



HMSC October 10, 2014
Martin Kennedy

PARKERIZING




Parkerizing

- Also known as Phosphating
- Coats and protects carbon steel from corrosion and wear
- Often used on firearms
- Easy to perform in home shop
- Can NOT be used for
 - non-ferrous materials (aluminum, brass, copper)
 - High nickel steel
 - Stainless steel



Development

- Developed in the late 1800's in England
 - Perfected in early 1900's in US
 - Name derives from Parker Rust Proof Phosphating Company (1915)
 - First large scale use was in WWII
- 

Parkerizing Fluids

- Two common types
 - Zinc Phosphate (gray finish)
 - Manganese Phosphate (black finish)
- Available commercially in concentrated form
 - Brownell's
 - eBay
- Solution will last for years with light use

Homemade Solution

- Components
 - Phosphoric acid
 - Jasco Prep & Primer
 - Manganese dioxide (option 1)
 - From old batteries or pottery shop
 - Zinc (option 2)
 - Shavings from new pennies
 - Degreased steel wool
- More info on internet

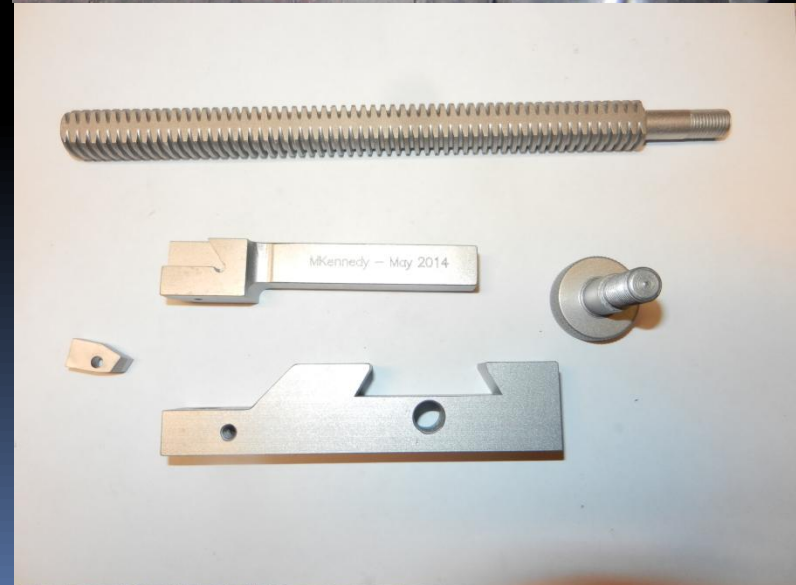
Equipment

- Crock pot
 - \$10
- Iron wire
- Iron basket
- S/S strainer
- Thermometer



Surface Preparation

- Degrease
 - Zep Industrial Purple Cleaner
 - or
 - Brake Cleaner
- Freshly exposed surface
 - Just machined
 - or
 - Bead blast
- Wear rubber gloves or handle with tongs



Preventing Coverage

- Coat areas that you DO NOT want to coat with Dykem
- Can remove later with acetone



Pre-Heating

- Smaller parts
 - Can be put directly in solution
- Larger parts
 - Pre-heat in toaster oven
 - Assure wife is not in kitchen!



Parkerizing

- Immerse in solution
 - 180°-212°
 - Higher temperature increases reaction
- Use iron or stainless steel wire
 - Basket
- Solution must get to all sides
 - Don't let part sit on bottom
- About 15 minutes, or until bubbles stop
 - Can go longer, but once I forgot time...
- Different steels will turn different shades of black

Immersion and Bubbling



After about 15 minutes



Parkerized Parts

- Note chalky deposits



Larger Parts

- Can use freezer bag to immerse larger parts
- Flip frequently
- Hard to not get color mismatch / rusty line in middle



Post-Parkerizing

- Parts will rust quickly!
 - Blow off excess water
 - Coat in oil
 - Gun oil or other light oil
 - Let sit for several hours
 - Oil soaks into pores



Clean-up

- Allow solution to cool
- Strain out white flakes and greenish solids
 - Failure to strain will result in blemishes on future parts
- Add water to make up for boil off





The End

Questions?

