

The Bolt Carrier and Bolt

The final sub assembly that we'll discuss is the bolt carrier and bolt. They perform 7 basic operations in the AR15.

First, with force provided by the action spring, the bolt carrier pushes a round out of the magazine into the chamber via the feed ramps.



Second, as the bolt carrier moves forward, the bolt passes thru cuts in the barrel extension and is rotated by the cam pin so the locking lugs on the bolt are locked into battery.



Left side cutaway view



Third, when the trigger is pulled, the hammer strikes the firing pin which runs through the middle of the carrier and bolt, striking the primer, discharging a round.



Picture of flow of gas

In the fourth operation, gases that have been directed down the gas tube from the gas block enter the bolt carrier through the carrier key and are redirected forward, pushing against the gas rings, this pushes the bolt forward slightly and the carrier to the rear. The rearward movement of the carrier pushes against the cam pin which forces bolt to rotate, unlocking it from battery.

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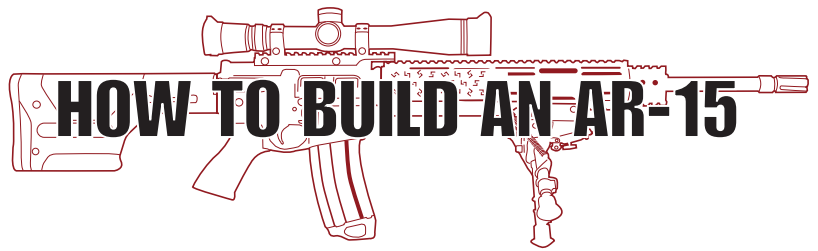
Cutaway at mid cycle

Fifth, the bolt carrier group moves to the rear as the extractor pulls the case free of the chamber. As the bolt carrier continues to move rearward it cocks the hammer back which is the sixth operation.

of the ejection port, clearing it from the extractor. Once the bolt has reached its furthest point of reward travel, the action spring pushes the bolt forward starting the cycle again with the first operation.



Round ejecting

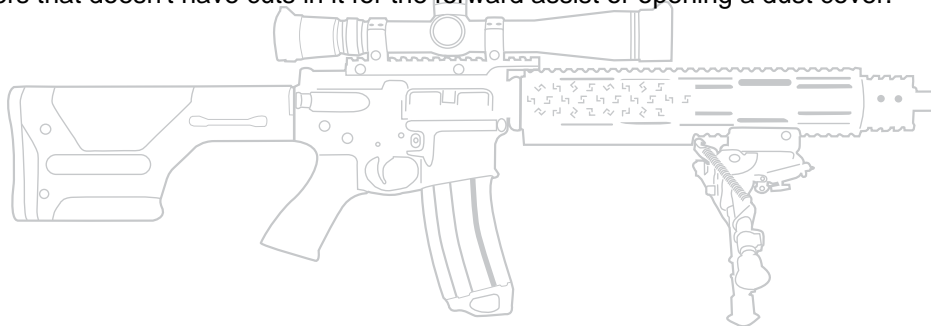


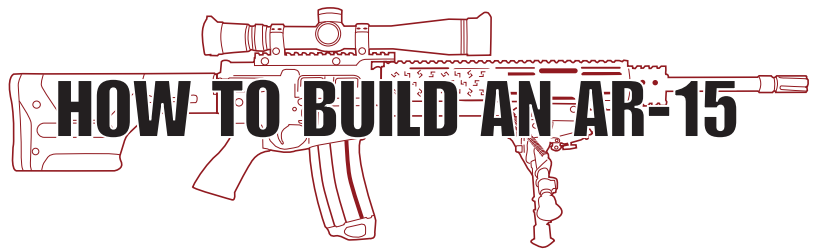
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There are 18 parts that make up the bolt carrier group, they are: bolt, ejector, ejector spring and the ejector roll pin, extractor, extractor pin and spring set, three gas rings, bolt carrier, bolt carrier cam pin, bolt carrier key, two bolt carrier key screws, firing pin and the firing pin retainer pin.

Here again you have quite a few options available for building your bolt carrier and bolt sub assembly. You can purchase all the parts separately and build it yourself or already assembled as a drop in.

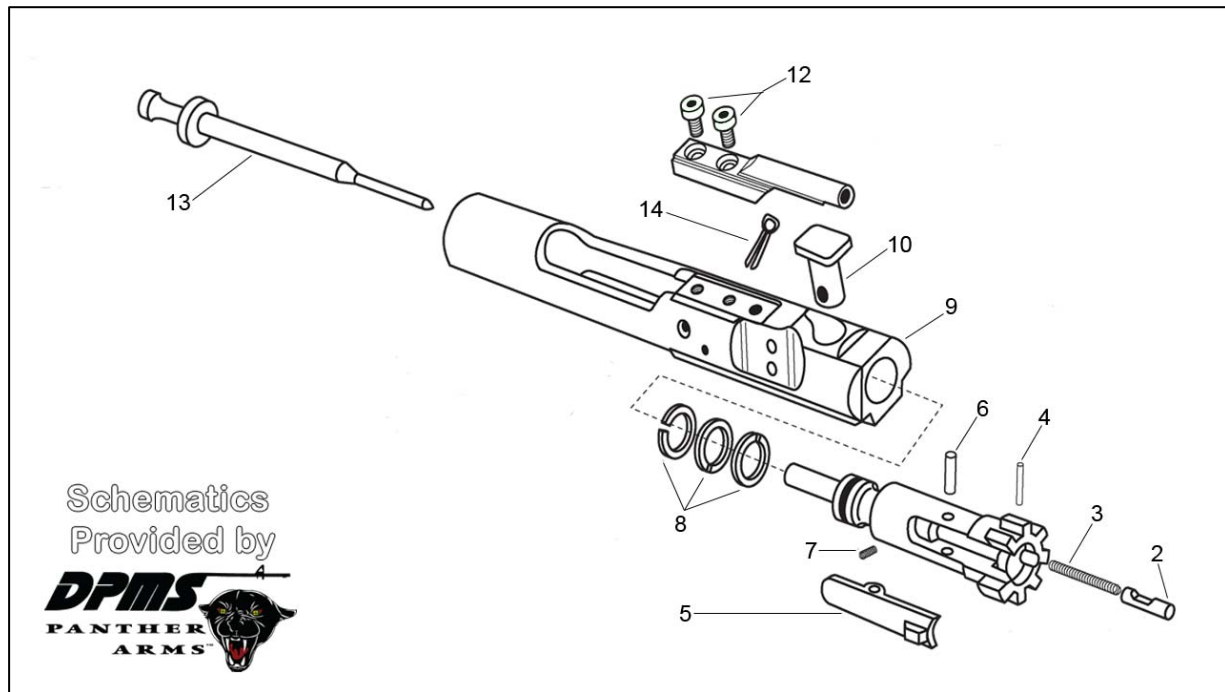
There are several aftermarket bolts and bolt carriers available to meet whatever your requirements may be. There are hard chrome or titanium nitride plated versions that provide improved lubricity and reliability. There are national match carriers with tighter tolerances for a more consistent lock up and bolt carriers that are heavier for slower cycling as well as some made of titanium for reduced loads and faster cycling. There is even a bolt carrier made for slick sided receivers that doesn't have cuts in it for the forward assist or opening a dust cover.





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THE BOLT CARRIER AND BOLT SCHEMATIC



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|------------------------------|---------------------------------|
| 1. Bolt | 8. Three Gas Rings |
| 2. Ejector | 9. Bolt Carrier |
| 3. Ejector Spring | 10. Bolt Carrier Cam Pin |
| 4. Ejector Roll Pin | 11. Bolt Carrier Key |
| 5. Extractor | 12. Bolt Carrier Key Screws (2) |
| 6. Extractor Pin | 13. Firing Pin |
| 7. Extractor Spring & Buffer | 14. Firing Pin Retainer Pin |