KNS Precision Inc.

CzechValve

for

Bren2/806™ Family Firearms

Installation & Operation

User Manual

Patent Pending

Safety Notes

-Always obey the four laws of gun handling:
    -Treat every gun as if it were loaded
    -Do not point the muzzle at anything you are not willing to destroy
    -Always be sure of your target and what is beyond it
    -Keep your finger off the trigger until ready to fire
-Ensure the firearm is unloaded before installation
-Always wear eye protection while performing maintenance on the firearm
-Always use eye and ear protection during live fire
-Always perform gas system adjustment in accordance with the user manual procedure
-Do not make large gas system adjustments without prior incremental testing to verify safe operation

Safety Disclaimer

The KNS adjustable gas regulator grants a much wider range of operating force to the gas system than was originally intended. As such, it is possible for inappropriate adjustment settings to drive the firing & extraction cycles beyond safe limits of operation.

The consequences of unsafe operation can range from damage to the operating parts, to case failures capable of <u>fatal injury.</u>

Always perform gas system adjustments incrementally through testing in accordance with the user manual procedure to minimize the risk of unsafe operation.

*** KNS Precision INC is NOT responsible for misuse or failure to follow user guidelines, resulting in damage to firearm ***

Warranty Information

This product is covered by our Lifetime Warranty against manufacturer's defects and breakage during normal use of this product. For warranty issues please send an email with your contact information and product details to info@knsprecisioninc.com.

About KNS Precision Inc.

KNS Precision, Inc. had its beginning in the summer of 1999, when two friends, one a master machinist, the other a firearms enthusiast, combined to produce and market new products for the AR15/M16 platform. With overwhelming success from the start, KNS Precision, Inc. has earned the firearm and shooting industry's acceptance through product innovation and customer service.

In 2006 the machinist sold his portion of the company to his nephew, who was also a master machinist and owned a local Swiss machine shop. KNS Precision, Inc. then moved four miles from it's original location to the new machine shop. In 2008, the second partner retired and a portion of the company was sold to a military Veteran and local Police Sergeant who had been the company's Law Enforcement and Military representative since 2002.

The current owners have continued the strong traditions of the company while expanding company growth, customer service and product development.

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Introduction

Congratulations on purchasing the KNS CzechValve!

Upon installation, users will enjoy:

-The ability to safely use a much wider variety of ammunition
-The ability to reduce the rate of fire and bolt group velocity
-The ability to quickly adjust settings without tools
-Reduced venting of gas from the chamber area into the user's face
-Repeatable, precise adjustment positions for recording settings
-A fully-reversible, installation requiring only a bullet tip/multitool
-Corrosion-resistant, easily cleaned parts for minimal maintenance

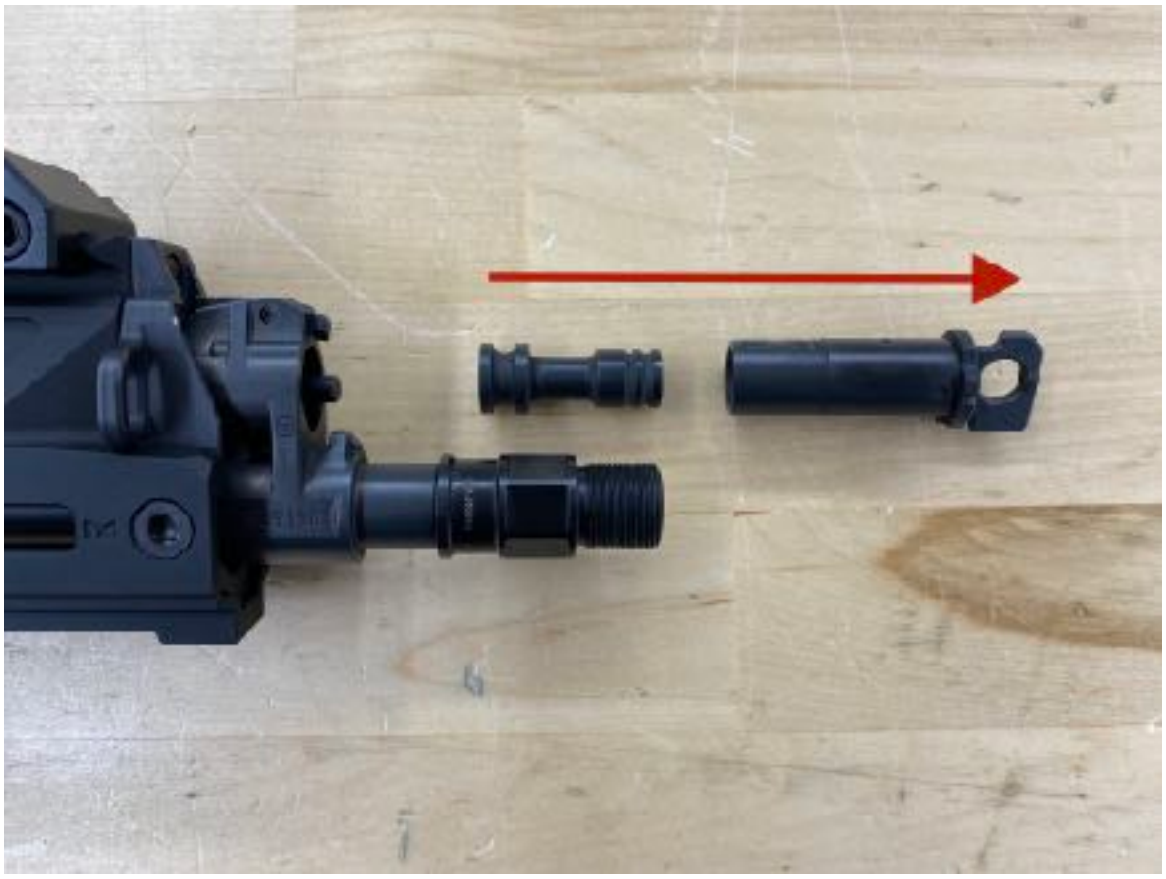
The purpose of this manual is to walk the new user through installing the CzechValve Adjustable Gas Regulator in their configuration of choice, safely tuning it for desired operation, and keeping it maintained. Appendices with useful information for suggested gas system adjustments, and troubleshooting lie at the end of this manual.

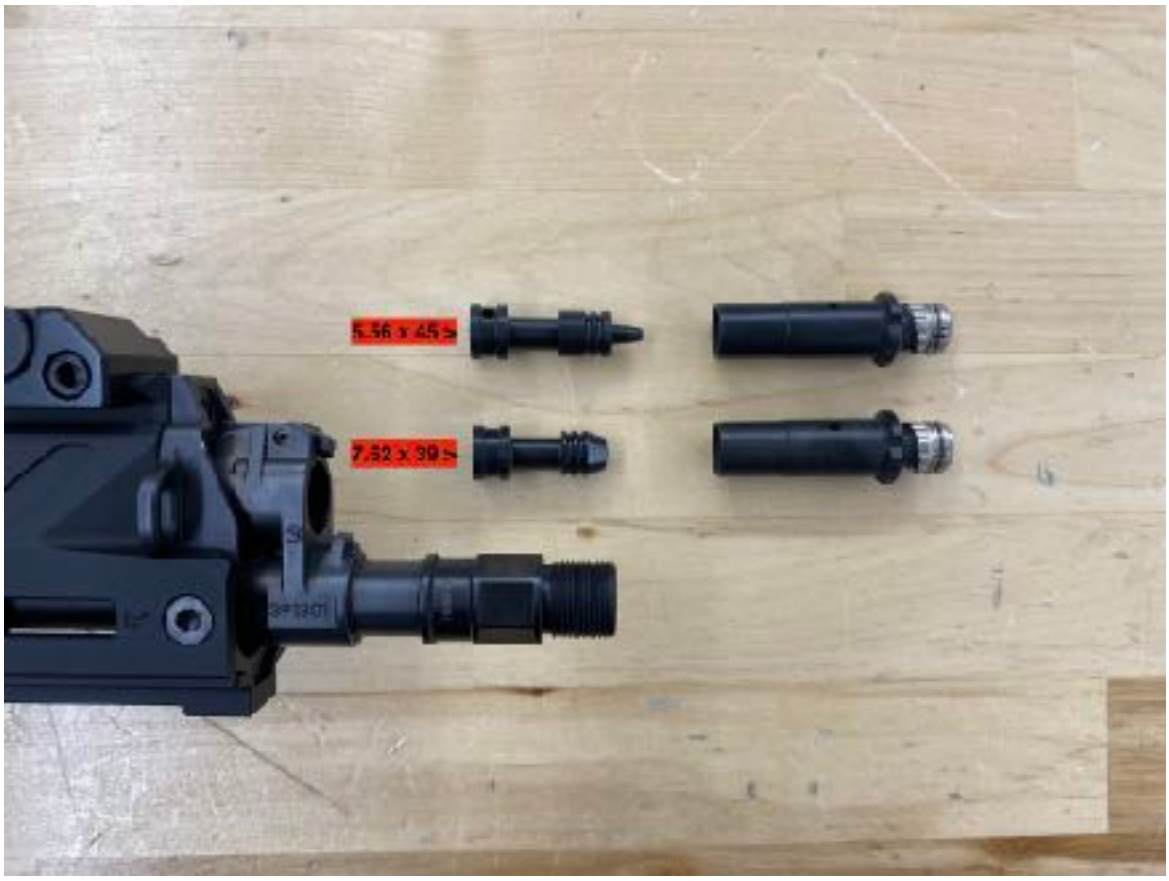
Installation Procedure
ENSURE FIREARM IS UNLOADED BEFORE PROCEEDING

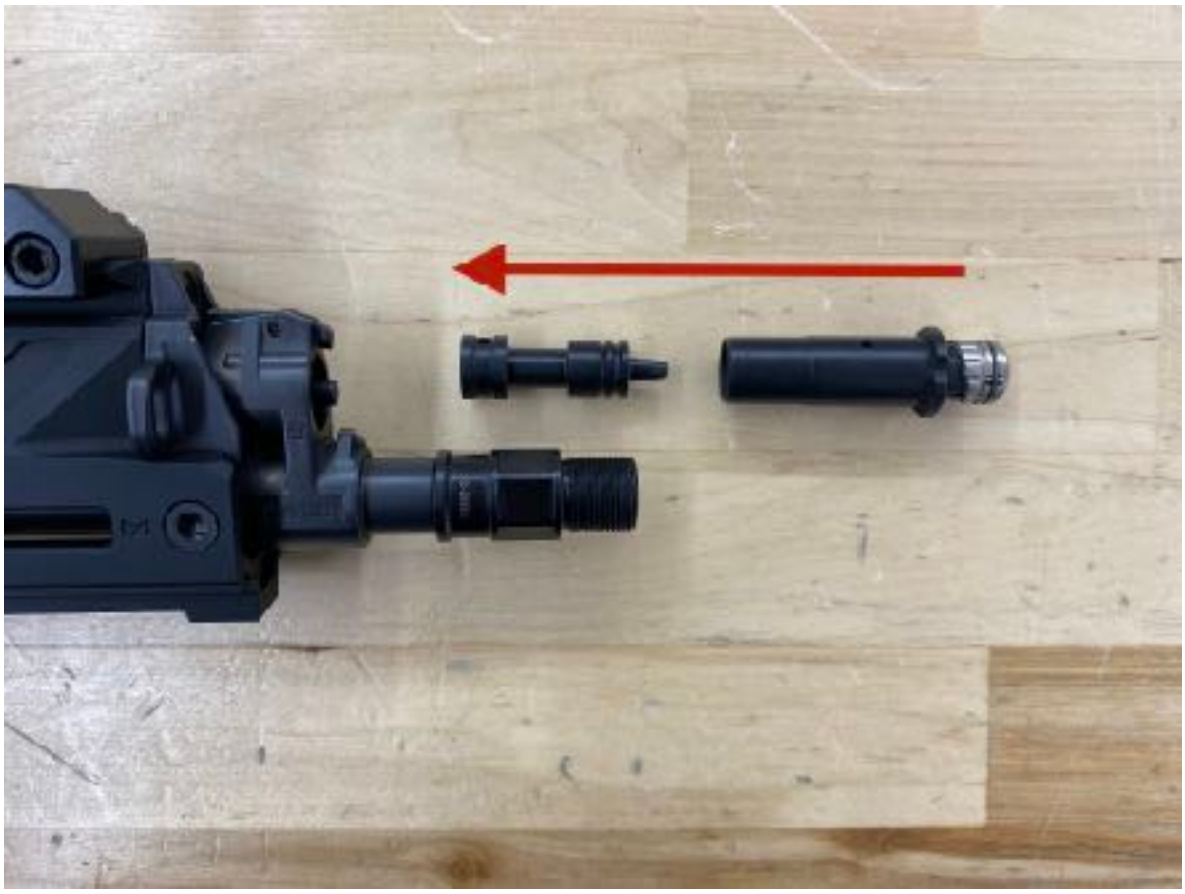
-Tools Required:
- Fingers/small punch

-Step One: Ensure firearm is unloaded before proceeding.

-Step Two: Facing the factory gas plug, apply downward pressure on the rear of the gas plug locking lever, rotate gas plug counter-clockwise until it reaches the takedown position, then remove it from the gas block by pulling forward per factory user manual. Remove the factory piston - bag and tag factory parts for future use.




5.56 x 45
7.62 x 39



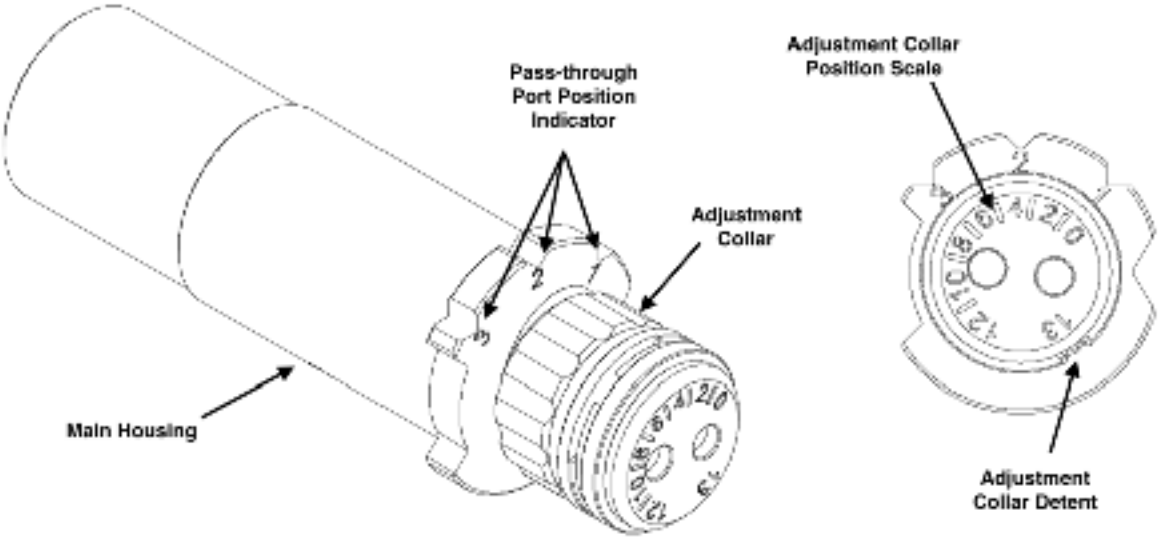
-Step Three: Insert the KNS CzechValve main housing and piston into the gas block, orient it so that the regulator drops into the gas block and then rotate clockwise while depressing the locking lever with your finger or small punch until the desired detent notch aligns with the locking lever. Release the locking lever and ensure that the main housing is locked in the desired position.

The KNS piston and main housing design is specific to 5.56 and 7.62x39 - the piston with the protrusion is designed for 5.56, and the piston with the tapered head and flat face is designed for the 7.62x39. The main housings are also ported differently, with the 7.62x39 housing having a laser marked * next to the “3” setting marking.

At this point, typical installation is complete, all that is left is to test fire the weapon in all configurations to determine best setting(s).|
One of the many great features of the CZ Bren2/806™ platform is the three user-selectable gas apertures between the barrel and the piston journal. These allow the hard aperture size to be changed by the user to accommodate different configurations/ammunition types simply by turning the CzechValve body within the gas block.

By selecting different apertures, the amount of gas supplied to the piston/regulator can be increased or decreased as needed. This allows the weapon to be tuned for high/low pressure ammunition, barrel lengths, and various muzzle devices such as suppressors.

If more energy is desired, depress the lever on the gas block and rotate the CzechValve to the next higher number. Think of this like the transfer case on a manual transmission - you are modulating the total volume of gas available for the regulator to…regulate.



Adjustment Procedure
OBSERVE ALL RULES FOR THE SAFE OPERATION OF LOADED FIREARMS

The most important point to remember when adjusting the gas system of your firearm, is to begin from a safe starting point, and work incrementally toward the desired adjustment. The KNS CzechValve functions by venting excess gas volume out of the regulator to reduce operating force, so the 'full open' setting of the main body - combined with "position 1" represents the lowest possible energy setting, and is a safe default setting for initial tuning. For suppressed firearms or when shooting non-standard ammunition, excessive back pressure can result in dangerously violent operation capable of damaging the firearm or injuring the shooter. **Therefore, it is recommended that initial adjustment for any gun be done in <u>unsuppressed semi-automatic condition</u>, with <u>standard ammunition</u>.**

The laser engraved numerals on the main housing 1 through 3 indicate which pass-through port being used to meter total gas volume into the the assembly.

The laser engraved scale on the face of the CzechValve indicates the level of energy being delivered to the piston to cycle the firearm. The detent/notch points to the position it is currently in, “0” being the lowest amount of energy delivered, “13” being the highest amount delivered. The scale is stationary, while the adjustment collar detent provides the traveling “pointer” to indicate current setting. Turn the adjustment collar until the adjustment collar detent is aligned with the desired setting.

The two round pockets in the face of the scale are factory assembly features only, this part is swaged in place permanently - DO NOT attempt to adjust any settings as damage to your tool and/or CzechValve may occur.

It is important to understand that the combination of these two variables results in the desired energy being delivered to the bolt group. Pass through ports 1 through 3 regulate *gas volume* delivered to the regulator whereas the Adjustment collar controls how much *of that volume* is used to accelerate the bolt carrier vs. being vented to atmosphere.

-Step One: Begin with the firearm in the unsuppressed condition, shooting standard ammunition, and the adjustment collar turned to the full-open (0) position, with the main housing in the number 1 gas pass through port setting. The goal is to start in a low-energy “safe state” so that the host weapon is not damaged by excessive bolt group velocity. Fire the weapon with one round in the magazine, if the weapon does not lock open on an empty mag - increase the power delivered to the carrier by rotating the adjustment collar to the next higher number and repeat. If the highest number (13) is reached the weapon still does not lock open on empty mag - rotate the main housing to the next larger pass though port size, return the adjustment collar to lowest setting (0), and begin

the test again, repeat until baseline operation is achieved.

-Step Two: Verify the firearm can cycle appropriately in the baseline position. It is best to start with a full magazine to make sure the carrier momentum can overcome the friction of rounds pressed against its underside, with the selector in the semi-automatic position so the disconnector is struck, and achieve bolt lock once the magazine is empty. A slightly more energetic than baseline setting may be chosen in order to ensure reliability across various environmental and ammunition variables.

-Step Three: Repeat this process to determine best settings for each ammunition type and muzzle device such as suppressors.

Most weapons have a setting that bridges the gap between suppressed and unsuppressed, best way to find this setting is to test the various ammunition types and accessories you intend to use.

Most weapons/suppressors also have a “perfect” setting for suppressed, and then a completely different setting to achieve “perfect” for unsuppressed. It is very helpful to test all configurations and make notes. The markings on the unit make it very easy to repeat known “good” configurations.

Do not be tempted to run any weapon you rely on - at the very lowest gas setting. Ammunition/weather/carbon fouling can potentially combine to rob just enough energy to cause a malfunction if the gas setting is set too close to failure point.

Cleaning: high round count/suppressed fire can result in carbon build up over time, especially if the adjustment collar is rarely moved between

positions.

ACDelco GM top engine cleaner PN: 10-3007 has been found to be very effective at dissolving carbon deposits. Simply remove the regulator/ piston from the host weapon, place in small disposable plastic container - and soak/scrub per instructions on the label. A toothbrush works well at cleaning the various small features.

At the time of this publication, 13oz aerosol containers can be purchased from Amazon.