



## 4 AND 6 PISTON DIRECT BOLT-ON CALIPERS

### ATTENTION

Statements in these instructions that are preceded by the following words are of special significance:

#### Warning

This means there is the possibility of injury to yourself or others.

#### Caution

This means there is the possibility of damage to the motorcycle.

#### Note

Information of particular importance has been placed in italics.

### Important Notice

- Before installing a caliper or rotor kit, read through these instructions completely; this will familiarize you with the way in which the parts fit together and the tools needed to complete the job.
- In the course of installing these kits you will be replacing the stock brake caliper with a high-performance brake caliper. Please pay special attention to the section of the instructions dealing with the centering of the caliper over the brake rotor.
- PM products are design to use both DOT 4 and DOT 5 brake fluid, please use the manufactures suggested brake fluid. Never reuse brake fluid, Never mix DOT 4 and DOT 5 brake fluid, don't use brake fluid that you are not sure is new and clean. This installation should only be attempted by a mechanic with a thorough understanding of and experience with motorcycle hydraulic systems.
- If you plan on using the stock brake line/hose that runs between the master cylinder and the caliper, then you will be just switching the line at the caliper's banjo fitting. We recommend that you do not disconnect the line from the stock caliper until you have the new caliper bolted in place and are ready to bleed the brake system. This way the brake fluid will not run completely out of the master cylinder before you have the new caliper conected up to it.

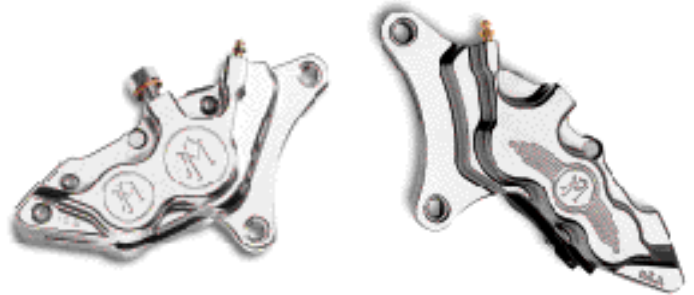
### WARRANTY

Performance Machine Inc. warrants to the original purchaser that the parts of this Brake Kit to be free of manufacturing defects in materials and workmanship for a period of one (1) year from the date of purchase. In the event warranty service is required, you must call Performance Machine immediately with a description of the problem.

If it is deemed necessary for Performance Machine to make an evaluation to determine whether the part is defective, [a return authorization number will be given by Performance Machine]. The parts must be packaged properly so as to not cause further damage and returned prepaid to Performance Machine with a copy of the original invoice of purchase and a detailed letter outlining the nature of the problem. If after the evaluation by Performance Machine the part was found to be defective it will be repaired or replaced at no cost to you. If we replace it, we may replace it with a reconditioned one of the same design.

Performance Machine shall not be held liable for any consequential or incidental damages resulting from the failure of a Performance Machine part.

Performance Machine shall have no obligation if a part becomes defective as a result of improper installation, modification or abuse.



### Disclaimer

These Performance Machine parts are designed for high performance motorcycle applications and are intended for the very experienced rider only. The installation of these Performance Machine parts may adversely affect or void your factory warranty.

## Fitment

This Performance Machine bolt-on caliper is designed to fit all 1984 and later Harley-Davidson® front fork/wheel assemblies except Springer-Softail®, FX and 4-speed FL models. (Heritage-Springer® will require bolt kit #0109-0100-CH)

## Preparation

Before starting to mount this caliper, please check the packing list to make sure that the caliper you received is the correct one for your model motorcycle. Have a new bottle of the manufactures suggested brake fluid on hand.

## Dual Disc Models

On motorcycles that have dual disc front brakes, it is recommended that you install the calipers on one at a time and bleed the air out of the brake system on the side with the new caliper before installing and bleeding the second caliper. Installing and bleeding the calipers in this manner will keep the master cylinder from running dry by draining into two empty calipers. This will make the brake system easier to bleed.

## Tools

You will need the following hand tools:

1. 5/16" hex wrench (commonly called an allen wrench)
2. 3/8" 12 point socket or box end wrench
3. 9/16" socket wrench
4. Torque wrench
5. 1/4" end wrench
6. 1/8" inside diameter rubber hose, 2' long
7. empty coffee can

## Removing The Stock Caliper

Using a 5/16" hex wrench, remove the two mounting bolts from the stock caliper, see Photo #1. Remove the caliper from the fork leg and reinstall the lower mounting bolt into the stock caliper, this will keep the outer brake pad carrier from falling out. Using a short piece of wire, hang the stock caliper up out of your working area, see Photo #2. Tape or zip tie the handle bar master cylinder lever 1" from the handle bar. This will prevent excessive fluid loss when removing brake line at caliper. Do not remove line yet.



**Bolt-On Caliper Kit**



**Stock Caliper Assembly**



**Photo #1**



**Photo #2**

## Installing The Caliper

### Note

*Before installing your new PM caliper, check the brake rotor for wear and flatness; use an appropriate straight edge. If the rotor is worn or warped, replace it with a new one prior to installing this caliper.*



**Photo #3**



**Photo #4**

Slip the new caliper over the rotor and align its mounting flanges with the mounting bosses on the fork slider, see Photo #3. Install one of the 3/8X1 1/8" socket head bolts with one 3/8"lock washer and one 3/8"flat washer through the top mounting boss on the fork slider into the upper mounting hole on the caliper, see Photo #4. Tighten this bolt finger tight and install a second socket head bolt with lock and flat washers into the lower mounting boss. Again,tighten this second bolt only finger tight.

## Centering The Caliper



**Photo #5**

After you have installed the new PM brake caliper onto your motorcycle you must align its center to the center of the brake rotor; otherwise you will not get maximum brake performance or brake pad wear. The center line of the caliper is where the two halves of the caliper are joined together, see Photo #5. Look down from the top of the caliper onto the rotor; if it is off-set to the outside then you will need to install mounting bolt shims. The caliper shim kit that is included in the caliper kit contains 6 shims: 2ea. .016",2ea. .032"and 2ea. .062". These shims are to be inserted between the mounting boss on the fork slider and the caliper's mounting boss to position the caliper so that its center line is over the rotor's center line, see Photo #6. To install the shims, remove the caliper mounting bolt slip the shim into place and replace the mounting bolt, see Photo #7. Check the caliper for centering at both ends, on most installations the same thickness of shim will be needed behind each mount.



**Photo #6**

After the caliper is centered over the rotor, torque the caliper mounting bolts to 22 foot pounds.



**PHOTO #7**

### Warning

Failure to center the brake caliper over the brake rotor will impede the performance of the brakes. Rotate wheel slowly and with wheel raised, check for possible interference between caliper, wheel and disc assembly. After brake is bled, check for free rotation before and after master cylinder is activated.

## Attaching the Brake Line

Remove the end of the brake line from the stock caliper; you will need a 3/8"12 point socket wrench or box end wrench to remove the banjo bolt from the stock caliper. Attach the end of the brake line to the new PM caliper using the PM supplied banjo bolt and copper washers, one washer goes on each side of the banjo fitting; see Photo #8. Remove tape or zip tie from handle grip master cylinder.

### Note

*Position the banjo fitting so that the brake hose does not rub on the front fender or other part of the motor cycle.*

Using a 9/16"socket,tighten the new banjo bolt to 15 foot pounds of torque.

## Bleeding The Brake System

You will find it is easier to bleed the brake system if you have a helper. First fill the master cylinder with the manufactures suggested brake fluid and put the cover back on the master cylinder. Attach a short length of rubber hose to the bleeder screw on the master cylinder. Attach a short length of rubber hose to the bleeder screw on the brake caliper, see Photo #9; put the other end of the hose into a coffee can or other suitable catch can. Have your helper pull in on the front brake lever several times, then hold the lever in. See Photo #10. Open the bleeder fitting on the caliper, you will need a 1/4"end wrench for this. Air and brake fluid should come out of the end of the hose that is connected to the bleeder fitting. After the air and brake fluid have stopped coming out of the hose, close the bleeder fitting; your helper can now release the brake lever. This action will force the air that is trapped in the brake system out the bleeder screw, because the brake system can contain more air than you can expel in one bleeding, you will need to repeat this procedure more than once. Check the fluid level in the master cylinder after each bleeding, don't let the master cylinder run dry as this will push air back into the brake system which will require the bleeding procedure to be started over again.

Do not over tighten the bleeder screw.

### Warning

Failing to bleed all the air out of the brake system will impede the performance of the brakes.



Photo #8



Photo #9



Photo #10



Completed Installation