

US Strategic, LLC

Bore Related Technology

1. Bore Surface: US Strategic has been able to achieve a bore surface that holds a roughness tolerance of less than two millionths of an inch on a spot measurement with a total variance across a bore of at least twenty inches of less than ten millionths of an inch. This process is achieved in an entirely automated process to assure consistency from part to part. The benefits of such a high level of finish include, but are not limited to, the following:
 - a. Enhances consistency in ballistic performance due to uniform and consistent seal with the projectile.
 - b. Increases the life of the bore as it resists throat erosion as there are no imperfections in the surface for the high-pressure gases to penetrate, promoting flame cracking.
 - c. Eases cleaning due to the lack of imperfections for carbon and jacket material to adhere to.

2. Bore Finish: US Strategic, having achieved such a fine bore surface, has worked with on selecting the correct finishes that will not impact the surface finish. US Strategic applies, depending upon the application and material selected for the barrel, case hardening surface treatments that cause hard surface finishes ranging from a minimum in excess of 1000 HV to over 2000 HV dependent upon the base material used. The benefits of this include, but are not limited to, the following:
 - a. Compounding the already more durable fine surface quality bore detailed above, the increasing of the hardness of the bore with this case hardening further extends the life of the bore significantly.
 - b. The hardness of the surface enhances lubricity through a significant reduction in the coefficient of friction of the surface and resists any adhesion of jacket material or other deposits in the bore.
 - c. This process also enhances the thermal properties of the underlying material providing for retained benefits in high thermal cycle environments

3. Rifling: US Strategic has designed a rifling that increases the bearing surface of the rifling while simultaneously reducing the deformation of the jacket and preventing slippage due to the dynamics of the design of the rifling. Further building on the combined benefits of the surface and finish above, the design is inherently easier to clean as the design reduces the tendency of carbon and jacket materials to buildup in the bore.

For more information please contact: Michael H Blank at Mike@GXAA.com or 314-749-4141