

DATA SHEET

# 120mm Compact autoloader system

## Main battle tanks



### 01 Description

Meggitt Defense Systems' patented 120mm Compact Automatic Magazine and fully articulated robotic transfer unit provides safe and fast automatic loading of a main battle tank cannon.

The hallmark of this all-electric, fully-automatic ammunition handling system is its ability to operate without infringing upon crew space. The transfer unit, which can support a rate of fire of 12 shots per minute, resides behind the recoil path of the cannon. Its operational swept volume does not encroach into any useable space within the turret, thus allowing the retention of the fourth crewman. Operating in concert with the magazine, the transfer unit uses three degrees of freedom to smoothly and efficiently extract, reorient and load the selected round into the main gun at any weapon elevation position between minus three through plus ten degrees. The total swept volume of the transfer unit is only 11.4 cubic feet.

The magazine subsystem stores 34 ready rounds of 120mm ammunition. Utilizing a double-row, closed-loop chain of canisters, the magazine has excellent volumetric storage efficiency, thus allowing it to fit within the existing envelope of the M1 bustle. When the gunner selects an ammunition type with his switch on the turret control yoke, the desired round travels to the blast port where the transfer unit quickly, easily and safely moves the round from the magazine to the gun.

### 02 Key features and benefits

- Redundant dual electric motor drive system
- Retains ammunition type and location in memory
- Stores both KE and HE type rounds
- Incorporates anti-fratricide provisions

### 03 Applications

- Main battle tanks
- Adaptable to most gun turret designs

### 04 Contact

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The Compact Autoloader features automatic ammunition inventory, and provides high reliability with complete manual back-up capability. 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 Meggitt Defense Systems, improves the lethality of main battle tanks by enhancing the tank's fire-on-the-move capability, even while traveling over rough terrain.

The technology demonstrated by the Compact Autoloader System can be adapted to most gun turret designs, providing increased lethality while at the same time freeing manpower to operate effectively on the increasingly complex digital battlefield.

**05 Specifications**

Mechanical subsystems	Compact automatic magazine transfer unit
Capacity (KE or HE)	34-round 120mm ammunition
Rounds per minute load rate	12
Degree loading range	-3 through +10
Magazine access rate	15 spm
Magazine empty weight	944 lbs.
Magazine volume	37.3 cubic ft.
Transfer unit swept volume	11.4 cubic ft.
Reliability provisions include	Manual backup-up capability Automatic re-inventory