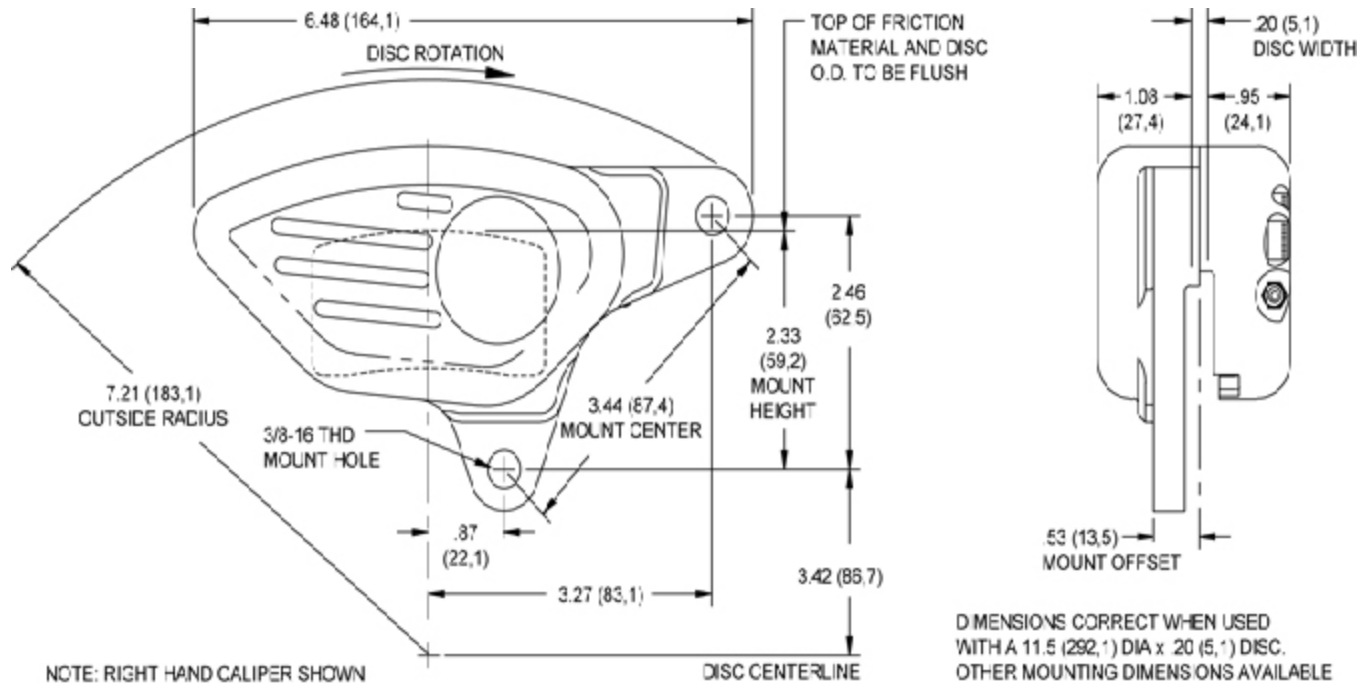


Material Drawing: Brake kit



Brake pads

There are many designs of brake pads (brake blocks). Most consist of a replaceable rubber pad held in a metal channel ([brake shoe](#)), with a post or bolt protruding from the back to allow attachment to the brake. Some are made as one piece with the attachment directly molded in the pad for lower production costs; brake pads of the [cartridge type](#) are held in place by a metal [split pin](#) or threaded [grub screw](#) and can be replaced without moving the brake shoe from its alignment to the rim. The rubber can be softer for more braking force with less lever effort, or harder for longer life. The rubber can also contain abrasives for better braking, at the expense of rim wear. Compounds vie for better wet braking efficiency. Typically pads are relatively short, but longer varieties are also manufactured to provide more surface area for braking; these often must be curved to match the rim. A larger pad does not give more friction but wears more slowly, so a new pad can be made thinner. In general, a brake can be fitted with any of these many varieties of pads, as long as the pad mounting method is compatible. Carbon-fibre rims, as on some disc wheels, generally have to use non-abrasive cork pads.

Ceramic-coated rims should be used with special pads because of heat build-up at the pad-rim interface; standard pads can leave a "glaze" on the ceramic braking surface, reducing its inherent roughness and leading to a severe drop in wet-weather braking performance. Kool-Stop, Mavic and Swisstop make "ceramic" pads, which contain substances such as chromium to improve heat tolerance.

Types of rim brakes

Rod brake system. Lateral play in the pivot for the rear brake rod allows for rotation of the handlebar

The **rod-actuated brake**, or simply **rod brake**, uses a series of rods and pivots, rather than [Bowden cables](#), to transmit force applied to a hand lever to pull friction pads upwards against the inner surface, which faces the hub, of the wheel rim. They were often called **stirrup brakes** due to their shape. Rod brakes are used with a rim profile known as the [Westwood rim](#), which has a slightly concave area on the braking surface and lacks the flat outer surface required by brakes that apply the pads on opposite sides of the rim.

The rear linkage mechanism is complicated by the need to allow rotation where the [fork](#) and handlebars attach to the frame. A common setup was to combine a front rod brake with a rear coaster brake. Although heavy and complex, the linkages are reliable and durable and can be repaired or adjusted with simple hand tools. The design is still in use, typically on African and Asian [roadsters](#) such as the [Sohrab](#) and [Flying Pigeon](#).