



# JP ENTERPRISES

Product:  
JPGS-8D

## DETENT ADJUSTABLE GAS SYSTEM

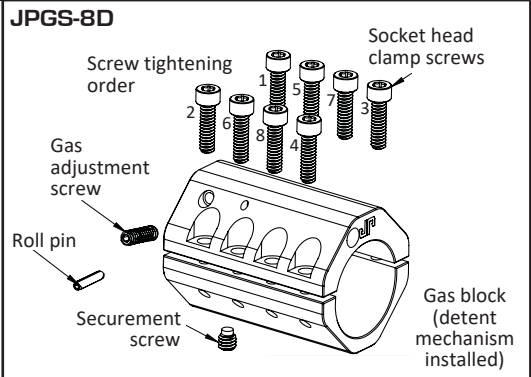
Two-piece .936 bore minimized aluminum  
with detent adjustment

### PARTS INCLUDED

- .936 bore gas block (upper and lower pieces)
- Eight (8) 6-32 x 1/2" socket head cap screws
- One (1) 6-32 x 3/8" gas adjustment set screw
- 5/64" x 3/8" roll pin
- One (1) 8-32 x 3/16" cup point set screw (black)
- One (1) 8-32 x 3/16" dog point set screw (silver)
- 1/16 hex key
- T15 Torx key

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

This large-bore JP Gas Block is designed for use on barrel contours of .936. For most bull barrels, this gas block should fit with little or no modification. We strongly encourage you to read through these instructions once before beginning the installation process paying particular attention to the **Securing the Gas Block** section below. This installation will require the use of Loctite® 243 or an equivalent thread locker.



### BARREL PREPARATION

1. If you are installing this device on a barrel that is in assembly in your upper, remove the takedown pins and separate the lower and upper to make the job easier.
2. Secure the upper assembly in an appropriate vise. We recommend using our soft-anodized JP Vise Clamps or a padded vise jaws.
3. If you already have a gas block installed, you will need to uninstall it along with any other accessories that will cover or block the gas block such as the hand guard and muzzle treatment, depending on your situation. If you intend to reuse the original gas tube, remove the gas tube 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 down to ensure a tight seal on the gas block.

## INSTALLATION

1. Making sure that the gas adjustment set screw is not installed in the gas block, insert the gas tube so that the gas port in the tube faces down towards the barrel. Line up the roll pin hole on the tube and gas block and then secure the tube using the gas tube roll pin supplied. The roll pin must be installed from the left side of the gas block until it bottoms out.
2. Install the upper section of the gas block over the gas block journal, sliding the gas tube through the gas tube hole in the upper receiver. Then, either slide on or directly push the lower section into place. It will clip on with a little force and retain its position. Install the eight 6-32 clamp screws and tighten lightly to retain the gas block's position.
3. 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.

4. 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. You can also lay the upper on a flat surface so that the receiver rail and gas block rail are parallel.

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.

5. Snug down the clamp screws, then go back and tighten each bit by bit in the indicated order to approximately 18-20 inch-pounds of torque. You may apply Loctite® 243 to the screws for added stability as well as Loctite® 609 between the barrel and gas block to more permanently secure them. If you use thread locker, clean the surfaces thoroughly with solvent. **Before use, allow all thread locker to set up according to the product instructions.**
6. Run a 6-32 H1 or H2 bottoming tap into the gas adjustment hole from the side to score the gas tube. A normal tap may be used, but the tip may have to be ground off. The purpose here is to cut threads into the bottom of the gas tube to allow the adjustment screw to position tightly against the gas tube. This tapping can be performed even though the detent mechanism is in place.
7. Thread the gas adjustment screw in until it bottoms, 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 gas setting is retained by the detent mechanism, so thread locker should not be applied to the adjustment screw

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.

## SECURING THE GAS BLOCK

To secure the JPGS-8 gas block in place, the bottom piece features a threaded hole to allow for pinning the gas block to the barrel, and two securement set screws are provided for this purpose. The black cup point set screw is intended for use on barrels that already have a spot-drilled hole opposite the gas port while the silver dog point set screw is for installations where a milling machine or drill press is available. Follow the set of directions below as appropriate.

### CUP POINT SET SCREW (pre-existing barrel hole)

1. Apply a small amount of Loctite® 263 or equivalent to the cup point set screw.
2. Insert the set screw into the threaded hole on the bottom of the JPGS-8 finger tight.
3. Finish by using a 5/64 hex key to apply mild torque to the set screw. Allow the thread locker to set before live fire.



### DOG POINT SET SCREW (no pre-existing barrel hole)

1. With the JPGS-8 installed, insert the cup point (**not** dog point) set screw into the threaded hole on the underside of the gas block until it is finger tight. Loosen the screw and then retighten it, repeating this procedure several times to make a guide mark on the barrel. (The cup point screw will not be needed again.)
2. Remove the JPGS-8 from the barrel.
3. Safely set up the barrel in a milling machine or drill press and drill a .125 diameter hole .060 deep at the spot marked above.
4. Reinstall the JPGS-8 completely as described above.
5. Apply a small amount of Loctite® 263 or equivalent to the dog point set screw.
6. Finger tighten the set screw into the threaded hole on the bottom of the JPGS-8.
7. Finish by using a 5/64 hex key to apply mild torque to the set screw. Allow the thread locker to set before live fire.

## 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, which will result in a smoother shooting rifle, especially if you already have a JP Recoil Eliminator or JP 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. To determine the optimum gas setting, 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 builds up 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 three clicks every 500-1000 rounds to remove fouling and prevent the screw from seizing.

Periodically, you may find that a more thorough cleaning of the adjustment screw is required. The most repeatable method 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 for duty use, we recommend running the gas valve fully open so as not to compromise reliability.

Also, 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!**