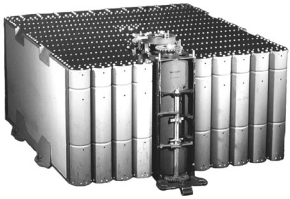
Parker Defense Systems

AMMUNITION HANDLING SYSTEMS

Parker Meggitt
Defense Systems Division

Parker Meggitt Defense Systems Division, provides ammunition storage and handling systems used by militaries around the world. We develop, manufacture, market and service high quality Linear Linkless™ ammunition handling systems offering operational reliability and automatic handling of rounds, providing more efficient weapon systems to the field. We are a technology leader in automated feed and resupply, and we manufacture to rigorous MIL-SPEC performance and environmental requirements. Parker Meggitt delivers world class ammunition handling technology for hydraulic or electric powered platforms and is actively involved in the development of next-generation combat systems.

Ranging from 20mm through 155mm, Parker Meggitt Defense Systems Division has developed and fielded lightweight, high-reliability systems on the ground, in the air, and at sea.



AH-64 Apache 30mm 12-PAK Magazine

For Army Aviation, Parker Meggitt Defense Systems Division produces the AH-64 Apache 12-PAK, a 1,200 round, 30mm linkless ammunition handling system mated to the M230 chain gun. Battle-proven by Apache users around the world, the 12-PAK is 30 pounds below its weight goal and has far outstripped its specified reliability of 50,000 mean-rounds-between-failure.

Combo-PAK Magazine

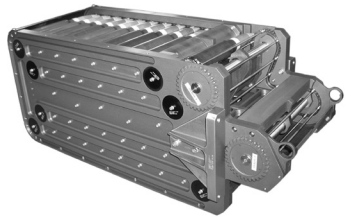
In partnership with Robertson Aviation, Parker Meggitt Defense Systems Division produces the 250-round Combo-PAK ammunition handling system integrated with a 100-gallon auxiliary fuel tank providing Army Aviators with optional extended range while retaining the ability to reach out with the 30mm area weapon system.

Scout/Warrior 40mm Ammunition Handling System

Our 40mm Linear Linkless™ Ammunition Handling System is at the forefront of ammunition handling. Parker Meggitt's unique multinature system allows for 40mm case telescoped rounds to be loaded anywhere in the system. This flexibility allows for the warfighter to select any round type available in the system, and have it available for use within seconds. Each round is handled individually without a metal link or belt, which reduces the likelihood of any snags or stoppages. The ammunition handling system stores the ammunition in a "serpentine" arrangement, to make the most of the available space."

The ammunition handling system magazine sits just outside the turret wall where rounds are individually loaded into the magazine via the load port. Sensors inventory the different round types in order to make them user selectable and available within seconds.

30mm Linear Linkless™ Magazine

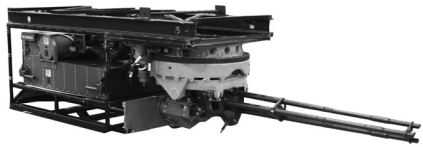


Parker Meggitt Defense Systems' Division 30 plus years of experience in developing next-generation ammunition handling systems for future combat platforms has resulted in several breakthroughs, including the modular, lightweight 90-round Linear Linkless™ Magazine.

This is a linkless 30mm magazine and transfer system for application to future weapon systems that incorporate the Mk44 weapon. It is designed to provide volumetrically efficient ammunition storage, in a given space, with increased capacity and decreased weight when compared to a similar capacity linked storage and feed system.

The 90-round magazine became the test demonstrator that finalized a decision to utilize 30mm linkless ammunition handling in the Future Combat Systems (FCS) Infantry Combat Vehicle (ICV) and the Reconnaissance and Surveillance Vehicle (RSV). The same design is leading the way for Ground Combat Vehicle (GCV) ammunition handling.

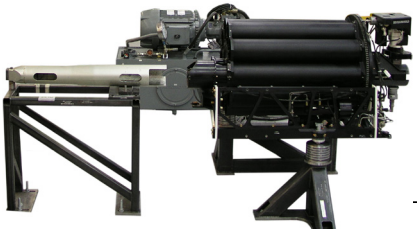
Cobra 20mm Linkless™ Feed System



The Cobra 20mm Linear Linkless™ feed system is designed to be used with the GTU-1/A GTK-()/A49E-7() turret system and provides the high performance capability required to feed the M197 three-barreled electric Gatling gun.

Designed as a drop-in replacement for a linked system, the Cobra feed system holds up to 652 rounds of 20mm ammunition and features four main components: the ammunition storage unit, merger loader, flexible chute assembly and Linkless™ declutching feeder assembly. Because each round is handled individually and precisely controlled throughout the system, gun jams are practically a thing of the past.

The high reliability of our Linear Linkless™ technology results in lower maintenance cost and thus ultimately lower system life-cycle cost when compared to conventional link-fed ammunition feed systems. Additionally, eliminating the need to purchase links (through bulk procurement of 20mm ammunition) provides further operational cost savings for the life of the program.



Stryker Mobile Gun System 105mm Replenisher

The Stryker Mobile Gun System (MGS) replenisher magazine provides reserve storage of ten 105mm rounds. Upon demand, the magazine is rotated for fast and accurate selection of rounds, which can be forwarded to the ready magazine (eight rounds) located in the gun turret. The replenisher houses the rounds in a circular magazine made up of horizontal interlocking storage tubes that hold the rounds securely during vehicle operation. The replenisher consists of four basic subsystems: the drum assembly, the transfer arm assembly, the magazine drive system, and the frame. The drum assembly (or magazine) is an automated storage structure for the rounds. The magazine drive is a hydraulic system used to position the drum for both loading and transfer of rounds. The transfer arm assembly is a hydraulically driven rammer that forwards rounds through a funnel to a ready magazine loader.

120mm Compact Automatic Loading System

Command of the digital battlefield is now one step closer to reality with the advent of Parker Meggitt Defense Systems' Division 120mm Compact Autoloader.

The technical breakthroughs required for practical, safe and fast automatic loading of a main battle tank cannon include Meggitt Defense Systems' patented 120mm Compact Automatic Magazine and a fully articulated robotic transfer unit. Designed for future application into the M1 main battle tank, the hallmark of this all-electric, fully-automatic ammunition handling system is its ability to operate without infringing upon crew space.

The magazine subsystem stores thirty-four ready rounds of 120mm ammunition. The virtual memory of the control system retains the inventory of ammunition types and locations as they are automatically loaded into the magazine. The 120mm Compact Autoloader, designed, developed and built by Parker Meggitt Defense Systems Division, improves the lethality of main battle tanks by enhancing the tank's fire-on-the-move capability, even while traveling over rough terrain.

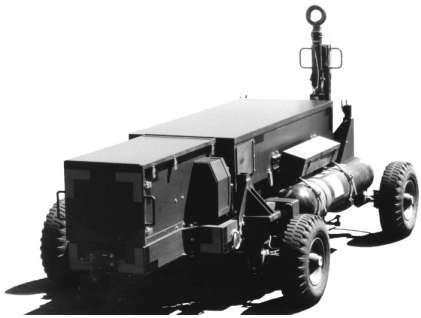
UH-60 Blackhawk 30mm Pylon 660 Round Magazine

Parker Meggitt Defense Systems Division designed the 30mm Pylon 660-round magazine using the Linear Linkless™ chain ladder technology for storage and transfer of up to 660 rounds of lightweight, 30mm rounds. Like its predecessor, the 12-PAK, the 660-round magazine incorporates proven hardware technology for the merger and the accelerator with reliability in excess of 50,000 mean-rounds-between-failure.

The 660-round magazine emerged from the 12-PAK in answer to a requirement for combat versatility in Blackhawk operations.

Linkless Ammunition Loading Systems

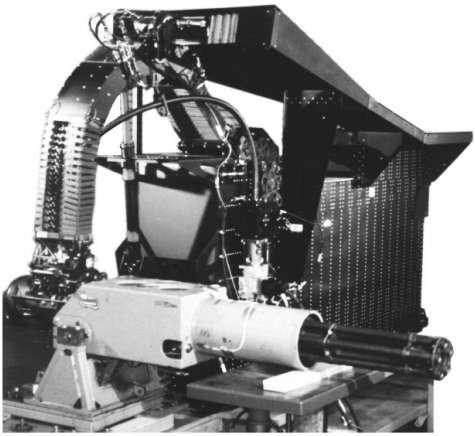
The US Air Force Linkless Ammunition Loading System (LALS) provides a 2,100 round capacity and a 100 spm nominal replenishment rate.



Using a crew of two, the USAF LALS can typically service F-15, F-I6 or F-18 aircraft in less than five minutes, simultaneously uploading rounds in the aircraft gun system while downloading and recovering empty cases and unfired rounds.

The Storage Container Assembly stores rounds in a serpentine fashion across three bays, using Parker Meggitt Defense Systems' Division innovative and highly reliable Linear Linkless™ chain ladder system to provide 100% round control at all times with a reliability in excess of 200,000 mean-rounds-between-failure.

25mm Ammunition Storage and Handling System



The AC-130U Gunship 25mm Linear Linkless™ ammunition storage and handling system, with a capacity of 3,000 rounds, represents the largest Linear Linkless™ system ever produced.

Past high rate Gatling gun systems in the gunship series presented the problem of large quantities of spent cases and links to be handled by the gun crew. This closed-loop system feeds and restores ammunition and empty cases. The two-bay Linear Linkless™ magazine is a high density storage unit, which, by nature of its design, moves its 3,300 lb. ammunition payload at half of the 1,800 spm gun rate. The loader/downloader assembly will either accept linked or bulk ammunition during loading operations and store them in the magazine while downloading spent cases and misfires through a dump chute, or bypass the loading and dump gates and send rounds to the conveyor assembly during firing.

Linear Linkless™ Technology

Linear Linkless™ magazines are mechanically and volumetrically more efficient and lighter than clip-dependent linked systems. More importantly, our Linear Linkless™ systems are more reliable than linked systems which are prone to jam easily because of improperly fed rounds. Our feed and transfer systems maintain complete control of rounds as they are fed directly into the gun entrance unit, providing unprecedented overall system efficiency.

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