



AUG 2022

DIGITAL ARCHIVE
EDITION

PRECISION ARMS WORKSHOP

AND THE AMERICAN GUNSMITH ARCHIVE

A TECHNICAL JOURNAL OF CRAFT, REPAIR & RESTORATION

08

ARCHIVE ISSUE NUMBER

INSIDE THE ARCHIVE

SPRINGFIELD ARMORY SA-35

NEW BANTAM CNC • SPUHR IDEAL CHASSIS SYSTEM • AIRGUN 'SMITHING • KIMBER CUSTOM II

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 224

DIGITAL ARCHIVE EDITION

Preserved for the bench.

This edition presents the original American Gunsmith editorial work in a modern, searchable layout while preserving its issue, author, and source-page history.

ABOUT THIS EDITION

The article text comes from the original issue and has been reflowed for legibility. Obsolete subscription, ordering, association-service, and house-advertising pages are not reproduced.

Original article images appear only where permission has been confirmed. All other image positions remain visibly reserved so approved art can be restored without rebuilding the issue.

Report corrections or rights information to editor@gunsmithmag.com.



AMERICAN GUNSMITH

DIGITAL ARCHIVE EDITION • AUGUST 2022

ISSUE RECORD

ORIGINAL DATE	August 2022
VOLUME	Archive volume not stated
ISSUE NUMBER	08
SOURCE ID	ag-4ef5c435e902de3e70133936

DIGITAL EDITION

PUBLICATION	American Gunsmith
EDITION	Digital Archive Edition
ARCHIVE STEWARD	Innovation Network LLC
CONTACT	editor@gunsmithmag.com

Editorial fidelity. Article titles, author attribution, issue relationships, source-page references, and article text remain bound to the archive corpus. Layout, covers, navigation, and conversion notes are newly produced for this edition. Historical statements remain part of the original editorial record.

IN THIS ISSUE

Contents

A complete guide to the searchable editorial work preserved from August 2022.

2 New Bantam CNC
AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 2

3 Spuhr Ideal Chassis System
STEPHANIE A. MARTZ • ORIGINAL PAGES 3-5

6 Airgun 'Smithing
GENE SALVINO • ORIGINAL PAGES 6-7

8 Kimber Custom II
MICHAEL PRIEGO • ORIGINAL PAGES 8-10

11 Springfield Armory SA-35
BRIAN R. SMITH • ORIGINAL PAGES 11-17

18 SIG Short Reset Trigger
ROBERT K. CAMPBELL • ORIGINAL PAGES 18-20

21 Seattle Engraving
CHARLIE BRIGGS • ORIGINAL PAGES 21-22

23 Reader Forum
AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 23-24

MACHINING

New Bantam CNC

BY AMERICAN GUNSMITH EDITORS AUGUST 2022

ORIGINAL PP. 2

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2531-P02-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2531-P02-F01

Bantam Tools (BantamTools.com, now has several tools in its accessory line that are beginner-friendly and empower users to expand the abilities of the Bantam Tools Desktop CNC Milling Machine to include 4th axis machining. The Bantam Tools Desktop CNC 4th Axis Accessory is designed to be a beginner-friendly accessory that expands machining capabilities. It's a gateway into 4th axis machining and a tool customers can use to grow their machining skills.

It makes complex parts more attainable and offers more machining options for 3D surfacing, as well as reduces machining complexity with parts that require machining on multiple sides. The new Bantam Tools Desktop CNC 4th Axis Accessory empowers users to turn their 3-axis Bantam Tools Desktop CNC Milling Machine into a 4-axis machine quickly and easily for \$499.

Education The Bantam Tools Desktop CNC 4th Axis Course is a self-paced class specifically designed for Bantam Tools Desktop CNC 4th Axis Accessory to help you expand your CNC skillset and the options an additional machining axis adds. Key components of the course includes how to install, calibrate, and uninstall the 4th Axis, with a demonstration of how to CAD/CAM and then machine a hex wrench handle.

Each course purchase includes a box of materials for the projects, including a flat end mill (1/8"), engraving bit (80°, 1/8"), ER-11 collet (1/8"), Delrin (3/4"-diameter x 5"), Bantam Tools Center-Finder Tool, and sandpaper. Additionally, you will use tools that come with the Bantam Tools Desktop CNC Milling Machine with 4th Axis.

The course is \$299. "It is awesome to be able to provide 4th axis machining with the Bantam Tools Desktop CNC 4th Axis Accessory," said Bre Pettis, CEO of Bantam Tools. "When milling a job that calls for multiple flips, index milling or continuous milling, this accessory is fully integrated with the latest model of the Bantam Tools Desktop CNC Milling Machine that's 4th Axis compatible and our intuitive Bantam Tools Milling Machine Software.

To get users up to speed, we are also offering the first Bantam Tools educational course that levels up 4th Axis skills. We developed this educational course specifically for this accessory to help users build their 4th axis machining skills and will have additional courses coming later this year."

MACHINING

Spuhr Ideal Chassis System

Details on Hakan Spuhr's rifle systems as revealed at SHOT Show.

BY STEPHANIE A. MARTZ AUGUST 2022

ORIGINAL PP. 3-5

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2532-P03-F01. Know the rights holder? Please ask them to contact us.
AG-3E70133936-A2532-P03-F01

Hakan Spuhr (Spuhr Webshop. com, contact information omitted in this digital edition) is known for his ability at high end gunsmithing, as shown in his Ideal Scope Mount System (ISMS), the Spuhr Interface, and now in his SICS—the Spuhr Ideal Chassis System. Machined from a single billet of 7000 series aircraft aluminum and already patented, this chassis is made for total modularity and stability.

Before we go ahead, just remember that everyone shoots differently—Americans, Swedes, competitive shooters, hunters—so different shooters will want different things in their chassis systems and stocks. Spuhr is trying to allow consumers to make the chassis theirs while using high end materials and engineering. Keep an open mind and allow yourself to look deeper into the innovation of the chassis rather than styles of shooting.

The Idea A quote from Hakan about the project, adjusted to proper English. “Two years ago my girlfriend and I got new Impact actions and she immediately ordered an Impact Chassis from there as well. I didn’t fancy what I saw; for my use I want a fast change Length of Pull (LOP). Different positions require different LOP. Actually not really different LOP but different length to scope.

Modern high magnified optics are really critical to where the eye is placed and most people’s take on this is a length adjustment change. LOP is not optimized for any one thing but a single setting that with some pain works for all positions. I like optimization! I don’t like compromise so my intention was to make one chassis only in manual machines for my gun. “My business partner heard about my plans and confiscated the project to become a company product. So here is the company product.

We just released it and started shipping it! So my idea with products is never to offer the same as competitors do as we would then fight over the same customers. The only weapon to win that fight is to lower prices. So with our designs we want to add more functions and features and in a more simple way than the competitors.” Features and Specs I’ll start with the materials used.

All materials in the Spuhr Ideal Chassis System (abbreviated as SICS and pronounced “six”) are 7075 aluminum alloy except for the forend which is 6082 aluminum alloy. Within the chassis are also bronze bushings which helps the chassis be shock and corrosion resistant. Any steel within the chassis, such as the hinge adjustment, is put through a hardening process to make it anticorrosive. The LOP has a max of 12.8" and is quick adjustable for two additions of two inches.

Adjustments are in 0.400" increments and can be preset to your minimum and maximum lengths, hence the main reason why Hakan wanted to make this chassis: To allow the shooter to change their length of pull, or length to scope as he puts it, during the course of fire in less than two seconds. Additionally, if you are wearing bulky kit, winter clothing, allowing your kid, wife, or smaller bodied person to use the chassis, this quick LOP adjustment allows you to lock in both of those settings.

Kind of like the seat of a car, lock in your distance from the wheel so your wife can freely move it, because we know that she will. Changing the LOP is as simple as punching the two bars below the stock together and moving the butt pad to where you want it. The two small bars are designed for natural curl of the finger and thumb angle with grooves cut in for grip. The SICS also gives us the option of adding spacers or removing the butt pad if the 12.8+2" isn’t enough.

Adding these spacers will be absolutely play free. Of course, the SICS has an adjustable butt pad and cheek piece. The SICS butt pad uses a Limb Saver Air Tech recoil pad, which can be bought for all types of chassis and even wood stocks. With an adjustment span of 1.18" and totally toolless to change the height of the recoil pad, simply press the locking button and slide the butt pad assembly

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2532-P04-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2532-P04-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2532-P04-F02. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2532-P04-F02

The bag rider allows for additional accessories to be mounted including weights. Aftermarket bag riders can also be installed, until a comfortable is found. The rubberized cheek piece allows users to adjust for height and lengthwise position. To adjust for height, turn the wing nut that is located on the side of the cheek piece slide. For length adjustment use a Torx T20 key to loosen and tighten once your preferred position is found.

The middle/receiver section is designed to be as stiff as possible and reinforce your action stiffness to increase accuracy potential. With this, the true accuracy of the chassis will only be known by shooting it. I am hoping to write another article that includes proof of the abilities of the chassis used with a high-end action, barrel, and optic. In time we will see more shooters show proof of this as well.

The SICS accepts any Accuracy International Chassis System (AICS) magazine, including AICSpatterned Magpul PMags. The SICS forend is available in three different length configurations and comes separate, attached with nine screws.

Each has an integrated Arca-Swiss rail machined in with added Spuhr detents. The fact that the Arca is machined in is huge. Considering with the weight and torque put on the system from this area, this results in less things to come loose.

As far as the weight system, it is made by Spuhr and will be Spuhr interface compatible. These weights will be able to be mounted on both the forend and the bag rider to help with balance of the gun. The stock assembly includes a fixed height bag rider which features Spuhr interfaces if the consumer wants to add accessories to the bottom of it. The bag rider can also be changed out for other aftermarket bag riders if the shooter chooses. The Spuhr weight system will be able to be mounted to this bag rider.

The SICS uses a proprietary pistol grip, designed to comfortably fit a wide range of hand sizes without creating tension during prolonged trigger engagement. The pistol grip is rubberized for a non-slip grip and can also be adjusted for LOP. It can be changed to most AR style grips if wanted.

The grip is overmolded and made out of Polyamid, the same polyamide polymer used to make Glock frames.

Fun fact, after doing some research, it sounds like this material is made with UV stabilized nylon 66, which Remington used to make their Nylon 66 22 LR rimfire rifle back in 1959. A folding stock is a great way to enable easier packing your rifle, whether it's for packing up a mountain or traveling, and getting the stock out of the way for cleaning. Folding to the right, the SICS includes a hinge that is made with bronze bushings and an adjustable steel locking system ensuring that there is no play.

The folding stock also allows you to do a barrel install without disassembling the chassis from the barrel and action. Hakan shows this in a video and ended up changing a barrel within 80 seconds. Weighing in at 5.1 pounds with a 16-inch forend, the SICS is currently available for the Remington Short Action, Tikka Long Action, and in the future will be available in Remington Long Action. Spuhr will also be releasing a left hand variation of the chassis sometime in the future.

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2532-P05-F01. Know the rights holder? Please ask them to contact us.
AG-3E70133936-A2532-P05-F01

It also features the Spuhr Interface System allowing shooters to attach DOPE cards or shot timers onto the receiver instead of the scope or a 1913 rail on the action.

The Spuhr Interface “Instead of fitting our products with meters of Picatinny rails, adding a lot of space and undesired weight while making them less comfortable to hold onto, we decided to make a small interface that has no weight—in fact, it has a negative weight as we remove material to create the interface,” Hakan says. “The Spuhr Interface consists of a female and a male interface surface, featuring circular grooves and ridges mating around an M4 screw.

This interface design does not have any sharp edges and has the best repeatability on the market.” While this chassis ships with a short Picatinny Gen2 rail section, the Spuhr Interface is not to be side eyed and Spuhr offers many accessories that accept his interface. Personal Takeaways During my time at SHOT I visited Mile High Shooting and took some time to talk with Hakan about his chassis. I came into this with both a precision shooter and gunsmith mindset.

As we were talking, Hakan took a punch and bench block and disassembled some portions of his chassis in front of me. To me, that showed how knowledgeable and passionate he was about the system he created in his own shop. A couple things really

stood out to me as a precision shooter. One being the ridges machined into the front of the magazine well. This comes into play when using a position on a barricade that is only supported by a bag sitting on that barricade.

Pushing the chassis into the bag helps with recoil management, stability, and working the bolt. These added ridges would help the chassis not slip on that bag. The integrated Arca rail is a large plus for this chassis system. Many chassis systems allow you to attach the Arca which means there are more points to come loose with the stress of the bipod. Spuhr’s Arca is machined into the chassis as one piece so there is no way for it to loosen.

The SICS Arca is special as it is machined for Spuhr’s proprietary Arca grabber but can be used with any Arca-compatible system. The straight pistol grip allows your finger to be placed on the trigger in the way that you want it. An angled grip can sometimes cause your finger to no longer have a straight rearward pull or can cause your wrist to be curved or unnaturally rested. There are interface points on the side of the magwell on the chassis.

When asked about this, Hakan mentioned being able to attach DOPE cards such as Hawk Hill Data Holders cards or a timer. That is a fantastic addition to this chassis. Many times shooters are attaching their cards off the 1913 rail on the action or off

of their scopes. Being able to attach these accessories to a strong point and away from the scope is great. An accessory that was very impressive was the Spuhr proprietary Arca rail grabber.

It acts as the attachment point from the bipod to the SICS and has quick adjustment with the press of a button. The special thing about this rail grabber is it has added detents to seat inside the rippled Arca rail. This adds additional strength when adding torque to the bipod. The chassis includes many bronze bushings for strength and resistance to shock and corrosion which is how the design of the SICS ensures there is no play between pieces.

For American customers it is recommended to use Mile High Shooting (MileHighShooting.com), for many Spuhr products, including the SICS. Preorders for this system started late 2021 and are now available to purchase but it will still take time to see North Americans heavily run this system to get direct feedback from both the hunting and competitive shooting community. With easily-found information all over the Internet as well as many visitors during SHOT, I’ve seen a large amount of curiosity and interest.

As far as purchasing extra forends and additional accessories, I would be patient as this is still a newer chassis system that does need to be shipped from overseas. AG

HISTORY

Airgun ‘Smithing

Here are the top tools that experts use to maintain spring-powered airguns.

BY GENE SALVINO AUGUST 2022

ORIGINAL PP. 6-7

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2533-P06-F01. Know the rights holder? Please ask them to contact us.
AG-3E70133936-A2533-P06-F01

Airguns have been around since the late 16th century and have been improved upon as technology and designs have advanced. Nowadays there are many different airgun power plants that range from beginner-level to world competition. The most common has been the spring-powered (often referred to as “springers”). A springer is an airgun that is operated by a spring-piston that is housed within a compression chamber. This is located separately from the gun’s barrel.

Unlike some of the other power plants, the spring is cocked by the shooter themselves. A lever cocking mechanism pulls the piston rearwards and compresses the spring, cocking the gun, which sends a pellet downrange at the pull of a trigger. The spring-powered airgun has stood the test of time due to the ease of maintaining and repairing the firearm anytime there is an issue.

If you have a need to repair a springer, make your life a little easier by reviewing some of the tools that help. It is the perfect tool for maintaining spring-powered airgun. service the spring compressor and pins as well as the best lubrication to keep your rifle operating smoothly. Proceed cautiously as the springs are dangerous. Keep

in mind they will come apart easily due to a broken or just worn spring; reassembly is another matter.

In most cases you are better off to have a professional service the rifle so it is cleaned, re-lubed correctly, and critical wear parts inspected for wear. With the better materials in modern seals and advanced metallurgy of new springs, the parts will last longer between repairs. Springer Tools If you are going to attempt to service any spring-powered air rifle a spring compressor is a must. In spring guns some models will only have about 1-2 inches of preload but a compressor is still useful.

This can be as simple as a carpenter’s clamp for guns without much preload or something more professional-grade such as the Air Venturi Rail Lock Compressor available at Pyramyd Air (PyramydAir.com). The main advantage of this unit is it fits many models of guns and it can be put in your toolbox/range bag. I also have two bench mounted compressors to allow working with both hands safely.

The first one I use is made out of Uni-Strut with a screw jack and it is adjustable for everything from a Webley Patriot down to a Diana air pistol. The other compressor is a factory Weihrauch tool; this compressor al-

lows you to push in the mainspring and allows you to thread the end cap at the same time. Next up are pins. We’ll cover the basic types used in airguns and the tools you should have to remove/ install them correctly. Pins are used to connect two pieces of the rifle together.

There are three types of pins used in airguns: straight, roll, and splined pins. When dealing with these pins the two types of fit are slip fit or interference fit depending upon the use in the mechanism. A standard pin punch and hammer will be needed for the interference fit. Usually, a slip fit can just be pushed out. The straight pin is the most common. Every airgun made has these somewhere and will mostly be found in the trigger mechanisms.

These are the easiest to remove and replace, requiring just some elbow grease to push them out and a couple of minutes replacing. Next is the roll pin, also known as a spring pin. This pin is split longitudinally and is used to hold two or more parts together that do not need to rotate. The force of the spring digs into the hole to hold. These will not come out easily and requires a ball peen hammer used with a good punch or, better yet, an actual roll pin punch that has a ball in its face to keep it centered

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2533-P07-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2533-P07-F01

and not allow the pin to collapse. Benjamin pump mechanisms use this type of pin as well as scope stop pins in mounts. Last up are splined pins. Splines are in one end of the pin for retention and stability. Upon reinsertion, you have to make sure the splines go into the same side they came out of. They are used to retain end caps and trigger modules in Spanish guns such as from Gamo and Beeman. Having a good hammer is necessary if you do a lot of pin work.

The Brownells hammer is a great option due to it being non-marring and the ability to flip to the brass side to drive out pins. My hammer is well used and has been refaced many times. Be very careful when removing tight pins. Make sure the work is secure and solid to avoid denting or marring the finish of the gun. I have seen way too many damaged guns from amateurish repair attempts. Remember to wear your safety glasses.

Pyramyd Air Products and Services
Pyramyd Air offers a full line of products, accessories, tools, services, and gunsmithing for air guns. Contact at: Web: PyramydAir.com Email: Address: 5135 Naiman Parkway Solon OH 44139
Lubrication It seems like an easy thing to do but so many airgunners overlook lubrication as a crucial part of maintenance. In a

spring gun the grease does two very important things. First, it provides barrier lubrication to allow easy cocking and consistent velocities.

Second, lube dampens vibrations on the mainspring guide to prevent unwanted oscillation and vibration. Grease must have good barrier lubrication additives and tackifiers to help it stay put and dampen the spring vibrations. Air Venturi has done all the homework for us with their Tune-in-a-Tube lubricant. I have seen many spring guns come into my shop lubed with products such as moly, gear oil, or just plain oil, and these guns sound like a three dollar toy gun.

Tune-in- Tube is an ideal option that assures proper springer function, lubrication, and a smooth shot cycle. The syringe packaging allows greasing the mainspring and guide by applying it through the cocking lever slot. This product is a lifesaver and is used every day at Pyramyd Air's repair shop. Don't forget about oil as it is just as important. Ballistol is an ideal choice being a mineral-based oil that is safe on wood, leather, and any firearm's finish.

Ballistol was developed in Germany in 1905 by the Klever Company. The German Army wanted one oil to do lock, stock, and barrel and this is what they used. There are two

major advantages of Ballistol. First, it has a neutral pH so it neutralizes acids and corrosive residues leftover from blackpowder or corrosive primers used in old military ammunition. The second is Ballistol will not resinify, which is great as resinification is bad in the intricate mechanisms of a firearm or airgun.

A gun oiled with Ballistol can be trusted to function even after longterm storage. As airgunners, Ballistol can save old leather seals that dry out and cause loss of compression. It is also a great oil to preserve your bluing and protect the stock. You should always have a cleaning kit and oil in your range or hunting bag and your fellow shooters will appreciate it when a little bit gets their gun going again. We looked at some great tools to help maintain and repair springpowered airguns.

This isn't a comprehensive list and there are always little gremlins that take time and experience to sort out but it handles the big issues. Before starting repairs, talk to a professional and get a second opinion before delving into do-it-yourself work. Springs and pins can be very dangerous, especially without the proper tools and knowledge. This will help you work on spring guns for yourself and your customers. Work smarter, not harder, and safety first! AG

PEOPLE & COMPANIES

Kimber Custom II

Addressing issues with a Kimber Custom II 1911 handgun.

BY MICHAEL PRIEGO AUGUST 2022

ORIGINAL PP. 8-10

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2534-P08-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2534-P08-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2534-P08-F02. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2534-P08-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2534-P08-F03. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2534-P08-F03

I recently had a customer bring in a Kimber Custom II 1911 chambered in 45 Automatic Colt Pistol to examine. This pistol was having issues with light strikes on the primer during the firing operation. During the chambering operation the slide moved forward but when the trigger was pulled, the hammer would strike the firing pin, forcing it to make contact with the round seated in chamber.

Most issues with light strikes can create bigger issues that can lead to the primer to being delayed and firing the round without a moment's notice. Light strikes can be caused by a broken firing pin or spring, massive build up and/or hardened deposits that slow the firing pin momentum, or any other re-

stricted movement of the firing pin. To get a good look at the firing pin, clear the pistol and remove the slide from the frame. Remove the slide stop pin holding the slide to the frame.

Move the slide to the rear and press the rounded end of the pin at the same time the slide is moving. Once the hammer is in the second position, push on the rear end of the take down pin to rise it above the frame. Once the pin is lifted, place in a small plastic pry bar to avoid scratching. Center As a gunsmith, avoid creating any new damage or marks to a firearm when it is in your possession. reward so that the slide stop pin will come out of its groove and be slightly lifted.

Use a soft plastic pry bar to lift it up and release the slide and allow it to be removed. Now that the slide is off, remove the back plate that is holding the firing pin in place within the channel on the slide by depressing the firing pin release. A note on this release. Kimber Series II pistols use a firing pin block that is similar to the Swartz safety developed for Colt before World War II.

While similar to the later Series 80 Colt firing pin block, this design is actuated by the grip safety instead of the trigger. After depressing this release manually with a punch, we can also depress the rear end of the firing pin and

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2534-P09-F01. Know the rights holder? Please ask them to contact us.
AG-3E70133936-A2534-P09-F01

Original caption: Top: When the Series II firing pin block is depressed again, the firing pin can be released and removed from the slide. We can also see that the plate that holds the firing pin has some build up and can be a good indicator of what could be jamming the firing pin spring. A closer view shows deformation near the lower end of the spring. This spring will be replaced and the rest of the components properly cleaned. firing pin channel using a carbon cleaner and degreaser did the trick.

While similar to the later Series 80 Colt firing pin block, this design is actuated by the grip safety instead of the trigger. Using a punch, slide the plate out of the grooves and the firing pin will still be in place. compress it so that it is under the firing pin plate. Start sliding the plate towards the open end of the slide so that it will release the firing pin. Once the plate is removed, depress the firing pin once again and depress the firing pin again and the firing pin will be released.

Remove the firing pin and inspect the channel as well as the spring to ensure that the area is clear before testing functioning. After examining the firing pin and spring I noticed that the spring had some slight deformation. While it can be readily replaced, this indicates there is build up within the channel that is jamming the spring during the firing process. A more thorough inspection of the channel revealed a usual amount of buildup but that could still be causing issues.

The firing pin itself seemed to be in a good condition and simply needed cleaning. For this repair a thorough inspection, replacement of the firing pin spring, and deep cleaning of the Hoppe's Black Cleaner helps get a deep clean and removes hard build up of carbon and fouling. My favorite lube, Hoppe's Black Lubricant, helps reduce friction and massive amounts of wear over time.

Once the spring was changed, I applied a small amount of carbon cleaner to a cotton swab and applied it throughout the firing pin channel. I also used a small scrub brush to break up any hard build up that could be in the surrounding edges of the where the firing pin exits. Once the scrubbing was complete, I used another application with degreaser to remove anything that was loosened so that it didn't create any issues for

This could be the cause of the spring damage and the cause of the light strikes. Above center: The new spring will help provide a firm depression momentum for the firing pin when striking the primer. Most of the replacement items I order are from the original manufacturer. Each new swab shows the progress of cleaning. the new spring once everything was put back together. With the channel completely cleaned, I added a bit of quality lubricant to ease the friction and limit the wear to as minimal as possible.

After reassembly, I conducted a function test. Using a snap cap, I tested the pistol's function and feeding to ensure it worked. Using a fired casing, I dry fired to ensure that the primer was Below and now being struck sufficiently hard. The depth of the strike on the cap demonstrated that the light strike issue had been resolved. AG

ORIGINAL SOURCE PAGE

10

HISTORY

Springfield Armory SA-35

Springfield Armory's modern take on the classic Browning High Power design.

BY BRIAN R. SMITH AUGUST 2022

ORIGINAL PP. 11-17



Right: The Springfield Armory SA-35 is a faithful clone of the venerable Browning Hi-Power, originally the Fabrique Nationale Grande Puissance (FN High Power). FN and Browning varied the spelling over the years as did any number of the pistol's variants. Springfield avoids these names, referring to their SA-35 as an improved version of John Browning's P-35. I'll stick with "High Power" here. The SA-35 has a thick, uniform phosphate finish and practical white dot front and U notch rear sights, both dovetailed and adjustable for windage. The thin walnut-appearing grip panels have aggressive diamond checkering. Above: The SA-35 also features the distinctive High Power slide with old school slanted rear grip serrations only, a pivoting external extractor, and a round hammer to avoid "hammer bite" of the web of the strong hand.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED



Right: The Springfield Armory SA-35 is a faithful clone of the venerable Browning Hi-Power, originally the Fabrique Nationale Grande Puissance (FN High Power). FN and Browning varied the spelling over the years as did any number of the pistol's variants. Springfield avoids these names, referring to their SA-35 as an improved version of John Browning's P-35. I'll stick with "High Power" here. The SA-35 has a thick, uniform phosphate finish and practical white dot front and U notch rear sights, both dovetailed and adjustable for windage. The thin walnut-appearing grip panels have aggressive diamond checkering. Above: The SA-35 also features the distinctive High Power slide with old school slanted rear grip serrations only, a pivoting external extractor, and a round hammer to avoid "hammer bite" of the web of the strong hand.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED

In the history of metallic cartridge handguns, there have been numerous iconic examples that had a significant, lasting influence on future firearm designs—the Colt single-action revolver, the Mauser C96 Broomhandle, the Smith & Wesson Hand Ejector revolver, the Colt 1903 Pocket Automatic, the Colt 1911, the Walther PP, and the Glock are several of these.

But one truly innovative pistol design incorporated so many advanced features that it set the stage in one way or another for most everything that followed: the Browning High Power, also known as the GP-35 or P-35. The Belgium-based Fabrique Nationale des Armes De Guerre responded to a French military requirement for a new service pistol, the Grand Rendement (High Output). FN began with another of the gifted John M. Browning's designs that he was unable to complete due to his passing in 1929.

The project remained a priority for FN and its completion was assigned to John Browning's principal understudy, Dieudonné Saive. Monsieur Saive completed the Pistol Browning Grande Puissance (Browning High Power Pistol, BHP) in 1935 in response to a request from the French government for a pistol to meet the following requirements: It

must be compact, have a magazine capacity of at least 10 rounds, have a magazine disconnect, an external hammer, and a positive-engaging safety that blocked the sear.

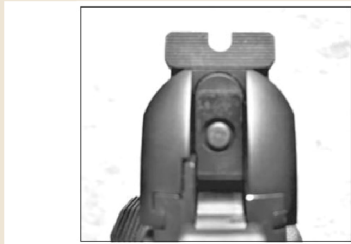
In addition, FN and Browning varied the spelling over the years as did any number of the pistol's variants. Springfield avoids these names, referring to their SA-35 as an improved version of John Browning's P-35. I'll stick with "High Power" here. The SA-35 has a thick, uniform phosphate finish and practical white dot front and U notch rear sights, both dovetailed and adjustable for windage.

The thin walnut-appearing grip panels have aggressive diamond checkering. In addition, the pistol had to be robust and simple to disassemble and reassemble, and its cartridge must be lethal at 50 meters. The French eventually rejected the FN proposal and settled on an indigenous design, but the BHP was all that was required and more. The BHP featured all-steel construction with sections of the frame being intentionally as thin as possible to minimize dimensions and save weight.

This design concept is obvious in the slim, thin grip of the BHP frame, itself sculpted to fit particularly medium and small hands as well as larger mitts. The frame's dust cover is thin, as is the profile of the slide surrounding the front of the recoil spring.

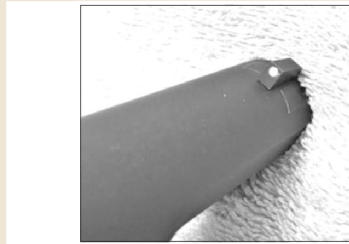
SPRINGFIELD ARMORY SA-35 CONTINUED

ORIGINAL PAGE 12



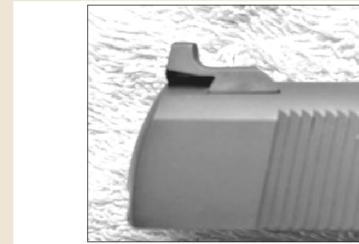
Above left: The large white dot sight isn't fiber optic or tritium, but is nonetheless very visible in the Heinie Ledge-style U-notch rear sight. The dovetail dimensions are not the same as those of a Browning Mark III High Power, but they may be dimensionally identical with sights of other Springfield Armory pistols. Above right: The Heinie Ledge-style rear sight has a generously-dimensioned U-notch that is highly practical for fast target acquisition when coupled with the large white dot front sight of the SA-35.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED



Above left: The large white dot sight isn't fiber optic or tritium, but is nonetheless very visible in the Heinie Ledge-style U-notch rear sight. The dovetail dimensions are not the same as those of a Browning Mark III High Power, but they may be dimensionally identical with sights of other Springfield Armory pistols. Above right: The Heinie Ledge-style rear sight has a generously-dimensioned U-notch that is highly practical for fast target acquisition when coupled with the large white dot front sight of the SA-35.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED



Below: The Heinie Ledge-style rear sight features a sharp 90 degree angle or "ledge" with which the slide can be racked using one hand if necessary.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED

The dovetail dimensions are not the same as those of a Browning Mark III High Power, but they may be dimensionally identical with sights of other Springfield Armory pistols. The BHP's short-recoil design is simple, featuring an angled notch in the barrel lug that together with a wedge-shaped crossbar in the frame functions as the cam to separate the two lugs atop the barrel from mating recesses in the slide. This is similar to that of the Browning-designed Colt 1911 but eliminates the swinging link of the 1911.

This linkless angled notch in the barrel lug has been widely copied in most short-recoil pistol designs ever since. One exception that comes to mind is the design used by Beretta and Walther in their centerfire pistol designs featuring tilting locking lugs. A further cost saving simplification of the High Power was the elimination of a separate barrel bushing at the front of the slide, another departure that Browning made from the 1911.

A number of more modern short-recoil pistols copied the BHP in that they do not employ a separate barrel bushing to provide for the necessary fit between the front of the barrel and the slide, most notably Glocks as one example. The fire control group was another simplification compared to Browning's 1911.

Whereas the 1911 fire control parts are fully contained in the frame, the BHP makes use of a thin, pivoting sear lever in the slide to transfer force from a vertical lever at the rear of the trigger to the front edge of the sear in the frame front of the hammer at the rear of the magazine well.

Because the action of the fire control group parts relied on precise choreography of components in both the frame and the slide, there was considerable hand-fitting of these components prior to the development of computer-aided manufacturing techniques and equipment. In the original BHP design, the sear lever in the slide was held in place by a precision-fit oval insert with two pins, one of which was the sear lever pivot.

The external surface of this sear lever keeper was part of the serrated grip area; it was a very costly part to manufacture and fit. Later BHPs feature a simple horizontally-oriented solid or roll pin in the slide upon which the sear lever pivots. Two sear levers were used, a simple, straight, toothpick-like sear lever on earlier BHPs and a sear lever with a wide "paddle" on the rear end that served as a firing pin block safety. Pulling the trigger tilted the paddle away from a shoulder on the firing pin.

Early Browning High Power pistols employed an internal extractor held in place by the firing pin stop, essentially the same as that found in the 1911. Later versions of the BHP incorporated a simplified external extractor, coil spring actuated and pivoting on a vertical solid or roll pin in the slide. When one examines the Browning High Power in both its component parts and as-assembled, it can readily be seen just how many of the High Power's features inspired handgun designs that followed.

The BHP was as successful as it was revolutionary. It was manufactured in Belgium, with licensed copies produced in Great Britain and Canada, the latter where the name was shortened to "Hi-Power." The Nazis occupied Belgium during WWII and adopted the BHP as the "Pistole 640(b)." Unlicensed copies have been made in Hungary, Israel, India, Argentina, and lately, Turkey. High Powers have no doubt been handmade in the Khyber Pass, because everything short of nuclear weapons have been copied there.

Dozens of countries around the world have employed the High Power pistol in military forces and police units. The BHP "fought" on both sides of the Falklands Conflict, along with another FN design, the FAL/L1A1. In the late 1980s due to tax reasons, FN began shipping High Power

SPRINGFIELD ARMOY SA-35 CONTINUED

ORIGINAL PAGE 13



Left: The SA-35 High Power disassembles exactly as its namesake; withdraw the magazine, pull the slide to the rear, and engage the safety hook in the forward slide notch. Then, push on the slide stop pivot from the right side of the pistol to start the slide stop out of position. Remove the slide stop, pull back on the slide slightly to disengage the safety, ease the slide assembly off the frame, disconnect the rear of the recoil spring guide from the barrel lug, and lift out the barrel.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED



Left: The SA-35 employs the standard Browning High Power slanted barrel camming notch that's been copied by most of short-recoil pistols made since the BHP was introduced in 1935. The notch cams against a wedge-shaped bar in the frame directly above the trigger. The upper surface of the camming bar locks the barrel lugs engaged with the mating slide lug recesses, and the front of the camming bar contacts the lower surface of the barrel lug's cam notch to pull the barrel down and disengage the locking lugs. It accomplishes the same function as the link in a 1911 barrel lug but less expensively.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED

components to a plant in Portugal for completion, assembly, and finishing. These were the Mark II and Mark III BHPs which feature a baked-on polymer coating, black plastic grips with a slight thumb rest, and "Made in Belgium—Assembled in Portugal" rollmarked in the right side of the slide.

Production of these basic models and those with target sights, wooden grips, and competition models were produced until FN decided to end the party after 73 years with the 2008 announcement that the BHP would cease production and sale. As classic as the BHP was, it was an all-steel, high-capacity, single-action, hammer-actuated pistol in a polymer/alloy and steel, high-capacity, double-action/SAO striker-fired world. In other words, a dinosaur. And at \$1,100+ MSRP, an uncompetitively expensive one.

As has happened in the firearms field many times in the past, as soon as a particular model of handgun or rifle is taken out of production, suddenly the prices of remaining new old stock and used examples rise as demand shoots up. Recall as examples the Smith & Wesson 696 five-shot 44 Special, the Ruger 96 lever action carbine,

and the Winchester Model 94. Nature and economic trade abhors a vacuum, and in 2021 the High Power was reintroduced by Springfield Armory as the SA-35.

As meets the eye, the SA-35 appears to be 100% High Power with a thick, uniform phosphate finish and custom grips. All external parts appear to be exact clones of those from Belgian-made BHPs. Looking closer, some differences are apparent. The sights are dovetailed, as were those of the Mark II and Mark III FN Browning BHPs, but the dovetail size is different between them. The notch cams against a wedge-shaped bar in the frame directly above the trigger.

The upper surface of the camming bar locks the barrel lugs engaged with the mating slide lug recesses, and the front of the camming bar contacts the lower surface of the barrel lug's cam notch to pull the barrel down and disengage the locking lugs. It accomplishes the same function as the link in a 1911 barrel lug but less expensively. Then, push on the slide stop pivot from the right side of the pistol to start the slide stop out of position.

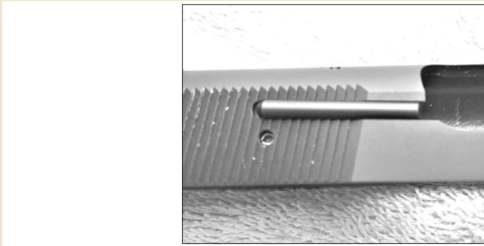
Remove the slide stop, pull back on the slide slightly to disengage the safety, ease the slide assembly off the frame, disconnect the rear of the recoil spring guide from the barrel lug, and lift out the barrel. The SA-35 and those of a Browning Mark III. Perhaps the SA-35 sights use dovetail dimensions that are the same as those of other Springfield Armory pistols, but as I did not have access to those pistols for this article, I could not confirm the conjecture.

The SA-35's front sight is a white dot and the rear is a Heinie Ledge-style U-notch with a glare-reducing serrated rear face and a vertical front face to facilitate one-hand slide racking if necessary. The sight picture is highly visible and would lend itself well to competition or serious use.

The slide is pure High Power, with rear grip serrations, dual-level lightening cuts at the muzzle end, two notches for the safety lever (the rear most notch for operating the safety in use, the front for disassembly), the pivoting external extractor, and the distinctive, small, oval-ish ejection port on the right side. And as mentioned, the business end of the SA-35 is free of a separate barrel bushing.

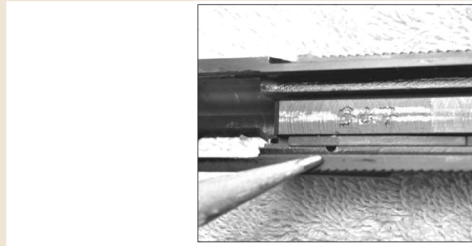
SPRINGFIELD ARMOY SA-35 CONTINUED

ORIGINAL PAGE 14



Above left: The No. 2 pencil points to the hole in the slide for the external extractor pivot pin and the long toothpick-like sear lever that partially covers that hole and pin. The sear lever is the older type without a wide paddle at the rear end, a giveaway that the SA-35 does not have a firing pin stop safety. Above right: The SA-35 is equipped with a postwar style High Power external extractor that is common to most semiautomatic pistol designs since WWII. It is retained by a vertical pin in the slide, and force is applied to the rear of the extractor by a recessed coil spring. Modern pistols either use this design or an external extractor which pivots around a post and is loaded by spring and pin located longitudinally in the frame.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED



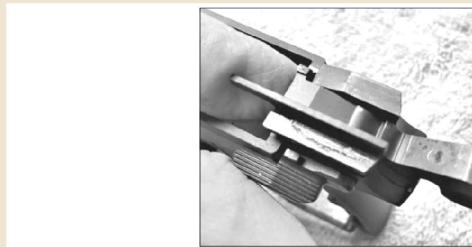
Above left: The No. 2 pencil points to the hole in the slide for the external extractor pivot pin and the long toothpick-like sear lever that partially covers that hole and pin. The sear lever is the older type without a wide paddle at the rear end, a giveaway that the SA-35 does not have a firing pin stop safety. Above right: The SA-35 is equipped with a postwar style High Power external extractor that is common to most semiautomatic pistol designs since WWII. It is retained by a vertical pin in the slide, and force is applied to the rear of the extractor by a recessed coil spring. Modern pistols either use this design or an external extractor which pivots around a post and is loaded by spring and pin located longitudinally in the frame.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED



Below left: The SA-35 trigger group is visible beneath the hardened camming wedge block, and the trigger assembly and reset spring are pure, original BHP design. The same reset spring concept can be found in Beretta and other pistols. Below right: The sear above the ejector and to the rear of the finger is engaging the sear notch in the hammer. The rear

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED



Below left: The SA-35 trigger group is visible beneath the hardened camming wedge block, and the trigger assembly and reset spring are pure, original BHP design. The same reset spring concept can be found in Beretta and other pistols. Below right: The sear above the ejector and to the rear of the finger is engaging the sear notch in the hammer. The rear

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED

2 pencil points to the hole in the slide for the external extractor pivot pin and the long toothpick-like sear lever that partially covers that hole and pin. The sear lever is the older type without a wide paddle at the rear end, a giveaway that the SA-35 does not have a firing pin stop safety. It is retained by a vertical pin in the slide, and force is applied to the rear of the extractor by a recessed coil spring.

Modern pistols either use this design or an external extractor which pivots around a post and is loaded by spring and pin located longitudinally in the frame. The grips appear to be walnut or walnut-appearing hardwood, thin in construction and diamond checkered for an aggressive feel and excellent hand traction in any condition. The frame in the grip area is true to BHP dimensions in that standard or aftermarket High Power grips fit properly.

The safety lever on the SA-35 is generously long; original BHPs had very short button-style safety levers that were difficult to ma-

nipulate. Not so with the Springfield SA-35, which is operated with ease, and the safety lever is a perfect platform to support the right thumb during shooting, in my opinion. However, one criticism of the SA-35 is that the safety is right-hand only; there's no lever on the right side of the frame for left-handed shooters.

The same reset spring concept can be found in Beretta and other pistols. The rear The bottom of the grip has been improved with a generous beveling of the magazine well. Keep in mind that the frame sectional thickness in the grip/magwell area is intentionally thin by design, but the length of the SA-35's mag well bevel is fairly wide and readily facilitates insertion of the tapered top of the double-column, single-feed magazine.

While on the subject of the magazine, the one supplied with the SA-35 is stamped with the Springfield Armory logo and is made by

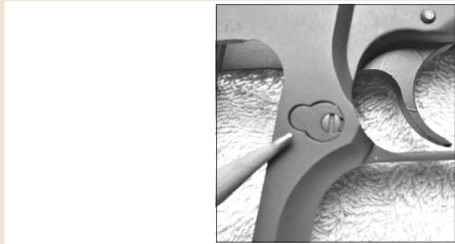
Mec-Gar. Most notably, it has a 15-round capacity. Mec-Gar magazines for the High Power have been available for some time.

The increased capacity is realized by a redesign of the magazine follower, effectively removing the two projections on the bottom of the standard 13 round magazine follower and hollowing it out so that the top of the magazine spring fits inside the follower, creating enough space for two more rounds inside the 15-round version of the magazine.

Natuend of the sear lever has a curved pad that engages the small rectangular protrusion at the forward right end of the sear, pushing down on the sear to raise the rear from contact with the sear notch in the hammer. This is the distinctive, classic BHP hammer and sear design, and parts from the author's Belgianmade and Portugal-assembled Mark III fit and functioned in the SA-35.

SPRINGFIELD ARMOY SA-35 CONTINUED

ORIGINAL PAGE 15



Left: The magazine release is classic BHP, taken directly from the Browning-designed 1911. If it works, don't fix it!

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED

rally, the SA-35 follower is simply molded hollow to accomplish this and is marked as being a Mec-Gar inside the follower recess. The magazine bodies are identical between "Made in Italy" FN Browning and Mec-Gar/Springfield units. There are subtle differences between the angle of the magazine spring coils, but the wire diameter is 0.048" on both FN Browning and SA-35 magazine springs. Internally, the biggest difference in the SA-35 compared to BHPs is in the barrel.

The SA-35 uses stainless steel as the barrel material and it is polished and left in-the-white. Springfield Armory says that modifications have been made to the feed ramp to facilitate feeding of ammunition with a variety of modern expanding bullet designs. Another difference between the SA-35 and later Browning High Power pistols is the lack of a firing pin block safety feature in the Springfield. If it works, don't fix it! Armory product.

In other words, the SA-35 is true to earlier BHP designs using a toothpick-like sear lever without a firing pin block "paddle" at the rear end. This no doubt contributes to the lack of creep on take up and the crisp break of the SA-35 trigger. I had to do considerable polishing of fire control bits in my own and customer BHP Mark III pistols to get those triggers as nice as the SA-35 trigger has out of the box. A third difference is the SA-35 has no magazine safety.

Most BHPs except for some made under Nazi occupation during WWII had a magazine safety consisting of a springloaded

plunger that would contact the front wall of the magazine. Used BHP magazines will have an indicating square or rectangular area on the front wall where the finish is worn from contact with the magazine safety plunger pad. Magazine safety components increased friction in the trigger group and fire control parts train, increasing trigger pull force and making trigger feel worse.

In my SA-35 example, sans firing pin block safety and magazine safety, the trigger pull out of the box was a cleanbreaking five pounds, four ounces. The telltale for a High Power magazine safety is a cross pin in the body of the trigger behind the trigger bow and visible in the trigger guard opening in the frame.

Many gunsmiths and BHP owners who removed the magazine safety would usually reinstall the cross pin in the trigger to prevent loss, and the plunger and spring would go in a tiny bag; which most of the time gets lost itself, truth be told. 2 shows that the SA-35 is produced without a magazine release. If present, the pin retained the slotted shaft of a spring-loaded plunger that made contact with the magazine and allowed the trigger to rotate to the rear, tripping the sear.

The recoil spring of the SA-35 is about 5/8" longer than that which was supplied with my BHP Mark III, but it is recognized that the 30-year-old Mark III recoil spring could have taken a bit of a set, having been assembled for all that time. I did notice that the SA-35 recoil spring buckled downward



Left: The absence of a cross pin in the area of the trigger indicated by the No. 2 shows that the SA-35 is produced without a magazine release. If present, the pin retained the slotted shaft of a spring-loaded plunger that made contact with the magazine and allowed the trigger to rotate to the rear, tripping the sear.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED

when the slide was removed from the frame. Not so with the Mark III's recoil spring. A check of the wire diameter showed the SA-35 spring was 0.042" and the BHP Mark III spring was a thicker 0.045".

Presumably the slightly larger diameter of the Mark III spring helped to keep it aligned with the recoil spring guide, but it being shorter in length could also have helped. The remaining internal bits are all pure BHP—trigger and its vertical lever, trigger reset spring, axis pin, sear lever and pin, sear and pin, flat sheet metal sear spring, hammer, mainspring and its strut, and strut nut, etc.

One of my objectives of an examination of the SA-35 was to take a "parts is parts" approach and try the fit of parts from the Browning High Power Mark III in the SA-35, and install SA-35 parts in the Mark III to determine how much interchangeability exists between a 30-year-old Belgian/Portuguese High Power and the current Turkish-sourced parts of the SA-35. In most cases I did not try one part at a time, but elected to swap groups of parts, such as the trigger group, the hammer/sear group, slide assembly, etc.

I did not try to install pivot pins from one pistol into another, and I did not measure pin diameters. As I disassembled both the SA-35 and the BHP Mark III, the Mark III plastic grips and screws fit on the SA-35 frame perfectly. Same for the checkered wood panels and

SPRINGFIELD ARMY SA-35 CONTINUED

ORIGINAL PAGE 16



Far left: This view of the SA-35's grip frame shows light between the sheet metal sear spring and the rear wall of the supplied Mec-Gar magazine. There's no drag on the magazine and it falls free of the SA-35 of its own accord. Earlier versions of the BHP had contact made between the sear spring and the magazine, requiring removal by the weak hand to avoid loss of the magazine. Above: The left thumb bits of the ambidextrous safety on a Browning Mark III High Power, which are missing from the SA-35. The author installed the Mark III safety assembly in the SA-35 and it functioned fine, suggesting that aftermarket BHP ambi safety assemblies can likely be fitted to the SA-35. The SA-35 grips cleared the right-side/left thumb safety lever from the Mark III.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED



Far left: This view of the SA-35's grip frame shows light between the sheet metal sear spring and the rear wall of the supplied Mec-Gar magazine. There's no drag on the magazine and it falls free of the SA-35 of its own accord. Earlier versions of the BHP had contact made between the sear spring and the magazine, requiring removal by the weak hand to avoid loss of the magazine. Above: The left thumb bits of the ambidextrous safety on a Browning Mark III High Power, which are missing from the SA-35. The author installed the Mark III safety assembly in the SA-35 and it functioned fine, suggesting that aftermarket BHP ambi safety assemblies can likely be fitted to the SA-35. The SA-35 grips cleared the right-side/left thumb safety lever from the Mark III.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED



Left: The SA-35's recoil spring tended to buckle downward when the slide was removed from the frame. The recoil springs in the author's other High Powers—three Brownings and two Argentine FM Detective models—do not exhibit this behavior. The wire of the SA-35's recoil spring is 0.003" smaller in diameter than the 0.045" wire of the Browning and Argentine High Powers.

ORIGINAL ARCHIVE IMAGE • PERMISSION CONFIRMED

Far There's no drag on the magazine and it falls free of the SA-35 of its own accord. Earlier versions of the BHP had contact made between the sear spring and the magazine, requiring removal by the weak hand to avoid loss of the magazine. The author installed the Mark III safety assembly in the SA-35 and it functioned fine, suggesting that aftermarket BHP ambi safety assemblies can likely be fitted to the SA-35.

The SA-35 grips cleared the right-side/left thumb safety lever from the Mark III. screws of the SA-35 on the Mark III frame. Next was a try of the ambidextrous safety assembly from the BHP Mark III in the SA-35, where it fit and functioned perfectly, so it is concluded that aftermarket ambidextrous safeties currently available for the BHP (Nighthawk, Cylinder & Slide, Brownells, etc.) should fit as well.

The hammer/mainspring assembly and sears were exchanged and they also functioned in the other pistol's frame without issue, using the respective slides; i.e., SA- 35 slide on the SA-35 frame, with the Mark III hammer, mainspring, and sear group installed. The Mark III pistol worked fine with the SA- 35 hammer, mainspring, and sear. Everything was swapped back to its respective home pistol and the front end of the fire control groups were exchanged.

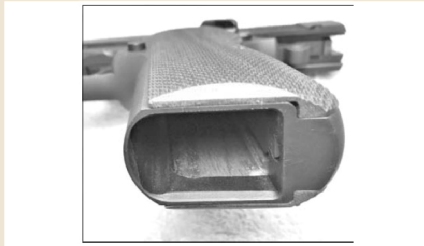
The trigger assembly and resent spring from one pistol functioned in the other. Note that there were subtle changes to the trigger pulls as would be expected; while the trigger pull of the SA-35 out of the box was a clean-breaking 5 lb. 4 oz., the trigger pull of the SA- 35 with Mark III fire control parts was a slightly creepy 6 lb. 2 oz. My curiosity was satisfied in that the FCG parts seem to exchange, but apparently some tweaking and tuning would be necessary. YMMV.

BHP magazines fit and function in the SA-35 and vice-versa. Magazines fall freely from the SA- 35, and there's no contact between the sear spring and the rear wall of the magazine as was the case with some earlier High Powers, which provided some friction to retain the magazine in the mag well to prevent magazine loss, a feature desired by some military and police customers.

An attempt was made to exchange major assemblies—the slide assembly of the SA-35 was installed on the Mark III frame and would travel fully back and forward, and the SA-35 slide stop would engage the Mark III slide on an empty magazine. Repeatedly The recoil springs in the author's other High Powers—three Brownings and two Argentine FM Detective models—do not exhibit this behavior. The wire of the SA- 35's recoil spring is 0.003" smaller in diameter than the 0.045" wire of the Browning and Argentine High Powers.

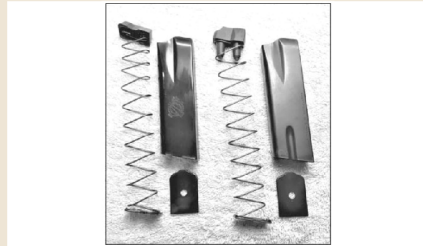
SPRINGFIELD ARMOY SA-35 CONTINUED

ORIGINAL PAGE 17



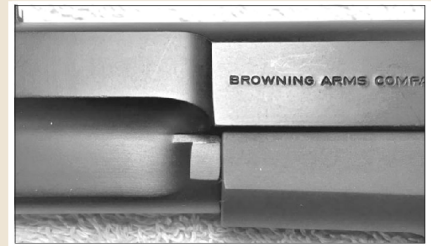
Far left: Disassembled SA-35 (left) and Browning (right) High Power magazines are shown, with the two-round extra capacity of the SA-35 magazine a result of the hollowed-out plastic follower into which the top of the SA-35 magazine spring is inserted. The two projections on the BHP magazine follower locate the magazine spring but limit capacity to 13 rounds. Above: SA-35 magazine well opening is generously beveled to facilitate quick reloads. The thin section of the grip frame is obvious, which contributes to the fit and comfort of the High Power grip in medium and small hands.

**ORIGINAL ARCHIVE IMAGE • PERMISSION
CONFIRMED**



Far left: Disassembled SA-35 (left) and Browning (right) High Power magazines are shown, with the two-round extra capacity of the SA-35 magazine a result of the hollowed-out plastic follower into which the top of the SA-35 magazine spring is inserted. The two projections on the BHP magazine follower locate the magazine spring but limit capacity to 13 rounds. Above: SA-35 magazine well opening is generously beveled to facilitate quick reloads. The thin section of the grip frame is obvious, which contributes to the fit and comfort of the High Power grip in medium and small hands.

**ORIGINAL ARCHIVE IMAGE • PERMISSION
CONFIRMED**



Below: The Browning slide would not fully install on the SA-35 frame; interference was experienced where the short lower slide lugs made contact with the inside edges of the SA-35's dust cover. The SA-35 slide readily fit and functioned on the BHP Mark III frame.

**ORIGINAL ARCHIVE IMAGE • PERMISSION
CONFIRMED**

Far The two projections on the BHP magazine follower locate the magazine spring but limit capacity to 13 rounds. The thin section of the grip frame is obvious, which contributes to the fit and comfort of the High Power grip in medium and small hands. racking the slide fed and extracted ten A-Zoom snap caps.

However, when performing the other half of the experiment, the front of the Mark III slide would not clear the front edges of the SA-35 dust cover; the rear of the SA-35 slide fell short of aligning with the rear of the Mark III frame by about 3/16". I did not force the SA-35 slide any farther to the rear as "some adjustment would be required" in the form of permanent material removal and that was not the goal of the examination.

It should be noted that this is also the sort of non-in- The SA-35 slide readily fit and functioned on the BHP Mark III frame. terchange

that happens with slides and frames of Belgian made High Powers and John Inglis & Co. Canadian High Powers, or the slides and frames of Belgian and Argentine FM High Powers in my experience.

Finally, only the barrels were swapped between the SA-35 and the Browning Mark III; both pistols functioned with each other's barrels and each cycled ten snap caps from their respective magazines. To correctly use the old adage, the proof of the pudding is in the eating.

At the range on a cold and blustery December day in northern Pennsylvania, the SA-35 digested brass-cased full metal jacket and jacketed hollow point ammunition, reloads with a 124 grain Hornady truncated cone FMJ, and 115 grain Tula steel-cased ammo using both the supplied magazine and two Mark III BHP magazines. There were no failures to feed, fire, or extract/eject. Group

sizes were respectable at 15 yards being four inches and mostly under. My curiosity was well and truly satisfied.

Springfield Armory has taken advantage of parts sourced in Turkey from a manufacturer experienced in producing High Power clones using state of the art CNC/ CAM machining technology, and then assembling and finishing the SA-35 in its own facility in Geneseo, Illinois. The SA-35 is faithful clone of the Browning High Power with a decent trigger pull and a barrel tuned to feed most contemporary ammunition.

It comes without what some consider to be undesired features, those being the magazine and firing pin block safeties. And it's offered at a very competitive \$699 MSRP, which is exactly what I personally paid out the door for my example. In today's market, that's not a bad price for trip back in history with the "wondernine" that started it all. AG

PEOPLE & COMPANIES

SIG Short Reset Trigger

How to install a Short Reset Trigger kit for SIG P Series handguns.

BY ROBERT K. CAMPBELL AUGUST 2022

ORIGINAL PP. 18-20

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2536-P18-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2536-P18-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2536-P18-F02. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2536-P18-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2536-P18-F03. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2536-P18-F03

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2536-P18-F04. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2536-P18-F04

The SIG Short Reset Trigger is a great option for shooters with the company's P Series handguns, allowing for a shorter, faster action with a sharp reset. But the SRT kit isn't a trigger at all, instead, it is comprised of a modified sear and a longer safety lever. When properly installed, the SRT kit reduces the length of the pistol's trigger reset, reducing finger movement. After the short break, reset is shortened allowing for faster shooting and greater control of the trigger action.

There is always some take up in the single action but the SRT shortens it. Pressing the trigger to take out this slack is met with a harder, more defined resistance, commonly called the "wall". Coupled with a shorter take up, this provides a big advantage in rapid fire. A short, thinner SIG trigger may also be an aid for some shooters but we'll save that for another time.

SRT kits are available directly from SIG (Sig-Sauer.com, and from Gray Guns (Gray-Guns.com, I have used the Gray Guns SRT several times and it is a quality unit. Before installing the SRT (or performing any trigger work that alters the action, even for the better) be certain to be absolutely clear with the customer. The customer must also understand that even using SIG parts voids the warranty with this instal-

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2536-P19-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2536-P19-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2536-P19-F02. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2536-P19-F02

lation. During the past thirty years I have sent exactly one SIG in for warranty repair at the customer's insistence and it turned out to simply need anew recoil spring, so I am not concerned with voiding the warranty with any custom work, but it's something to consider. When examining the pistol after unloading and clearing, keep the trigger down and rack the slide to check the trigger reset. Get a good idea of what is going on and how the The SRT kit is a good upgrade. pistol feels first.

When ready to install, field strip the pistol by locking the slide to the rear, rotating the take down lever, and running the slide off of the frame, then remove the grips. The sear spring is under pressure. Unwrap it to remove tension and use a punch running through the frame to remove the sear pin. This allows easy removal of parts. Wriggle the decocking lever a bit to remove it from the frame. Loosen the trigger bar spring.

When certain spring tension has been removed from the decocker, hold the decocker seat, which will simply slide into the frame when installing the new lever and replacing the seat and the spring. The Real Avid 4-in-1 Tool is valuable in doing this type of work. Decock the hammer. The sear spring is relaxed by pushing the left rear of the sear spring toward the right from beneath the sear spring pin. Press the sear pin right to the left just far enough to change out the safety lever and sear.

Retain the old sear spring. The sear pin is pressed left to right to reinstall these parts. Press the left end of the sear spring underneath the sear spring pin; a split screwdriver or similar tool does the job. It doesn't hurt to buff and polish the safety lever and trigger bar while the pistol is disassembled.

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2536-P20-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2536-P20-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2536-P20-F02. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2536-P20-F02

Above center: The SIG frame window is used for close work of the pistol. The SRT lever is nicely rounded. Inspect it closely and smooth up if needed as any imperfection on the trigger bar spring will cause a problem. The U-shaped end of the spring should not be spread enough to interfere with function. The trigger bar spring must fit tightly on the trigger bar notch and the end of the spring must be rounded, short, and smooth. If you over work the SRT safety lever you will be in a jam.

Do not take any metal off the rear of the SRT as the piece on the trigger bar is responsible for operating the double action. The will have a negative effect on the first shot of the handgun under normal use. This also operates the SRT safety lever; there is a tiny tab at the top of the trigger bar that operates the trigger bar in a

stock pistol which now operates the Short Trigger Reset sear. Are there actually burrs or other imperfections in SRT kits? Seldom, but it happens.

After all, the SIG unit is mass produced. 2000 grit sandpaper works well in polishing the SRT bottommost lever section. The rounded parts only will be addressed, not the rear of the lever. Reassemble the pistol. Press the trigger and hold it to the rear while racking the slide. The reset should be around 1/8" or less from the frontstrap at the rear of the trigger guard, with a crisp, short action. There may be times when the reset doesn't set up properly.

The likely defect is that the long arm of the SRT lever may land on the top rearmost part of the trigger bar/action bar. AG

FINISHING

Seattle Engraving

Here's a way to make guns more exotic for your customers. Contracting with a company like Seattle Engraving allows any shop with an FFL sell customization options for serious profit.

BY CHARLIE BRIGGS AUGUST 2022

ORIGINAL PP. 21-22

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2537-P21-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2537-P21-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2537-P21-F02. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2537-P21-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2537-P21-F03. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2537-P21-F03

A fascinating company recently opened a new facility near me in Brandon, Florida, a suburb of Tampa. Located in a kind of an out-of-the-way industrial area, I would have never known about them had they not contacted me as one of the only remaining gunsmiths in the area—many of the other gunsmiths have died while I just celebrated my 80th birthday! [That's one way to further establish your shop's business!—Ed.]

The company, Seattle Engraving (SeattleEngravingCenter.com, in a nutshell, buys and stocks a large inventory of factory-new firearms and does elegant engraving and plating with 24 karat gold. They sometimes add diamonds, rubies, or other precious stones. The company had contacted me hoping I

could disassemble 20 guns a week or more, ship the parts to their west coast plating facility, and then receive the plated parts back for reassembly and sale. However, I told them I was just too old and tired to take on a large undertaking like that, especially because it would also compete with my existing two or three guns per week work from existing customers and referrals.

The laser itself is at top center of the picture. Exhaust funnels at left and right remove smoke created by the interaction of the laser beam and the steel slides. coast plating facility, and then receive the plated parts back for reassembly and sale. However, I told them I was just too old and tired to take on a large undertaking like that, especially because it would also compete with my existing two or three guns per week work from existing customers and referrals.

Fortunately, for all of us though, the company had backup plans. By the end of the interview I immediately saw a big potential for readers of American Gunsmith; hence this article. Founded in Seattle, Washington in 2013, Seattle Engraving operated there until January 2021 after deciding to flee the embattled Seattle area, moving its headquarters and engraving facility to gun-friendly central Florida. Plans are underway to move their plating facilities here as well.

Haysam Gamil, the President and CFO, is a master engraver and master manufacturing jeweler. He

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2537-P22-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2537-P22-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2537-P22-F02. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2537-P22-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2537-P22-F03. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2537-P22-F03

Far gave me a personal tour of the company's automated computer-controlled laser engraving machines and the computerized workstations where engravings are conceived prior to being sent to the engraving machines. In addition to the CNC engravers, Haysam personally hand engraves unique firearms for special jobs. If you've never witnessed hand engraving, you've missed a lot! "Drawing" a hardened carving tool through steel, without making the slightest error, is unbelievable work.

For some jobs, precious stones may be inlaid. Moissanite diamonds, often described as the world's most brilliant stones, are sometimes inlaid into that slides of 1911, Browning High Powers, Glocks, or Beretta 92 handguns as well as AK-47s. The company normally doesn't do this on AR-15s, however, as they are primarily aluminum or polymer, neither of which are conducive to electroplating.

A company spokesman explained the marketing side of the business: Trays at right hold engraved components ready for shipment to the plating facility. "Our retail division regularly displays at southeastern gun shows plus the annual SHOT Show, and is supplemented by our retail counters in the front of this building. However, outside the United States our firearms are sold all over the world through wholesale distributors, while inside the U.

S. we sell through a growing list of dealers, which we're expanding through venues like the last SHOT Show in Las Vegas." This is where my ears pricked up: "By going to our website, SeattleEngravingCenter.com, and supplying the necessary information, FFL holders can request to become dealers. Upon approval, they will be entitled to a 15% discount." This is where many of you readers come in and can benefit.

The firearms pictured here (visit their website for even more pictures) often sell for \$3,000 to \$4,000, sometimes even more! If you encounter a customer looking for a really special firearm for themselves or as a gift, 15% of \$4,000 is a quick \$600 profit for you! I don't know about you, but I'd need to do a number of trigger jobs or various repair jobs to make a profit of \$600, and this is without the broken taps and/or drill bits, or the cuts and blood blisters we often encounter at the bench.

Another important thing they explained to me: Seattle Engraving does not take orders for one-off custom guns, such as featuring customer's names, graduation dates, hunting scenes, etc. This is due to possible errors in communication; perhaps caused by a customer's imagining how the finished firearm might look compared to how the finished product actually looked. It's a little like when you see a movie after reading

READER FORUM

Reader Forum

BY AMERICAN GUNSMITH EDITORS AUGUST 2022

ORIGINAL PP. 23-24

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-3E70133936-A2538-P23-F01. Know the rights holder? Please ask them to contact us.

AG-3E70133936-A2538-P23-F01

Caswell, Inc (Caswell Plating. com, 855/CASWELL) is a firm I have personally worked with in the past, although on a small scale ammo pictures and is often used by ballistic labs and police departments. Guns and ammo are presented with prices, tech specifications, features, gun values, ballistic, and up to 12 high-resolution zoomable color pictures.

With over 58,000 gun pictures (in resolution up to 4000 x 1240) and with the biggest online visual (graphic) Gun Codes, Proof Marks, Stamps, and Crests Guide, Firearms Guide is a great tool for fast and precise firearms identification of antique and modern civilian and military guns. The updated Gunsmithing Library of the new 13th edition has over 21,583 zoomable and printable high-resolution gun schematics, blueprints, manuals, and antique catalogs. American Gunsmith subscribers receive a 20% discount.

Impressum Media also has discounts for reselling in your shop. Contact Chris Mijic, Editor of Firearms Guide, at for details.

Repair TRAX Shop Software Dave Heyliger of Repair TRAX (RepairTRAX.com, for work on triggers, grip screws, etc. You would probably want to talk to their Tech Support people before undertaking anything as large as a handgun slide or frame, much less an AK-47 barreled receiver! Finally, there's a somewhat obscure firm called Texas Platers Supply 2453 W. Five-Mile Pkwy., Dallas TX 75233).

They have been featured in several interesting articles but do not seem to have a website. Regardless, I'm afraid that a DIY plating job will be a long way away from the gorgeous work I've seen at the Seattle Engraving facilities, and then there's the engraving itself. But good luck. There's obviously an interesting market for these beauties and we have an opportunity to jump into it! AG has been in business since 2009, serving hundreds of repair and service shops around the country and the world.

This includes gunsmith shops—with many of their continuous customers using the service since 2009. Repair TRAX can manage all shop customers—including all their guns, maintain maintenance schedules, manage your work orders and work flow, display what tickets are new, inprogress, or complete, manage your inventory, and a whole lot more. Repair TRAX costs \$1 a day; many people spend more on their morning coffee.

This price has been the same since 2009 and there are no limits on customers, work orders, inventory, staff—no limits whatsoever. Repair TRAX is a cloud-based software application, which means you are able to access your store from anywhere, using any online device. Shop owners can capture signatures on a tablet or similar device and can design their own custom work flow of what steps are necessary to complete a work order. Auto-notifications can be set up such that when the work is

complete, customers are auto-notified via email and/or text (SMS) message. No more followup phone calls to make as the software does it for you. Custom printouts, release forms, and other info can be produced by Repair TRAX. Repair TRAX was designed to improve your gunsmith customer service without breaking the bank and offers a free 15-day trial. The site has demo videos and there are hassles or followup calls; if you like it, you can just keep on going. Contact for more information.

Barrel Slug Diameters On page 13 of Paul Mazan's barrel slugging article ("I'll Take a Slug of That", May 2022) he has a table that lists bore diameters. Does he really mean bore diameter there or should this be groove diameter? Please clarify. or post a letter to Falls Church, VA 22041. For subscription questions or mailing problems contact American Gunsmith

SEARCHABLE ISSUE RECORD

Archive index

New Bantam CNC American Gunsmith Editors	2	Springfield Armory SA-35 Brian R. Smith	11-17
Spuhr Ideal Chassis System Stephanie A. Martz	3-5	SIG Short Reset Trigger Robert K. Campbell	18-20
Airgun 'Smithing Gene Salvino	6-7	Seattle Engraving Charlie Briggs	21-22
Kimber Custom II Michael Priego	8-10	Reader Forum American Gunsmith Editors	23-24

Rights and corrections. Images without confirmed permission remain reserved in place. Authors, photographers, and rights holders may contact editor@gunsmithmag.com. Corrections to searchable text are tracked against the source-page record.



American Gunsmith

The complete searchable archive of a technical journal devoted to craft, repair, maintenance, machining, and restoration.

GUNSMITHMAG.COM • EDITOR@GUNSMITHMAG.COM