



MPACT[®]

PURE AIR COMPRESSION TECHNOLOGIES





Pure Air. Cool Missiles.



IR Missile Seeker Cooling

The MPACT-3000 Pure Air Generating System provides a continuous on-board supply of high-pressure pure air designed specifically for the cooling of infrared missile seekers. MPACT's continual air generation eliminates the need for gas canisters and refills.

You don't have to leave the fight.

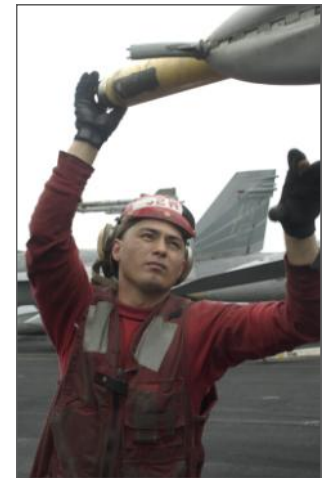
You don't have to leave the fight to refill your gas cooling bottles. MPACT is always ready with a continuous supply of pure dry air to cool the missile seeker, increasing combat mission duration, flexibility and forward deployment.

No bottles, no carts, no downtime.

Because the system is continuously charging, it's always ready and never needs to be refilled. This eliminates the need for coolant gas service carts, bottles and containers, reducing high operational costs and improving aircraft turnaround time.

No fouling or freezing the seeker.

MPACT's advanced filtration and dehydration removes CO₂ and hydrocarbons which are the leading causes of missile seeker failure. MPACT cools with pure dry air, increasing the overall reliability and service life of the missile seeker.



MPACT eliminates the need for coolant gas bottles.



MPACT reduces logistics and high operational costs.



MPACT-3000 Pure Air Generating System is flight qualified for the LAU-7 and LAU-127 on the F/A-18A-F

MPACT-3000 is a proven, low risk solution for infrared cooling applications.

Valve / Manifold

Custom designed to meet the system requirements. The assembly contains:

- Check valve
- Relief valve
- Manual vent valve
- Water vent valve
- Isolation valve
- Pressure vessel
- Desiccant and filtration
- Coalescer

** The listed performance data represents specific program requirements and not the limitations of the MPACT.*

Micro-compressor

Air-cooled, direct drive and oil free using swash plate technology which eliminates the gearbox resulting in stronger system reliability.

- Operating pressure: 3050 psi
- Oil free
- Four stage, single head
- Flow rate: 6-7 SLPM

System Controller

With small size and weight relative to its high output power, these controllers are ideal for aerospace applications.

- DC brushless, sensorless
- Active power factor correction
- MIL-STD-461-E
- MIL-STD-810
- DSP based digital control
- System power consumption: up to 290 VA
- Input power: single phase 115 VAC
- System power management
- Tailorable control characteristics
- Digital communication



Modernize AIM-9L/M inventories.

You can easily upgrade your existing AIM-9L/M inventory to today's higher performance standards with clean, reusable, affordable MPACT. MPACT is designed to fit into the same envelope as nitrogen canisters.

- Maintain system compatibility
- Enhance operational readiness
- Improve reliability
- Maximize useful life
- Minimize life cycle costs

Pure Air. Clean Release.

Pneumatic Weapon Ejection

The MPACT-6000 Pure Air Generating System provides a reliable source of high-pressure pure air for accurate weapon separation, every time. Compact, clean and light-weight, MPACT eliminates pyrotechnic devices, improves mission flexibility, forward deployment and logistics.

Protect your bomb/ejector racks.

MPACT uses clean, dry air as its energy source to eject munitions. Since the bomb/ejector rack is not fouled or eroded by hot gasses and explosive residue, the racks return from the fight in excellent condition.

Fast response time and reliability.

The MPACT system is always ready to fire with millisecond operation, high ejection velocities, and consistent shot-to-shot ejection profiles.

Multiple configurations & retrofits.

MPACT is designed for easy integration into next generation single or multiple pneumatic bomb/ejector racks. MPACT can also be retrofitted to convert legacy pyrotechnic racks to pneumatic capabilities.



MPACT is ideal for next generation pneumatic racks.



MPACT is ready for SDB and other platforms.



MPACT 6000-1

Compressor

- Four stage single head
- Operating pressure: 5880 psi
- Flow rate: 6-7 SLPM
- Oil-free

Valve and Manifold

- Check valve
- Relief & vent valves
- Water vent valve
- Pressure vessel
- Desiccant and filtration
- Coalescer

Electronic Controller

- DC brushless, sensorless
- System power management
- Three phase 400 HZ 115 VAC
- Power consumption: 500 VA
- Peak power consumption: 800 VA
- Tailorable control characteristics
- Extensive built-in-test
- Digital communication
- Qualified software

MPACT 6000-2

Compressor

- Four stage double head
- Operating pressure: 5880 psi
- Flow rate: 12-14 SLPM
- Oil-free

Valve and Manifold

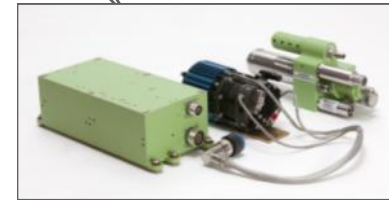
- Check valve
- Relief & vent valves
- Water vent valve
- Pressure vessel
- Desiccant and filtration
- Coalescer

Electronic Controller

- DC brushless, sensorless
- System power management
- Three phase 400 HZ 115 VAC
- Power consumption: 800 VA
- Peak power consumption: 1100 VA
- Tailorable control characteristics
- Extensive built-in-test
- Digital communication
- Qualified software



MPACT -6000-2



MPACT -6000-1

Installed in the bomb rack, weapons bay or wing pylons, MPACT 6000 provides clean, high-pressure air to support today's high-performance pneumatic ejection racks.

* The listed performance data represents specific program requirements and not the limitations of the MPACT.

Pure Power. Consistent Shots.



Pneumatic Ejection Valves

Marotta has developed high-performance, non-pyrotechnic ejection valve technology to power next-generation smart bombs. The ejection valves use high-pressure air to release the weapon. We have supplied thousands of ejection valves to support the SDB and other military platforms.

Small Diameter Bomb.

Beginning in 1995, Marotta designed, developed and qualified the valve/accumulator system for the Small Diameter Bomb program.

Global presence.

Marotta's pneumatic ejection valve system is a key contributor to various international military platforms.

Features

- Consistent shot-to-shot ejection profiles
- Integral latch actuator
- No flow prior to unlatch
- Response time: full flow 30 milliseconds
- Adjustable outlet flow control devices
- Safety interlocks
- High strength-to-weight materials
- Precision inverted relief valve design
- Temperature range: -65°F to 212°F
- Operating pressure: 5,100 to 6,570 psig
- Proof pressure: 8,750 to 13,140 psig
- Burst pressure: 12,750 to 26,280 psig
- Relief valve set point: 5,400 cracking pressure, 5,250 min. reseal pressure
- Qualified to MIL-STD-810



We support the SDB and other military platforms.

Experience and Qualifications

From our early experience with the Bell X-1 rocket plane to today's most sophisticated aircraft, Marotta has earned a reputation for quality, innovation and dependability. We've capitalized on the strengths of our early fluid control expertise and perfected the art of high-pressure pneumatics.



Manufacturing & Assembly

- Lean manufacturing principles with dedicated work cells
- Highly integrated ERP system
- Up to 7-axis CNC machining
- Class 10,000 clean room

Quality Approvals

- ISO 9001:2000
- EN/JISQ/AS9100:2004, Section 1
- Navy Level 1

State-of-the-art manufacturing.



Lean manufacturing principles with dedicated work cells.

Today, we continue to advance high-pressure pneumatic technology to meet the evolving needs of the warfighter.

Mechanical Engineering

- Pro/Engineer CAD system
- Pro/Mechanica
- Ansys FEA
- MatLab Simulink

Electronics/Software Engineering

- IEEE/EIA 12207 Standard for Information Technology Software Life Cycle Process
- CMMI Level III Comparable
- MISRA-C Software language for Safety Critical Applications
- Qualified to JSF Development Process for Safety Critical Applications (SEAL 2)
- Process control systems
- Motor control systems
- EMI mitigation



In-house testing capabilities.



WHEN IT COMES TO WEAPON SYSTEMS, WE'RE IN CONTROL

 **MAROTTA**

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