

12 V Mini Pumps Battle!

Which one is worth its weight/space/money in your saddlebags

BEING PREPARED FOR tire repairs on a tour is a must, just like carrying a first aid kit. And as our exhaustive tire repair kit testing (March 2002) found, muscle powered air pumps are truly exhausting—much more appropriate for bicycles than motorcycles, and the popular CO₂ inflation cartridges are not the brilliant solution they purport to be. The reasons: CO₂ cartridges are relatively expensive, especially for a one-time-use item; for instance, two big 68g cartridges, both required to fill a rear tire, will set you back \$30; heavy (if you are going to carry enough of them to truly inflate a flat tire—for instance, a dozen of the cheaper, more common 12g cartridges are needed to fill a 190/50-17 rear tire) and, in the end, they are not much more compact than a stripped-down 12 V air pump. As there were no inexpensive 12 V pumps on the market small enough for motorcycle use back in 2002, we showed you how to strip the common lunchbox-sized Campbell Hausfeld unit to its bare essentials in a How-To in the October 2002 issue of MCN (available on our Web site, www.mcnews.com, under General Features: “Emergency Tire Inflation the Easy Way”). For about \$20 and a fun hour of deconstruction and a bit of soldering, we thought it worked great.

With the introduction of several new units to the market, we decided to compare them with our “chopper” to see which deserved your hard-earned money.

Testing

As a control test, we took the valve core out of our long-term Buell Ulysses’ rear

tire. When the tire was completely deflated, we replaced the core and connected the pumps, timing the pumping in two stages: an initial three minutes, followed by two further minutes, with pressure checks after each. We used three minutes as a maximum because the Cycle Pump unit, which was unventilated, stressed “INFLATE 2-3 MINUTES.” Thankfully, all the pumps had very effective connection valves, and a minimum of pressure was lost during dis- and re-connections, so that we didn’t feel the second pressure check was significantly affected. To ensure that we didn’t handicap the following pumps’ results by operating on a depleted battery, we hooked up a powerful battery charger in advance to keep results independent of battery condition.

Because experience has taught us that pumps can get quite hot, and skin burns could be a possibility, we also took temperature readings with a non-contact pyrometer while each unit was pumping to see how hot they got during operation.

Lastly, they were weighed and measured and the contents, in terms of the electrical connection options, were inventoried to rate their adaptability.

Of course, you’re going to need some kind of patch or sealant to accomplish a tire repair. So in that sense, none of the commercial 12V pumps are complete as a tire repair kit. You still need to patch the tire. Although a variety of tire plugs are on the market, we chose the ubiquitous Camel “sticky string” plugs available at any auto parts store for our “chopper” as the easiest to use and most reliable, based on the results of our previous testing.

Scoring

Performance was based on tire pressure after our timed tests of three minutes and five minutes. The Cycle Pump put out the best numbers—30 psi at three minutes and 44 psi at five minutes. The Chopper put out 25.5 psi and 37 psi, the Slime inflator did 26.7 psi and 31.8 psi, and the Airman Sparrow was weakest with 21.8 psi and 31.6 psi.

Connectivity measured how many connection options the unit had plus lengths of cords. Here, the Slime inflator wins, since it includes battery charger-type connectors, alligator clips, eyelet connectors and a cigarette lighter plug. It also includes an extension cord that gives a user 9’8” of usable cord. The Cycle Pump also received high marks, since it includes a charger connector, 8’ extension cord, alligator clips and a cigarette lighter plug. The Airman Sparrow comes only with a cigarette lighter plug, significantly limiting its usefulness.

Packability measured the unit’s weight and volume, to rate how much precious space it would take up in a saddlebag. The Airman inflator wins this one, and we felt the Cycle Pump’s hard corners require additional cushioning to prevent damage to plastic saddlebags. As for weight, three of the units were under 1.4 lbs., while the Cycle Pump was almost twice as heavy at 2.3 lbs.

Value rates the preceding factors against the unit’s cost. At \$34.99, the Slime inflator was the best compromise of efficiency, features and price.

Running temperatures turned out to not be dangerous, as even the highest we recorded would not inflict instant burns.

—Franke Santos

Slime Power Sports Tire Inflator	Total Score: 22	Price: \$34.95
Performance ●●●●○	Connectivity ●●●●●	Packability ●●●●●
Weight ●●●●○	Value ●●●●●	



Weight: 1.2 lbs. **Dimensions:** In case: 6 1/4" x 6 1/2" x 2". Approximately 80 cubic inches, Hose length: 17", Longest cord length: 9’8”

Notes: The unit comes with all the connections you could want: battery charger plug, alligator clips, eyelet connections, and a cigarette lighter plug. It has an 8’4” extension cord and the inflation hose is a generous 16.5” long.

The unit put out 26.7 psi after three minutes and 31.8 psi after five minutes. To protect the unit while it’s pumping, there are little rubber feet on it, although we found that the rubber started to wear off fairly quickly as it danced on the ground.

Because of its good ventilation, the unit stayed relatively cool after three minutes at 87°, but the hose fitting was 97°. After five minutes, the unit actually cooled to 85°, while the hose fitting was 100°. (There is a warning label near the hose fitting.)

Packing all the connectors back into the case can be challenging, as noted in our September review. You may choose to pack just the connectors you’ll actually need.

Only our home-made “chopper” was lighter, and the Slime unit is an excellent value in a very compact package.

Accessories Marketing—800 Farrol Road, Grover Beach, CA 93433; (888) 457-5463; www.slime.com

Dave's Campbell Hausfeld Chopper Total Score: 21.5**Price: \$19.95+ parts and sweat equity**

Performance ●●●●○

Connectivity (your preference) ●●●●●

Packability ●●●○○

Weight ●●●●●

Value ●●●●●



Weight: 1.1 lbs. **Dimensions:** Unit itself: 5" x 4"; In case: 8 1/4" x 3" x 5", Boxed, approximately 124 cubic inches. Hose length: 29", electrical cord length: 9'7"

Notes: Dave made this pump by stripping the guts out of a Campbell Hausfeld RP3000 12 Volt Inflator, penned a How-To for MCN's readers and liked it so much that he made another one for his brother. (Note: the original donor unit has been discontinued and was replaced by the very similar RP3200.) He included both a battery charger connector plug, fuse and eyelets for attaching to a battery. Dave used a plastic food container for storage and added Camel repair kit items to make the kit complete: a reamer, sticky strings to plug the tire, a plug insertion tool, plus a tube patch and rubber cement for versatility. He put alligator clips on the unit for his brother, instead of eyelets.

In testing, the pump inflated the tire to 25.5 psi after three minutes and 37 psi after five minutes, placing it just behind the Cycle Pump in pumping performance. It's the lightest unit among the four. Since it doesn't have feet, you must hold it by the inflation hose during pumping. After five minutes, the motor was 93° and the cylinder got up to 120°. Cost does not include labor or a battery charger pigtail and eyelet connectors, purchased separately.

Campbell Hausfeld—100 Production Dr., Harrison, OH 45030; (800) 544-0350; www.campbellhausfeld.net

Cycle Pump Adventure**Total Score: 14.5****Price: \$100**

Performance ●●●●●

Connectivity ●●●●○

Packability ●●●○○

Weight ●○○○○

Value ●○○○○



Weight: 2.3 lbs. **Dimensions:** In case: 10 1/4" x 5 1/2" x 2 1/4". Approximately 127 cubic inches. Hose length: 26", Maximum electrical cord length: 6' 10"

Notes: The Cycle Pump comes with two power cords, one with alligator clips and one for a cigarette lighter. It also comes with a battery-charger-type connector, and an 8' long extension cord. Combined with the power cords, it gives the user 16'10" of cord—the longest among the group. The Cycle Pump comes with a strong rectangular aluminum case, though you will have to cushion against the unit's hard corners in your saddlebag. In testing, the Cycle Pump performed the best, putting out 30 psi after three minutes and 44 psi after five minutes. Note, the hose clip fits vertically, instead of at 90°, and has a spring clip, instead of a locking lever. The pump got a little hot, probably in part because it has no vents: 92.5° after three minutes, and 100.1° after five minutes. The heaviest and most expensive unit by far. Because of the inflation hose's internal connection to the pump, you cannot burn yourself on the exposed portion of the hose connection to the unit.

BestRest Products Cycle Pump—6908 220th St. SW, Mountlake Terrace, WA 98043; (425) 673-1023; www.bestrestproducts.com

Airman Sparrow**Total Score: 13.5****Price: \$24.95**

Performance ●○○○○

Connectivity ●○○○○

Packability ●●●●●

Weight ●●●●○

Value ●●●○○



Weight: 1.4 lbs. **Dimensions:** 5 1/2" x 4 1/4" x 2 1/4". Approximately 30 cubic inches. Hose length: 5.5", Electrical cord length: 10'7"

Notes: It looks like a pair of binoculars and isn't much bigger. The top has a fairly accurate pressure gauge, which indicated just 1 psi less than our premium tire gauge. However, it comes with a very short 5.5" air hose, with only a cigarette lighter plug at the end. If your bike doesn't have that connector, you'll need to modify it. The unit also comes with two air valve attachments for pumping up sporting equipment or air mattresses. Although it doesn't come with a case, the electrical cord can be stored in the bottom of the unit and the inflation hose wraps around the top and clips back onto the unit. The valve fitting was all plastic, a potential weakness, and the short inflation hose could be a problem. After three minutes, the Airman Sparrow had put out 21.8 psi and after five minutes, 31.6 psi. It got the hottest: After pumping for three minutes, the unit had a temperature of 106°. It was stable on the ground and didn't vibrate nearly as much as the other units. Because of its design, you can't burn yourself on the hose's fitting to the unit.

Airman Sparrow, available through Adventurer's Workshop—

(208) 263-0438 or (973) 258-0034; www.adventurersworkshop.com

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