We introduce an approximation technique for nonlinear hyperbolic systems with sources that is invariant domain preserving. The method is discretization-independent provided elementary symmetry and skew-symmetry (generic) properties are satisfied by the discretization. The method consists of blending a low-order method and a high-order method. The low-order method is formally first-order accurate in space and invariant domain preserving. The high-order method may violate the invariant domain properties, but this defect is corrected a posteriori by a limiting technique that we call convex limiting. After limiting, the resulting methods satisfy all the invariant domain properties that are imposed by the user and is formally high-order accurate. The two key novelties are that (i) limiting is done by enforcing bounds on quasiconcave functionals; (ii) the bounds that are enforced on the solution at each time step are necessarily satisfied by the low-order approximation. (Received January 02, 2019)