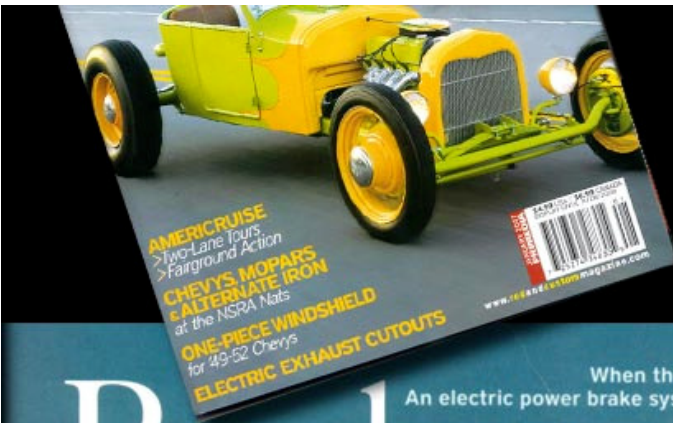


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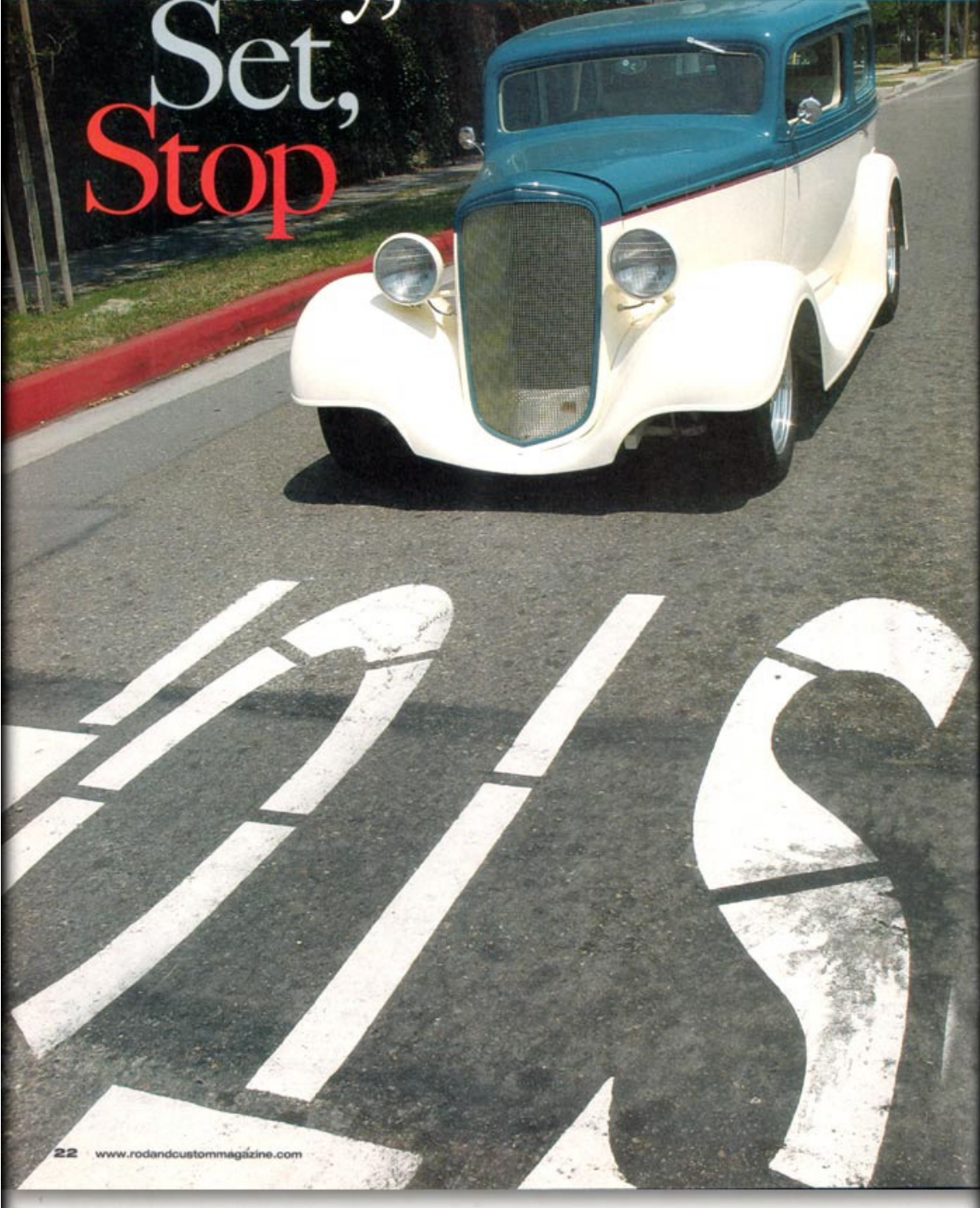


Ready, Set, Stop

When the sign says STOP, your brakes better obey. An electric power brake system is a smart way to make sure they do.

Electric Boost for Better Braking

By Tim Bernsau



We know that every one of our readers is an above-average driver. Unfortunately, everybody else on the road is a reckless maniac, hurrying to get someplace, chatting on a cell phone, and oblivious to the presence of hot rods. If you're going to mix it up with *that* kind of traffic, you need to make sure your rod is equipped with up-to-date brakes. Four-wheel discs are a good start, but if those discs function off of the old manual braking system, you're not getting the benefit of ultimate stopping power.

We found out about the Electric High-Power Master Cylinder Kit from ABS Power Brake at the Hot Rod & Restoration trade show, where it won the *Best New Product* award. Unlike other brake boost systems that run off of engine vacuum, the ABS unit runs off the car's 12-volt electrical power.

As luck would have it, ABS is only a couple exits down the freeway from the R&C offices (what isn't?), so we dropped in to learn a little more. The day we were there, they were installing a kit on a '35 Chevy sedan that had

manual front and rear discs. The owner was tired of the poor stopping performance, and wanted to do something about it.

Shop manager Pedro Gomez explained that when the customer gets his car back, the first thing he'll notice is improved pedal feel that won't require as much pressure to engage the brakes. He'll also notice an impressive reduction in stopping distance and time—and ultimately, a lot more peace of mind in the middle of traffic. *R&C*



The Electric High-Power Kit offers several main body designs. Part 10-56, which is being used on the '35 Chevy, comes with a rectangular or peanut-shaped reservoir measuring 10x5 1/4 inches. An 8-inch version is also available. This main body is installed in place of the old master cylinder, and can be mounted on the firewall or within the framerails. (There's no performance advantage to any specific location; it's a matter of preference and convenience.)



The first step in the installation is getting rid of the old master cylinder. The new unit will be mounted in this same location, using the existing bracket.



The ABS pump is equipped with an accumulator (on the left in the photo). The accumulator keeps the brakes pressurized. In the event of a power loss, the system retains power assist for approximately 25 pedal pumps before brake power is lost (as long as the ignition key is in the ON position). After that, it reverts to manual brakes. The wire harness is included.



The new master cylinder fits perfectly on the framerail where the old unit was previously mounted. The owner had accessed the old part through a window cut into the floor, which will continue to serve that purpose. ABS has equipped the product with a universal mounting bracket that can be used with the Ford, GM, or Chrysler bolt pattern. Additional bracket styles are also offered.

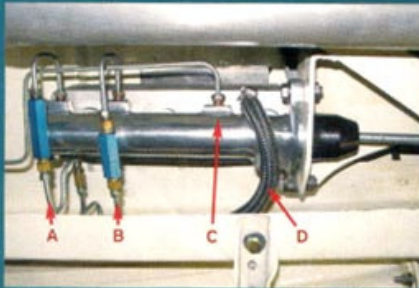


ABS also offers a frame-mounted remote-fill master cylinder and reservoir for applications where room is limited and even the smaller standard reservoir is too large. It's not bad looking either.



The pump assembly and accumulator can be mounted in any position in any location (including the trunk). The only limitations are that it should not be mounted at a higher level than the master cylinder (it is gravity fed) or located too close to the exhaust pipes or mufflers, which could overheat the fluid. On this application, it fit very well directly behind the master cylinder in the frame inside the K-member. The relay is mounted close by.

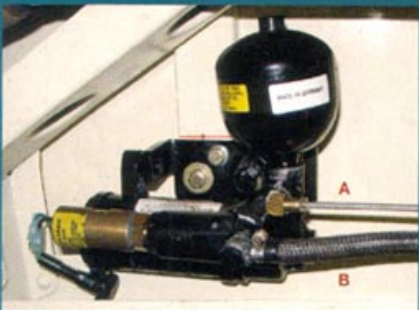
■ Ready, Set, Stop



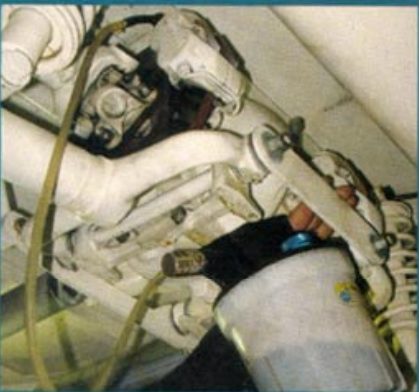
With everything mounted, the plumbing can begin. The first hard line is to the rear brakes (A). Next is the hard line to the front brakes (B). One more over is the high-pressure line to the power booster pump (C). The braided line (D) feeds fluid from the reservoir to the pump.



The pushrod to the floor-mounted brake pedal has been installed (arrow). ABS can make rods in different lengths for different applications to maintain the proper travel. They recommend a minimum of 1 1/2 inches of travel in order to adequately activate the pistons inside the master cylinder.



Here you can see where the high-pressure hard line (A) and the braided hose from the reservoir (B) connect to the pump. Replacing the brake lines is not needed for this upgrade unless the master cylinder was relocated, or the plumbing is deteriorated.



The final step in any brake job is bleeding the brakes, done with the accumulator un-installed. If the calipers were installed correctly, the bleeder screws will be located at the top. Pedro at ABS attached a rubber hose to the valve and ran it into a plastic collector. The valves can be loosened but should not be opened until someone inside the car applies and holds pressure to the pedal. When the valve is opened, the pedal should lose resistance. The fluid should be moving at a fast rate, otherwise, it could indicate a clog in the line. Close the valve before the pedal is released to prevent air from being sucked back into the line. Start with the front left brake, continuing with the front right, rear left, and rear right, to bleed the lines from shortest to longest. Finally, turn the ignition key to the ON position to start the electric pump. Let it run until fluid flows through the accumulator mounting hole. Install the accumulator. The system is now pressurized and ready to go.



Check valves, or residual valves, are not included as part of the kit, but are available and recommended. They hold fluid pressure to prevent fluid from returning back into the master cylinder and are necessary when the master cylinder is located at the same level or lower than the brake calipers. The valves are stamped with their pressure ratings. A 10lb valve is used on the rear brake line and a 2lb valve for the front brakes.



The wiring is included and kept simple. Red is the positive wire from the battery, black is the ground, and blue goes to the ignition. On this car, the fuse box is located underneath the dash on the driver side, so ABS ran electrical from a direct contact with the fuses.