



D2 SERIES ADJUSTABLE GAS SYSTEM

- JPGS-11D2 [.750]
- JPGS-12D2 [.875]

PARTS INCLUDED

- Gas block (two pieces) preassembled with detent mechanism
- Four (4) 6-32 x 3/8" socket head cap screws
- T10 Torx key
- 5/64" x 5/16" roll pin (for gas tube)
- 3/32" x 9/16" roll pin (for optional pinning)

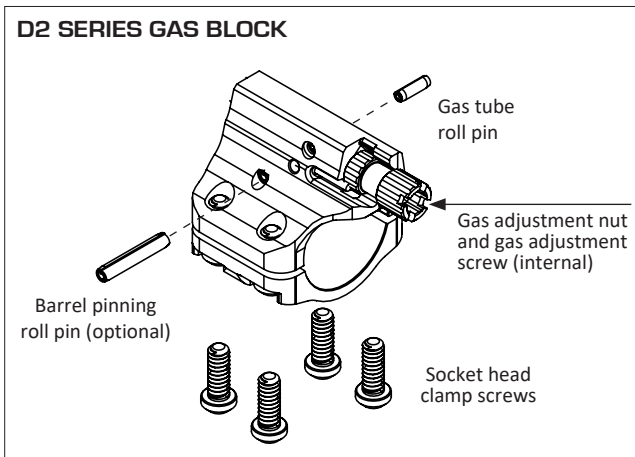
CAUTION:

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

This **D2 Series JP Detent Adjustable Gas System** is designed for use on barrels with either a .750 (JPGS-11D2) or .875 (JPGS-12D2) gas block journal and should fit with little or no modification. These minimized models are will fit under most all models of free-floating hand guards, including our MK III and M-LOK Series.

The D2 Series gas blocks feature front-access valve design that can be adjusted using a 5/32 hex key or screw driver. The outer adjustment nut controls the position of the internal adjustment screw, which regulates the internal gas setting.

We strongly encourage you to read through these instructions once before beginning the installation process. Note that this installation includes optional use of Loctite® 243 and 609 or equivalent thread lockers, which are not included in the package.



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 are replacing an existing gas block, remove it now along with any other components that will cover or obstruct access to 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 new block.

INSTALLATION

1. Insert your 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.

As assembled, the gas block should allow for the gas tube to insert and align without issue. However, if the adjustment nut has been rotated, the gas tube may not insert. Alternately, your gas tube may have such a loose fit that you have difficulty aligning it to install the roll pin. In either case, you can turn the adjustment nut in to a turn or two to bring the components into alignment. In the case of a loose gas tube, this will provide additional support to the tube.

2. 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.
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.

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. Position the lower half of the gas block and install the socket head screws to retain its position. Install the screws only finger tight at first. 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 muzzle brake. 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 nut clockwise in all the way. This is the fully closed position, and there are 52 clicks of adjustment (counter-clockwise) to reach the fully open position.

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 (twelve 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 four 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 few clicks for reliability, especially if you expect to shoot different or unknown loads.

CARBON BUILDUP

Carbon buildup on the **D2 Series** gas blocks will be less of a problem compared to other gas blocks because the adjustment mechanism is largely external. If the adjustment screw becomes fouled internally, the adjustment nut can be turned with a significant amount of torque using a 5/32 hex key or screw driver. A half turn back and forth on the screw should clean out some of the buildup and return normal function. 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. 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.

To remove the adjustment screw, turn the adjustment nut counter-clockwise until the screw backs out through the nut. Once the screw is cleaned, apply a small amount of oil, and reinstall into the nut and threading it back in by turning the adjustment nut clockwise. 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!