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TECHNICAL NOTE 96: HEADSPACE INSPECTION

I. HEADSPACE GAGES

1. Headspace ranges are established by industry advisory bodies, government bodies, or by individual manufacturers.

2. Some firearms can successfully fire cartridges that are physically similar but not identical in dimensions and tolerances. Examples of this would be .223 Remington / 5.56mm NATO and 308 Winchester / 7.62mm NATO. These sets of cartridges will function interchangeably in our firearms; however, each cartridge has its own set of headspace gages. ArmaLite uses NATO dimensioned gages.

3. Like all mechanical devices, headspace gages are fabricated with some tolerance. And headspace gages vary from manufacturer to manufacturer. It is important to know the exact headspace dimensions on the go and no-go gages that you are using. And, gages do wear, so it's also important to have your gages regularly calibrated. The very tight tolerances that need to be held on the gages require calibration in a climate-controlled laboratory.

4. Headspace gages for NEW firearms come in a set of two gages – GO, and NO GO. Those two gages typically represent only a portion of the safe headspace range. They leave room for headspace to grow during use of the firearm. An additional gage, called a Field Reject gage is intended to ascertain when headspace has grown to its maximum safe allowable limit.

⚠ CAUTION: WHEN CHECKING HEADSPACE, IT IS IMPORTANT TO NEVER SLAM THE BOLT ONTO THE GAGE. ONLY LIGHT FINGER PRESSURE SHOULD EVER BE APPLIED.

⚠ CAUTION: GAGES ARE PRECISE MEASURING TOOLS CALIBRATED TO THE TENTH OF A THOUSANDTH OF AN INCH. DROPPING, MISHANDLING, OR IMPROPER STORAGE COULD RESULT IN DAMAGE TO THE GAGES. A DAMAGED GAGE COULD RESULT IN

INACCURATE HEADSPACE MEASUREMENTS WHICH COULD RESULT IN MALFUNCTION OR EVEN CATASTROPHIC FAILURE.

⚠ CAUTION: IF AT ANY POINT IN TIME YOU SHOULD NOTICE UNUSUAL WEAR ON THE GAGING OR HAVE MISTAKENLY MISHANDLED THEM, REPLACE THE GAGES.

II. HEADSPACE INSPECTION PROCEDURE FOR BARREL ASSEMBLIES

1. Prepare the gages by cleaning them gently with a solvent and then drying.
2. Prepare the chamber and locking lug area of the barrel by cleaning with a chamber brush followed by patches soaked in a solvent (such as isopropyl alcohol) and then dry patches until the chamber is clean.
3. The ejector can cause false readings. Remove the ejector and ejector spring from the bolt. If your headspace gages are relieved so that they do not touch the extractor, you may leave it in the bolt. Otherwise, remove the extractor and extractor spring from the bolt.
4. Prepare the bolt by cleaning all debris from the bolt face and bolt lugs. Then clean the bolt face and bolt lugs with a solvent (such as isopropyl alcohol) and follow with a dry cloth.
5. Hold the barrel muzzle end down on the work bench.
6. Gently slide the appropriate go gage into chamber.
7. Insert the bolt into the barrel slowly and carefully until it comes in contact with the gage.
8. With two fingers turn the bolt clockwise using only light pressure. If the bolt closes on the gage, remove the gage and proceed to the next step. If the bolt does not fully close, the barrel/ bolt combination is under headspace.
9. Repeat process 4-7 using appropriate no-go gage making sure the Bolt does NOT close on the gauge.
10. If the bolt does close on the no-go gage, the barrel/ bolt combination is over headspace.

III. HEADSPACE INSPECTION PROCEDURE FOR BARRELS ASSEMBLED TO RECEIVERS

1. Prepare the gages by cleaning them gently with a solvent and then drying.
2. Prepare the chamber and locking lug area of the barrel by cleaning with a chamber brush followed by patches soaked in a solvent (such as isopropyl alcohol) and then dry patches until the chamber is clean.
3. The ejector can cause false readings. Remove the ejector and ejector spring from the bolt. If your headspace gages are relieved so that they do not touch the extractor,

you may leave it in the bolt. Otherwise, remove the extractor and extractor spring from the bolt.
4. Prepare the bolt by cleaning all debris from the bolt face and bolt lugs. Then clean the bolt face and bolt lugs with a solvent (such as isopropyl alcohol) and follow with a dry cloth.
5. Reassemble the bolt (without its ejector and, if necessary, without its extractor) into the bolt carrier.
6. Insert charging handle into upper receiver.
7. Hold upper receiver muzzle end down on the work bench.
8. Reaching through the bottom of the upper receiver, gently slide the appropriate go gage into chamber.
9. Insert carrier into the upper receiver slowly and carefully until it comes in contact with the gage.
10. With two fingers depress end of carrier with only moderate pressure. If the carrier closes on the gage, remove the gage and proceed to the next step. If the carrier does not fully close, the barrel/ bolt combination is under headspace.
11. Repeat process 6-9 using appropriate no-go gage making sure the carrier does NOT close on the gage.
12. If the carrier does close on the no-go gage, the barrel/ bolt combination is over headspace.

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