



# JP ENTERPRISES

Product:  
JPGS-10D

## DETENT ADJUSTABLE GAS SYSTEM

Two-piece .875 bore minimized stainless steel  
with detent adjustment

### PARTS INCLUDED

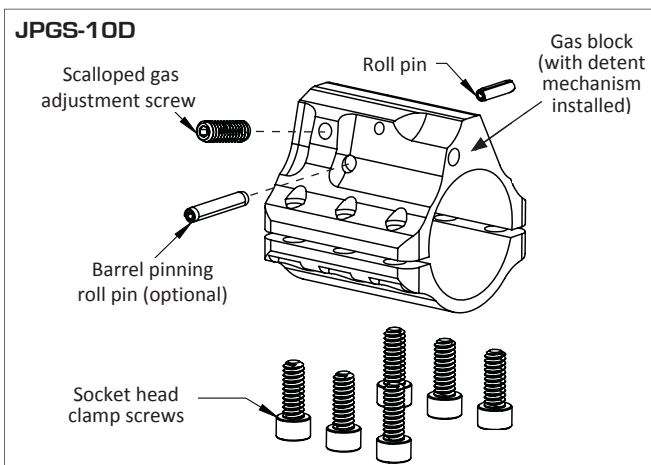
- .875 bore gas block (two pieces) preassembled with detent mechanism
- Six (6) 6-32 x 3/8" socket head cap screws
- One (1) 6-32 scalloped gas adjustment screw
- 1/16 hex key
- T15 Torx key
- 5/64" x 5/16" roll pin (for gas tube)
- 3/32" x 9/16" roll pin (for optional pinning)

### CAUTION:

**REMOVE THE MAGAZINE AND VISUALLY CHECK THE CHAMBER TO ENSURE THAT YOUR FIREARM IS UNLOADED.**

This small-bore JP Gas Block is designed for use on barrels with a .875 gas block journal and should fit with little or no modification. We strongly encourage you to read through these instructions once before beginning the installation process. This installation includes optional use of Loctite® 243 and 609 or equivalent thread lockers, which are not included in the package.

This minimized version of the JP Adjustable Gas System is designed to fit under most models of free-floating hand guards. Keep in mind that while this gas block will function easily with JP MK III Hand Guards, the accessibility of the adjustment screw will vary with other brands.



## BARREL PREPARATION

1. If you are installing this device on a barrel that is already in assembly in your upper, first remove the takedown pins and separate the lower and upper assemblies to make the job easier.
2. Secure the upper assembly in an appropriate vise. We recommend using our soft-anodized JP Vise Clamps or padded vise jaws.
3. If you already have a gas block installed, you will need to uninstall it along with any other components that will cover or block the gas block such as the hand guard. If you intend to reuse the original gas tube, remove the roll pin securing it in the existing gas block using a 1/16" drift.
4. If you've removed an old gas block or front sight, inspect your gas block journal for any high spots or burrs. File any high spots to ensure a tight seal with the gas block.

## INSTALLATION

1. Making sure that the gas adjustment set screw is not installed in the upper half of the gas block, insert the gas tube and secure it using the gas tube roll pin supplied. One side of the gas block has a pin hole enlarged to facilitate starting the pin. It may be necessary to run a 6-32 bottoming tap into the screw hole before installing the adjustment set screw due to it abutting the bottom of the gas tube.
2. Install the 6-32 scalloped gas screw as shown. Thread the screw in until it bottoms out, and then turn it back until you feel the detent engage the screw. At this point, the screw just fully occludes the gas port. Be aware that the detent mechanism is captured in the gas block, so the adjustment screw can be removed and reinstalled without danger of losing the detent.

The scalloped adjustment screw is designed to engage the detent for the full length of useful adjustment and to disengage beyond that. The range of detent engagement indicates that the gas port is fully occluded at one end and fully open at the other.

3. With the gas tube installed, slide the open end of the tube through the gas tube hole in the upper receiver until the gas block abuts the shoulder behind the gas port collar of the barrel. Take care not to scratch the barrel.
4. Align the gas block to the barrel. If you are using a JP Supermatch or similar barrel, ensure that the gas block is seated against the shoulder of the gas block journal.

If your barrel is designed for a Mil-spec gas block and hand guard spacer, you will need to move the gas block forward approximately .025" from the shoulder to account for the hand guard retainer. Otherwise, you will need to measure the distance from the gas block shoulder to the center of the gas port to ensure proper alignment to the gas block.

5. Use a level to align the top of the gas block to the upper receiver rail. This will ensure the gas ports in the gas block and the barrel are aligned radially.

At this point, you can test the gas block with compressed air to ensure proper alignment. With the bolt inserted and closed, push the air nozzle up to the muzzle and apply air while moving the gas block around until you hear maximum flow.

6. Position the lower half of the gas block and install the socket head screws to retain its position. Initially, install the screws only finger tight. Then, go back and tighten each, bit by bit, to approximately 18-20 inch-pounds of torque.

For added stability, you can apply Loctite® 243 to the clamp screws and/or Loctite® 609 between the barrel and gas block to more permanently secure them. If you use thread locker, make sure the surfaces have been cleaned with solvent. **Before use, allow all thread locker to set up according to the product instructions.**

### PINNING THE GAS BLOCK

For added stability and reduced potential for migration under heavy use, this model of JP gas block is designed to facilitate pinning to the barrel, though be aware that this involves permanent modification to the gas block and the barrel. While this process can be performed with a hand drill, a drill press is better suited to the task.

With the gas block mounted as described in these instructions, locate the pilot hole indicated in the diagram and use a 3/32" to drill all the way through the gas block and barrel, and out the other side. Then, with a hammer and suitable punch, drive in a 3/32" x 5/8" roll or spring pin so that it does not protrude past the exterior wall of the gas block on either side. Due to the QPQ coating, you'll want to use a carbide drill bit to avoid excessive wear.

## GAS BLOCK SETUP

Most rifles cycle faster than is necessary, and the resulting "bolt slamming" effect is a noticeable part of the recoil impulse. The main purpose of our adjustable gas blocks is to allow adjustment of port pressure to the operating system, thereby fine-tuning the bolt velocity. This results in a smoother shooting rifle, especially if you already have a JP Recoil Eliminator or Compensator. Additionally, the JP Adjustable Gas System is useful in obtaining optimum port pressure on otherwise difficult-to-run setups such as suppressed weapons, short-barreled weapons or nonstandard cartridges. These steps will walk you through setting your gas block for the particular load you'll be using.

1. Begin by turning the gas adjustment screw in all the way. Then, back it out until you feel the detent engage, which means the screw is just past fully occluding the gas port. The symptoms of too much gas and too little gas can actually appear similar enough to be

mistaken for each other. So, to determine the optimum gas setting, you'll want to start at a setting that is definitely too low and work up from there.

2. Back the adjustment screw out one full rotation (five clicks). Load a single round into the magazine, chamber it, and fire. If the bolt doesn't open at all, open it another three clicks and try again. Most likely, the bolt will short stroke at this setting. If that is the case, clear the rifle before proceeding.
3. Back the screw out another two clicks and fire again. Repeat this sequence until the carrier locks open after the round has been fired. Verify this setting with a few more rounds. If the bolt consistently locks back, you've found the optimum gas setting. Still, you may want to open the valve another two to three clicks for reliability, especially if you expect to shoot different or unknown loads.

## **CARBON BUILDUP**

As carbon buildup begins on the gas adjustment screw, there may not be a solid click feel to the screw the first time it is turned after extended use. A half turn back and forth on the screw should clean out some of the buildup and return its normal feel. A small amount of oil on the adjustment screw will also help prevent buildup and extend time between cleanings.

We recommend turning the adjustment screw back and forth about a half turn every 500-1000 rounds to remove carbon fouling and ensure that your screw will not seize. Periodically, you may find that a more thorough cleaning of the adjustment screw is required. The most repeatable way we have found is to turn the screw all the way in, counting the number of clicks, until it bottoms out. The screw can then be removed for cleaning without losing any small parts since they are captured within the gas block.

Once the screw is cleaned, apply a small amount of oil, and reinstall it in the gas block until it bottoms out. Then, simply back the screw out the same number of clicks you counted from your gas setting. This should leave the gas block tuned as it was before the maintenance.

## **CHANGING AMMO AND COMPONENTS**

Keep in mind that the gas block has been set for the specific ammo you've tested it with and still may not cycle reliably or optimally with other loads due to their different pressures. Make sure to test the valve setting with any ammunition you intend to use in competition. If your rifle is used for law enforcement or military purposes, we recommend running your rifle with the gas valve fully open so as not to compromise reliability.

Also, be aware that new bolt assemblies and carriers will have more friction in their relationship than parts that have worn in. These may require a break-in period when the gas block valve will have to be set further open until the friction between the parts is reduced. It helps to polish the bore of the carrier on a new bolt to reduce friction and mate the parts.

**THANKS FOR YOUR BUSINESS!**