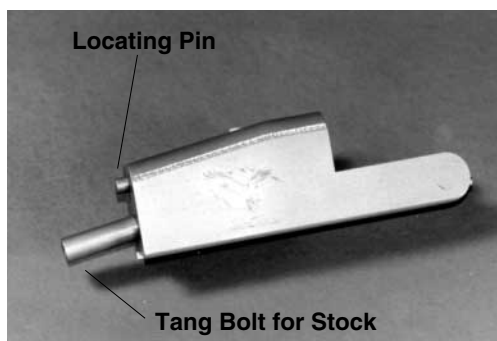


LOCTITE*Adhesives for more
reliable assemblies***APPLICATION CASE HISTORY****No. 131****LOCTITE® ADHESIVES DESIGNED INTO NCP TRAP
GUNS FOR BARREL-TO-BARREL UNIFORMITY***New Assembly Methods Increase Reliability and Safety, Reduce Labor***Situation:**

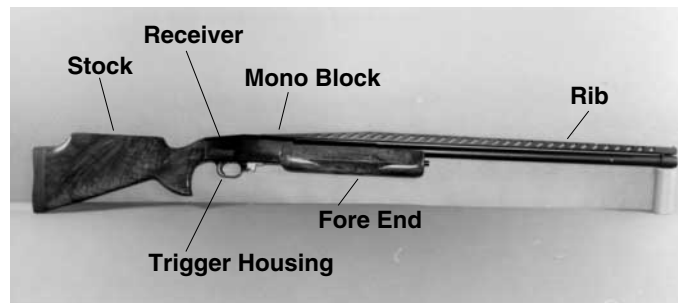
NCP Products has manufactured firearms for trap shooting since 1991. From the very beginning, NCP had a desire to change the methods of assembly used by this industry. Traditionally, guns have been assembled using silver solder, requiring heat for 15-20 minutes at 1100°F. Such high heat can distort and warp a gun barrel, requiring a labor-intensive, hand-straightening process.

It is this hand-straightening that prevents a uniform concentricity from one barrel to the next. This, in turn, may cause different shooting patterns from gun to gun – even from the same manufacturer. Sometimes, a shooting pattern can vary as much as 6-8" in pattern height.

NCP Products Owner, Dennis DeVault, wanted to create an assembly process that would maintain barrel-to-barrel integrity – where every gun he manufactured shot the same pattern.



Loctite 262 is used to lock the tang bolt onto the receiver, holding the stock to the back of the gun.



NCP Products Trap Guns are fully assembled using designed-in Loctite products, creating barrel-to-barrel concentricity. It is this uniformity that allows the same pattern to print from every single trap gun NCP manufactures.

Solution:

Working as a member of the NCP design team, Loctite provided the right technology and assembly methods to help them achieve their goal.

- Loctite 620, an anaerobic retaining compound is used to bond the steel barrel to the mono-block construction. No fixture or heat is needed since Loctite 620 is cured by the exclusion of oxygen with simultaneous metal contact. This is achieved by simple assembly.
- Loctite 620 is also used to bond the fore end hanger onto the barrel (steel to steel) and to bond the rib hanger connection around the muzzle end. Traditionally, the industry had been silver soldering these joints, as well.

(Continued on reverse side)

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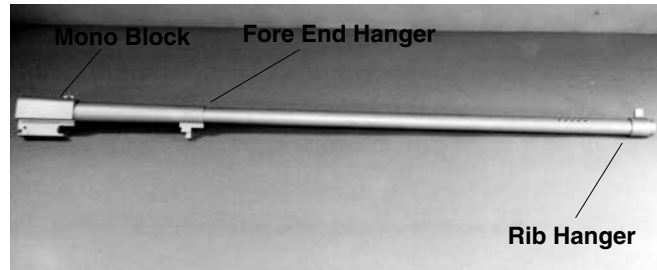
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Loctite® Adhesives Designed Into NCP Trap Guns For Barrel-to-Barrel Uniformity (continued from reverse)

- Loctite 262, a high-strength threadlocker is used to lock the tang bolt onto the receiver which holds the stock into the back of the gun. Loctite 262 is also used on the locating button, which locates the stock into its position to prevent rotation.
- The in-line trigger design (which NCP manufactures) is housed in bearings. The striker is inside ceramic bearings which are held in place with Loctite 290 Threadlocker. The exterior of the bearings is primed with Primer T, prior to installation.
- On the front end of the forearm is a wear and guide busing for the fore end hanger pushrod. It is held in place with Loctite Fast Cure Epoxy.

In each of these applications, Loctite adhesives must withstand repeated firing, which translates to pressures of 10,000-12,000 psi every time a gun is fired. Loctite products are used both on the mono-block and the fore-end hanger, where peak pressures occur.

In addition to pressures, the gun must go through a bluing bath to produce its black oxide finish. This is an oxidizing process accomplished with bluing salts heated to 300°F for two hours. On bare metal parts, bluing salts can creep and seep into the gun parts and crevices. Loctite products actually protect the gun, preventing the salts from penetrating its parts.



Loctite 620 is used to bond the fore end hanger onto the barrel of NCP's trap gun, as well as to bond the rib hanger connection around the muzzle end.

Results:

NCP Owner, Dennis DeVault wanted to test just how well Loctite adhesives really worked. He took three guns completely assembled with Loctite adhesives. After shooting 105,000 rounds, he felt he had achieved his goal of barrel uniformity and concentricity. "I know that every gun I take off the line – whether it's the 1st, the 50th or the 10,000th – will print the same pattern every single time." In addition, this barrel-to-barrel quality inherently creates a safer gun, says DeVault.