



POLISHING UP ON FLEX-HONE® TOOLS FOR GUN MAINTENANCE

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Polishing up on **GUN** MAINTENANCE

With more than 50 years of experience, **Brush Research Manufacturing** is a major name in specialist cleaning and with its Flex-Hone for firearms has produced an industry standard.



Brush Research Manufacturing (BRM), an American manufacturer of industrial brushes and honing tools, has been making specialised tooling for cleaning, deburring and surface finishing in metalworking environments for more than half a century.

The company was bought by the present chief operations officer, Robert (Bob) Fowlie, in 1958.

At that time the largest companies using its products were in the aerospace industry, which required a unique solution to its small deburring problems.

From there, the company continued to explore other industries with its own unique applications.

Bob joined the company in 1977, when the business was heavily involved with the automotive

and agricultural manufacturing trades, in addition to the aerospace products.

The first Flex-Hone tools were primarily used for the efficient polishing to the high-grade surface finishing of items such as car-engine blocks and hydraulic cylinders.

Since that time, the Flex-Hone tool has become a manufacturing standard used on the production lines of a host of

American and Italian gun makers, as well as in gunsmithing shops and private garages around the world.

Simple principle


Using Flex-Hones has proven valuable to many industrial and mechanical applications.

Although the tools are easy to use, they accomplish a precise and technical operation. Their ease of use allows operators to be trained quickly.

They can be used in almost any situation without necessitating heavy parts to be moved to special bays, providing great advantages in time saving in many applications.

The effectiveness of the Flex-Hone to remove the burrs from drilled, bored or reamed holes was soon recognised, allowing this awkward but essential operation to be speedily and effectively performed in minimum time.



 Slick chambers (above) are appreciated by all shooters.

Highly versatile

The basic structure of the Flex-Hone is a stiff wire stem with soft and flexible nylon strands radiating from the central metal shaft, the tips of which are coated with a firmly bonded '90 per cent plus' abrasive compound.

It is this highly abrasive content, combined with the flexibility, that produces the fine-finish, 'plateaued' surface polishing unique to the Flex-Hone.

The huge range of sizes available, along with a selection of grits and abrasives, combine with the simple operation to make for a versatile tool with a growing variety of applications.



Of particular interest to gun dealers will be the ones designed to improve the function, reliability and longevity of many firearms.

Bob is a gun enthusiast with a particular fondness for pistols.

He has been past president of the International Paintball Association and was once a keen cowboy-action-shooting competitor.

This discipline involves accurately shooting metal targets for time.

In 'action-type' disciplines, time affects the final score and positions. With the 1873 Colt-style revolvers being a part of the Single Action Shooting Society (SASS) scene,

getting the empty cases from the cylinder can add precious seconds, severely damaging performance.

Cartridge chambers pose manufacturing difficulties due to their length-to-diameter ratio; it's difficult to drill and ream holes four times as deep as they are wide and achieve a consistently high surface finish.

So chambers can be relatively 'rough' compared with a flat surface.

Sticky situation

Unpolished commercial chambers can result in sticking cases and each sticky chamber costs time due to the increased ejection and reload times.

A range of Flex-Hones suited to polishing the chambers of early single-action revolvers was added to the line and became an immediate success.

The advantages of slick chambers were quickly appreciated by all pistol shooters, whether for competition use, functional reliability in semi-autos or just making the cases eject more easily.


Those who reload also found that polishing their chambers did all of these things and also proved much kinder to their fired cases, meaning they could get more quality reloads per brass case – it was very much a win-win situation!

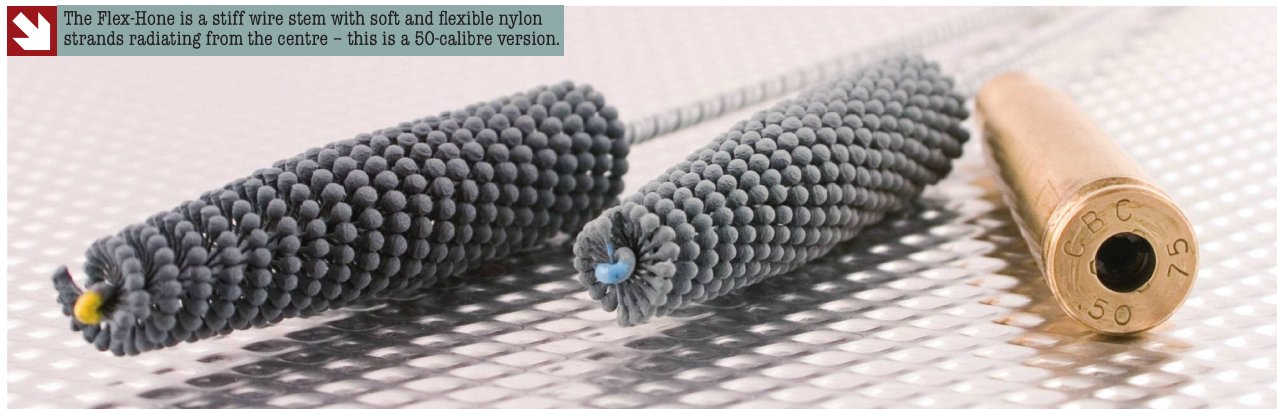
Growing interest

The range of chamber sizes has gradually expanded to handle anything from .17 up to .50 BMG and, being receptive to customer demand, sizes to suit emerging popular calibres can be accommodated.

Shotgun buffs and rifle enthusiasts alike are finding the use of the Flex-Hone useful.

Shotguns have the advantage of it being possible to polish the full length of the tubes. Although not suited to use in rifled bores, some barrel makers polish their blanks using Flex-Hones prior to cutting the rifling for a smoother bore finish.

 The Flex-Hone is a stiff wire stem with soft and flexible nylon strands radiating from the centre - this is a 50-calibre version.



Shotgun Flex-Hones come in a range of short-stem types that will polish the chamber and the forcing cone (albeit using two separate tools).

Much longer Flex-Hones safely polish the barrel's full length. This has numerous advantages. When used in the chamber, the polished finish allows the fired cases to extract more easily, which puts less strain on extractors and ejectors. It will also ensure that debris is far less likely to adhere to the chamber walls and any that does remain will be much easier to remove during the normal cleaning procedure.

The forcing cone can also be polished using a specific brush with a tapered profile. BRM's technical service specialists are available to customers to identify correct tool sizes.

Forcing cones are the first thing the shot and wadding encounter as the transition is made from chamber to barrel - the cone literally forcing the larger diameter payload down to barrel size, so is subjected to considerable

force, as its name implies.

This can lead to considerable fouling build-up close to the cone, the surface finish of which can be less smooth than either the barrel or chamber, as manufactured.

Not only does the fouling create added resistance but can induce corrosion to take hold under it. Even regular cleaning may not remove it all. Polishing with the Flex-Hone for firearms will ensure fouling build-up is minimised and retain the condition and value of your shotgun.

Size and simplicity

Standard barrel hones are 34 inches long and available in 10, 12, 16 and 20 gauge at present. The metal shanks are plastic coated to avoid risk of marking if it should touch the barrel's bore.

Although three abrasive grits are available, the final finish should

always be achieved by using the finest, 800-grit tools.

Most firearms with decent finishes only require a 800-grit. If there are coarse tool marks or scratches, a user may need to start with a 400-grit (medium fine) to blend them out and then follow with an 800.

honing fluid - BRM recommends its specially formulated Flex-Hone oil

- Rotate the tool prior to entering the barrel, with a suggested 600rpm to 800rpm speed for firearm applications
- Using even strokes, gently move the hone back and forth within

“ Because Flex-Hones are self-centring and self-aligning to the bore, they are easy to use. ”

The 180-grit should only be used in cases of very deep scratches or severe pitting. After using the 180-grit the 400-grit followed by the 800-grit is recommended.

Using these hones is a simple process, basically requiring a means to hold the part securely, a low-speed electric hand drill and some common sense...

- Always check to ensure the firearm isn't loaded before any work is done
- Remove the barrel to be worked on and place in a padded vice
- Remove about one inch of the plastic covering from the end of the stem. This will allow the drill chuck to hold the stem securely
- Wet the abrasive globules with a good quality


the bore a few times and then inspect

- Hone until the desired finish is achieved
- After honing, clean the barrel of all abrasive material with warm soapy water
- Wipe with a clean cloth until the cloth comes out unmarked
- Oil lightly and reassemble

Because Flex-Hones are self-centring and self-aligning to the bore, they are exceptionally easy to use. Honing is not required frequently, as the gun will subsequently clean more readily by normal methods.

An ideal tool for gun makers and gunsmiths, this tool system has many advantages for serious gun owners and competitors too. **GTW**



 Standard barrel hones are available in a range of gauges for most shotguns.



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