Brock's Performance • 4064 E. Patterson Road • Dayton, OH 45430 • Phone: 937-912-0054 • Fax: 937-912-0062

HAYABUSA (99-20) & B-KING (08-11) CLUTCH CUSHION KIT INSTRUCTIONS

The Clutch Cushion Kit allows for a smooth chatter-free clutch operation during dead stop launches. The springs included in the kit increase pressure at the clutch resulting in quicker ET's.

Check Package Contents:

The Package Contents Include:

1. One (1) Anti-Chatter Ring
2. One (1) Dual Stage Clutch Ring
3. Two (2) Green Clutch Springs
4. Four (4) Purple Clutch Springs
5. One (1) 6 Position Clutch Lever Cam
6. One (1) Ball Bearing
7. One (1) Clutch Drive Plate (02-19 Only)
8. Six (6) Clutch Spring Support Studs (08-19 Only)
9. Six (6) Hex Bolts (08-19 Only)
10. Six (6) Washers (08-19 Only)

If your package contents differ, please contact Brock's Performance at 937-912-0054.

For additional installation support please refer to the OEM service manual.

Notes before beginning installation:

Brock's Performance Clutch Mod is required to be installed with the Clutch Cushion Kit.

The Clutch Cushion Kit is not designed to compensate for failing clutch components. Inspect the clutch hub, outer basket, and backing plate springs before the installation of this kit. The clutch hub develops notches in the areas where the steel plates drive it. Slide a steel clutch plate over the hub; preload the plate to the left while holding the hub stationary and attempt to slide the steel in and out. If resistance is felt over any notches, file them smooth or replace the clutch hub.

Perform the same test with the outer basket and a friction plate (preloading the friction to the right). File the notches or replace the outer basket. Also, inspect the outer basket backing plate springs for sag. Shake the basket. If at least 1 spring does not rattle (FYI: Even purchased new, the Hayabusa comes with several loose springs), the baskets are usually fine for a while, assuming the notches can be filed smooth. If all of the springs are loose in the pockets, the basket is damaged! Rebuild or replace it.

Damage to the sprocket cover, which houses the hydraulic clutch slave cylinder, is likely if the springs bind. The springs have a minimum installed height of .790" (20 mm). If your existing sprocket cover is cracked, the cushion kit will finish it off! Inspect the cover before installation. Lock-up users will also destroy the cover unless a suitable brace is installed.

The Clutch Cushion Kit was designed to perform best with the stock hydraulic clutch system, Brock's 6 Position Lever Cam, and OEM steel and friction plates (aftermarket Clutches are not recommended). If using an existing clutch, there will be an extra (thin) friction plate left over. Keep this plate for use at a later time. Regularly inspect for wear and/or damage. If any friction plates show signs of glazing or smearing of the pads, or they measure less than the service limit (see the service manual for specs) replace only those plates. The same is true of the steel plates if they are warped or galled due to heat. Simply stack all of the steel plates together and look for light between the plates, replacing only the plates that are warped. It is typical for the steel plates to turn blue and show hot spots. Do not be alarmed. A no-bar rider must slip the clutch off of the line to prevent wheelies or tire spin; this is what generates the discoloration.

Instructions:

1. Support the bike using a wheel stand or lift.
2. Place a wood block (or similar) between the clutch lever and grip so it cannot be pulled inward.
3. Remove the clutch cover. Take to care to avoid damage to the gasket as this can be reused. Replace as needed.
4. Remove the OEM clutch springs (springs will not be reused) and pressure plate.
5. Remove clutch plates (keep in order of removal).
6. Remove OEM spring washer and seat.
7. For (08-19) Hayabusa's, remove OEM clutch spring studs.
8. Perform the inspection listed on page 1 and reinstall the clutch basket assembly
9. Install Brock's Clutch Mod.
10. Torque the inner clutch hub nut to 68.5 lb-ft (95 N·m) for (99-07) or 108.5 lb-ft (150 N·m) for (08-19). Stake nut in place after installation.
11. For (02-19) Hayabusa's, follow the steps in the diagram (page 3) to install the Clutch Drive Plate.
12. For (08-19) Hayabusa's, replace the OEM clutch spring studs, spring bolts, and washers with the supplied parts. Apply red threadlocker to the threads of the clutch spring studs. Torque studs to 16.5 lb-ft (23 N·m).
13. Position the small lip of the Cushion Ring over the flange on the inner clutch hub.

Note: DO NOT insert a steel plate into the aluminum cushion ring. See Lip/Flange placement on the drawing (page 4). When properly installed the smooth side will face outwards. The cushion ring must be centered on the rear flange of the inner clutch hub and NOT resting on the splines or titled in any way.

14. Install the Dual-Stage Cushion over teeth of the inner clutch hub and into the center hole of the Cushion Ring.
15. Position a steel plate, with the rounded edge facing away from the engine, over the Clutch Hub until it touches the Cushion Ring. The rounded edge is small; feel for it with your fingers.

Note: Apply a small amount of oil to the friction plates before installation. There are a total of 9 steels and 9 Fibers used: 2 thick fibers (No.1) 0.15" (3.8mm) thick and 7 thin fibers (No.2) 0.12" (3.0mm).

16. Install a Thick (No.1) Fiber plate then another Steel, this time with the rounded edge facing TOWARD the engine. The remaining Steels will be positioned in this configuration. Continue the installation: Steel/ Thin (No.2) Fiber, and finish with a Thick (No.1) Fiber. Be sure to insert the outermost Thick (No.1) Fiber drive plate claws into the other slits of the outer basket. A diagram is shown in the Suzuki manual.
17. Install the Clutch Pusher Assembly and related components in the proper order. Install the Pressure Plate, making sure that the teeth on the Pressure Plate mesh with the Clutch Hub.

Note: The slave cylinders have a tendency to creep. If the teeth don't seem to align correctly, remove the pressure plate and press the Clutch Pusher Assembly toward the engine with your thumb and index finger. The Pressure Plate should now align and seat correctly.

18. Position the supplied springs in the pockets as shown (Page 5, Figure 1). Four of the springs are heavy-duty (Purple) and two of the springs are extra heavy-duty (Green). These springs are specifically designed for use with the Clutch Cushion Kit. **The .180" spacers supplied with Brock's Clutch Mod are NO Longer Required!**
19. Remove the lever block. Check the clutch for proper operation by visually inspecting the pressure plate movement while pulling the clutch lever.
20. Check to verify the correct **No Longer Required** (Page 5, Figure 2) parts remain.
21. Install the Clutch Cover and torque bolts to 84 lb-in (9.5 N·m).
22. Refill fluid as needed.
23. Install and adjust the 6 Position Lever Cam (see Lever Cam Instructions)**.**

Caution: Do not attempt to use the Hayabusa Clutch Cushion kit without the Lever Cam installed! Clutch drag or creep may occur, leading to a potentially dangerous situation or burned clutch plates.

24. Set the Lever Cam to position #2 and perform several dry-hops to seat the Clutch/Mod assembly. Then adjust the Lever Cam to rider's desired position. See special note on the lever cam instructions to adjust from position #1.

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For Questions and Comments:
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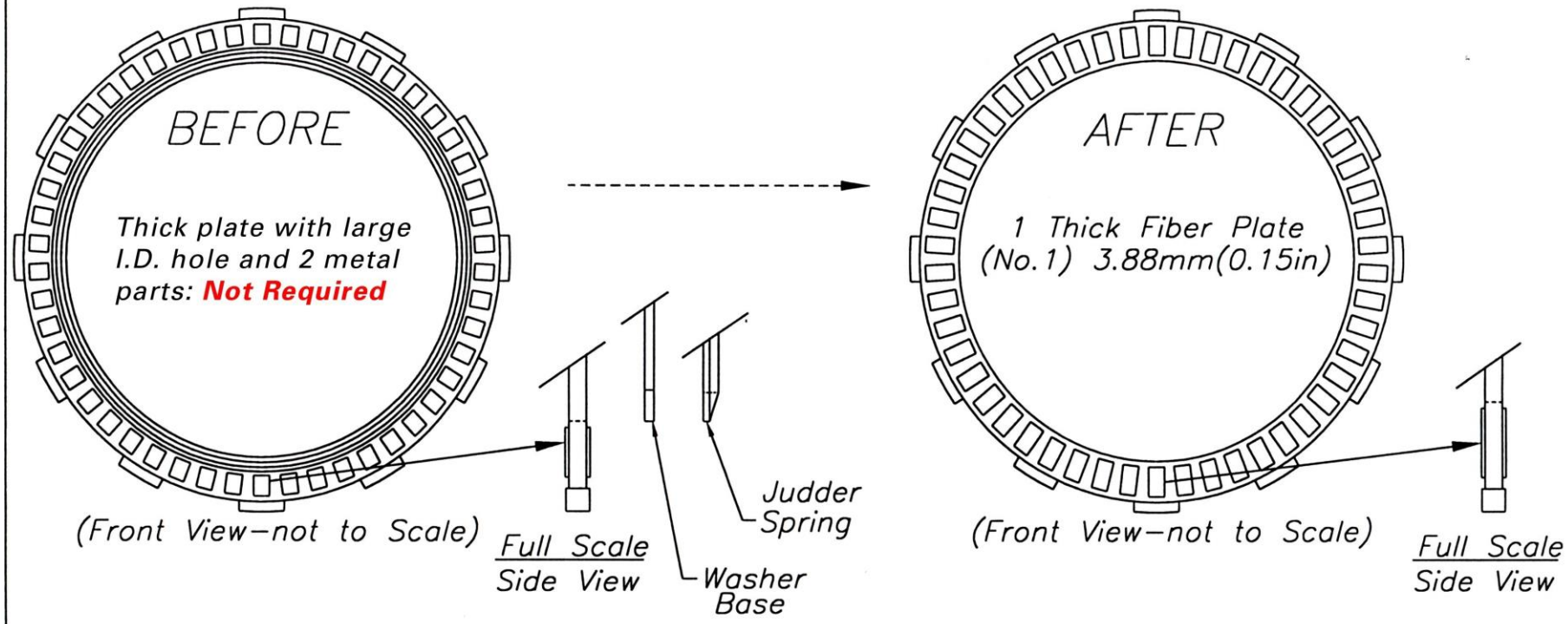
(02-19) Hayabusa Supplement - ** PERFORM THESE STEPS FIRST**



(02-19) Hayabusa

1. Remove the innermost thick fiber plate (with large hole), base washer and judder spring.

2. Replace these three components with the single enclosed thick fiber plate.

3. This converts the clutch assembly to the previous model.

4. Continue Clutch Cushion Kit assembly as described on page 2 of the Clutch Cushion Kit instructions.

Brock's PERFORMANCE

TITLE Supplemental Drawing Busa Clutch Cushion		
SCALE Noted	DESIGNER BROCK D.	MAT'L
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SHEET OF	DRAWING NO. 1300_Cushion.dwg	
SHEET SIZE A