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Title: Customizing the Magnum 68

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Customizing the Magnum 68



By Tim McMurray

In January, 1988, Pursuit Marketing, Inc., released their long-awaited Magnum 68. This first version of the new PMI gun featured a factory-issued, direct-feed system with 20-shot feed capability, rapid-pump action, a 10½" barrel, a Daisy Point Sight, and also incorporated a CO₂ tank/shoulder stock for constant-air capability, which had been previously introduced with PMI-2.

Shooters had been looking forward to a factory-issue gun that would incorporate all the features commonly associated with customized

paint-pushers, but as it turned out, the new Magnum 68 suffered from certain shortcomings. First, the low feed angle of the original 68 made for a gun that wouldn't feed balls rapidly enough in game situations to avoid balls being scissored by the bolt. Second, the metal feed tube designed to slip into the receiver tended to bend under the stress of field use, preventing proper feeding.

After a certain amount of negative feedback from players and dealers, PMI hastened to release a corrected version of the Magnum 68, the

The quickly detachable slot for easy bolt removal is a must for serious paintballers. This is now a standard feature on all Mac-1 positive feeds.

"Phase II" version. This time around the gun included a plastic feed-tube coupler and the new 45-shot Ammo Box; with this design change, feeding problems were largely eliminated. Nonetheless, certain limitations remained that kept the Magnum 68 from quite satisfying the demand for a "custom gun straight out of the box."

Generally speaking, it's been my experience that players expect a custom paintgun, to display some of the following features: 1) Front and rear sights for people who don't like the Point Sight approach; 2) auto triggers for rapid-fire capabilities; 3) the capability to switch between single-powerlet CO₂, dual-powerlet CO₂ and constant-air; 4) a quickly-detachable bolt; 5) a shot-indicator hole to assure that a ball has dropped into the chamber; and 6) a quick, slick and light pump.

We have been able to do all of these things with the PMI-1, but both the PMI-2 and the Magnum 68 (in both versions) suffer from a certain lack of adaptability. The biggest problem of all is presented to the player who wants to take one of these guns to a field which will not allow constant-air feed systems. The PMI-1 comes from the factory working on a single powerlet, which allows us to add an optional dual-powerlet or constant-air system. But with the newer guns, the player only has the choices of buying a gun with the alternative power system or using a field gun.

However, the Magnum 68 will permit some modifications that bring it in line with the demands of the custom-gun user. At Mac-1 we begin by removing the stock breech assembly, and replacing it with our own positive feed system. The reason for this is that the player demands a bolt that can be removed quickly under game conditions in order to permit barrel cleaning. However, the breech assembly on a Magnum 68 is secured in such a fashion that the installation of a quickly-detachable bolt is too complicated to be worthwhile. The best location for the slot of the quickly-detachable bolt is in a place directly aligned with the set-screws of the Magnum 68 breech; so rather than slipping a new block over the breech, we silver-solder a brass feed tube and a scope rail directly to the factory barrel. (The scope rail also strengthens the back of the barrel where the quickly-detachable slot is cut, and the weight saving is already apparent at this point due to the removal of the breech block.)

In order to bring the streamlining process to its fullest, however, we need to replace the factory pump. Self-lubricating plastic has become the standard for pumps in the industry; but the cost of materials makes it highly unlikely that the manufacturers will ever supply Delrin pumps as standard equipment, so manufacturers have generally turned to aluminum for its lightness. However, players prefer a really enormous pump for ease of use, and a Delrin pump can be twice the size of an aluminum one and still be lighter. By removing/replacing the factory breech block and pump, we have saved .41 pounds and greatly slicked up the pump operation as well.

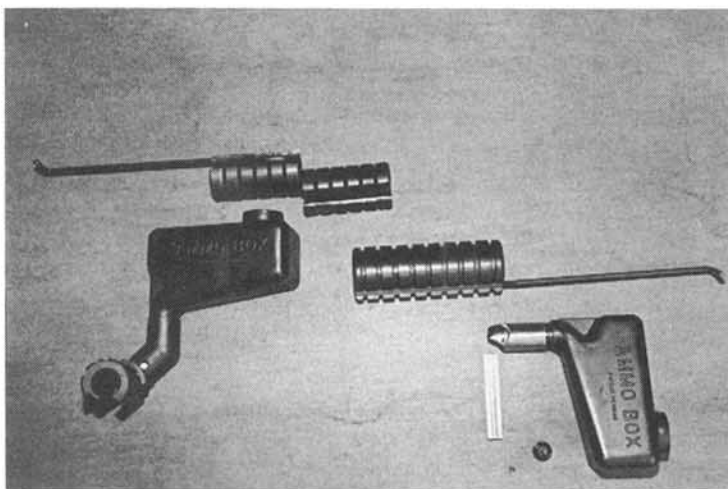
The PMI Magnum 68 is a very good paintgun, and we can certainly expect a series of future modifications from the factory that will bring it closer to the demands of the dedicated player. However, common sense should make it obvious that no production-line manufacturer can ever do more than *approximate* custom work with an out-of-the-box gun. The key, after all, is cost-effectiveness, and the fine points demanded by the serious player — going up against other serious players — are generally items that take an amount of labor and demand a quality of materials that would mean a waste of money to the production-line builder.

Custom guns will always be quicker, lighter, more accurate and easier to use than stock guns . . . or the customizers couldn't stay in business! Necessity is a mother . . . or was that *the* mother? Because it's "a war out there!" the name of the game is, "Improve or fade away."

About the author: Tim's custom airsmithing is well known and respected throughout the industry. Call him for a catalog or to find the nearest paintball outlet that carries his products at 213/412-4187.



The Auto-Trigger is one of the most popular add-ons supplied for Sheridan airguns, but it won't fit on Mag-68s because of the factory direct-feed system.



On the left is the factory feed system removed from the Mag-68. At right is the posi-feed system installed by Mac-1. The lighter weight and smoother action of the Delrin pump make it superior to the factory aluminum model.