

CARBON/CARBON BRAKES

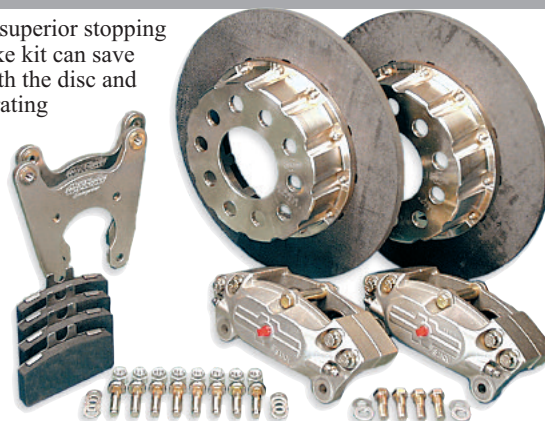
MW Carbon/Carbon brakes offer the advantage of an extremely light-weight rotor with superior stopping ability. When compared to a standard kit with drilled steel rotors, a Carbon/Carbon brake kit can save you as much as 10 lbs of rotating weight. Carbon/Carbon brakes are unique because both the disc and friction pad are made of the same material, and do not suffer brake fade at elevated operating temperatures. The square drive lug system allows for the expansion of the aluminum mounting hat without applying pressure to the rotor. MW brakes are produced from 2D PAN knit Carbon Fiber MW Carbon/Carbon kits include MW race proven 4 piston calipers with hard Teflon-Anodized pistons, Carbon brake pads with Titanium heat shields, billet aluminum mounting brackets, and all the required fasteners.

Brake Technology has changed dramatically over the past few years and Mark Williams Enterprises is in the forefront.

81200 Carbon/Carbon Brake Kit \$4285.00
Fits MW 58580 or Lamb symmetrical type housing ends. 4-1/2", 4-3/4" and 5" bolt circle. Saves 12 lbs. over standard brake kit.

81250 Carbon/Carbon Kit for 15" wheels \$4285.00

81280 Carbon/Carbon Brake Kit \$4285.00
Fits Heavy Duty ends with 3.346 O.D. bearing 58595, 58598 and 58599 ends.

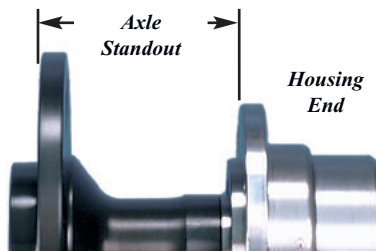


ALL MARK WILLIAMS 71000 SERIES SINGLE CALIPER REAR BRAKE KITS (SEE PAGE 62) CAN BE PURCHASED AS CARBON/CARBON FOR AN ADDITIONAL CHARGE

BRAKE SYSTEM TECH

CALIPER ALIGNMENT, CLEARANCE & POSITION

Axle stand out controls the alignment of the brake system and as a result is very critical. To check stand out first verify that the housing ends are perfectly aligned. Install axles and check axle stand out (face of axle flange to face of housing end) as accurately as possible. See the chart below for stand out dimensions for MW brake kits. Stand out should be + .015 of the dimension listed. Shims are available to correct the alignment. 71009 shim goes between the axle flange and brake hat that will move the disc outward .015". 71018 shim goes between the caliper and mount and will move the caliper inboard .015". Misalignment can cause caliper mount deflection, and is one of the causes of a "spongy" pedal. Install wheels to make sure caliper to wheel clearance is adequate on the diameter and face of the wheel. To bleed, the calipers they must be positioned at 3:00 or 9:00 o'clock. This allows the bleeder to be at the highest point of the piston cavity, ensuring that all air is removed from system.



Symmetrical ends	2.834"
Olds ends	2.834"
Large Ford ends	2.500"
Small Ford ends	2.500"
GM 10-12 Bolt ends	2.812"
Mopar ends	2.500"

PEDAL RATIO & MASTER CYLINDER

The master cylinder bore size influences the obtainable brake line pressure. Recommended master cylinder size when using two typical 4-piston calipers only in the rear is a single outlet, 7/8" bore master cylinder. If single piston front brakes are used in conjunction with two 4-piston calipers in the rear a dual outlet, tandem 1" bore master cylinder is recommended. When using 4-piston calipers front and rear a dual outlet, 1-1/32" bore master cylinder is recommended. Mounting the master cylinder to a frame rail or roll bar is recommended to ensure a solid mount. With the correct master cylinder in place the pedal ratio must be great enough to produce 1200-psi system pressure under severe braking conditions. A pedal ratio verses line pressure calculator is available on the Mark Williams website, www.markwilliams.com. We recommend using a pressure gauge connected to the system to verify the maximum available pressure before running the car. If the desired pressure cannot be easily attained the pedal ratio must be increased until the minimum pressure of 1000 psi is easily reached.

BRAKE LINES & FLUID

Aircraft AN-3 brake lines and fittings are recommended. Only stainless steel braided teflon hose, stainless or seamless steel tubing (3/16" x .028") should be used for brake lines. Lines should be secured to chassis rails to resist vibration and routed in such a way to avoid possible contact with wheels, tires and other moving parts. Joining hard line and braided line or "T"s should be done using a bulkhead fitting and a small tab welded to the chassis. Long runs should be done with hard tubing to avoid expansion of flexible line. The amount of flexible braided hose in the system should be kept to a minimum. See page 64 for AN -3 fittings and brake line. Use of DOT 4 or 5.1 fluid with a high boiling point and lubrication for seals and pistons is recommended. Do not use (DOT5) silicone fluids.

TROUBLE SHOOTING

Spongy Pedal Poor Stopping:

- A) Air in system. Bleed brakes, making sure that the bleed valve is the highest point.
- B) Disc warped (saucer shaped). Replace.
- C) Calipers not square with disc. Check housing end alignment, both concentricity and squareness.
- D) Linings worn on taper. Make sure that caliper is centered over the rotor and the caliper bracket is not deflecting.
- E) Master cylinder bore too small. Match master cylinder to the system. Check the line pressure.
- F) Master cylinder deflection. Stiffen master cylinder mounts.
- G) Pedal ratio wrong, low or high pressure

Brakes are locked up after run:

The piston in the master cylinder is not being allowed to return to the start location. The pressure relief hole is exposed to zero the line pressure. Re-adjust the linkage so that the piston completely returns. Make sure there is a positive stop on the pedal or lever. Do not rely on the retaining ring in the master cylinder for the pedal stop.

Excessive pad wear, disc shows excess heat:

- A) System pressure is too low causing a longer pressure applied time to stop. Pressure needs to be high enough to allow wheel lock at any time. Check the ability of the system to generate 1200 PSI.
- B) Pistons sticking in caliper, clean and overhaul calipers. Annual maintenance is required.

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