESS WILL ATTRACT DEBRIS ONTO THE OUTSIDE OF THE QC HOLDER.



Rub synthetic lightweight lubricant on the QC holder body. This will keep the O-ring from drying out and cracking, and ensures the holder moves freely in the receiver.

8 REASSEMBLE HANDPIECE BODY

Reverse order of step 1.



ENSURE ALL PARTS ARE DRY BEFORE REASSEMBLY.

CLASS IS ALWAYS IN AT GRS UNIVERSITY!

Visit our YouTube channel for more information about handpiece cleaning and many other topics.



YouTube

TIPS • TRICKS • DEMOS • INDUSTRY PROFESSIONALS

GRS[®] UNIVERSITY

SEASON 3

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