

Millennium Systems International



MARS

Modular Aircraft Refueling Systems

The New Standard in FBO Fuel Farm Design



PFT



DTP

- ♦ PFT Module (Pump and Filtration)
- ♦ DTP Module (Direct-to-Plane)
- ♦ RDS Module (Remote Dispensing)
- ♦ TLO Module (Truck Loading)

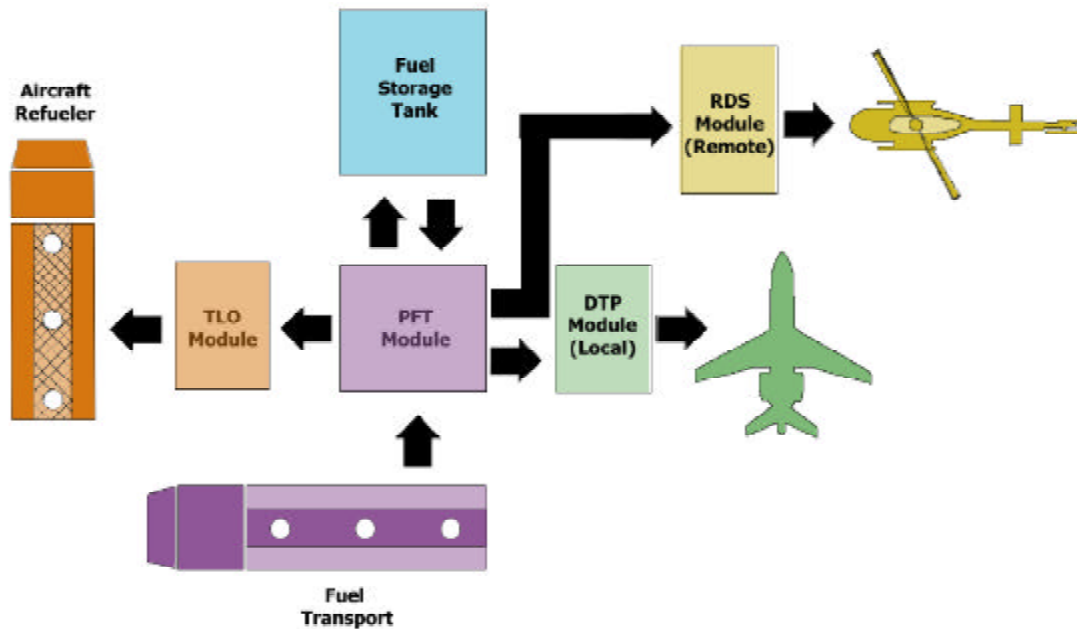


RDS



TLO

MARS Modular Concept



The **MARS family** of Modular Aircraft Refueling Systems from Millennium Systems International is the new standard in Aviation Fuel Farm design. Our innovative MARS Modules are designed to meet over 90% of all FBO Fuel Farm requirements for Avgas and Jet Fuel:

Design

- Standardized MARS Module configurations simplify specification, procurement, maintenance and spare parts support
- Each MARS Module is precision-engineered with rugged, field-proven components to provide years of trouble-free service
- Flexible, modular design allows for system expansion as needs change by simply adding modules; provides a truly "scalable" aviation fueling system solution
- A wide range of options available including Underwing Refueling, Self-Serve Fueling (w/Credit Card Reader) and aluminum or stainless steel cabinet enclosures

The MARS Family

PFT (Pump & Filtration) Module:

- Offload product from **Fuel Transport** and filter into **Fuel Storage Tank** at flowrates up to 200 USGPM
- Recirculate product through filter
- Pump filtered product from storage to other MARS Modules

DTP (Direct-to-Plane) Module:

- Meter and dispense filtered fuel directly into aircraft (15-60 USGPM)
- Installed in close proximity to PFT Module

RDS (Remote Dispensing) Module:

- Filter, meter & dispense fuel directly into aircraft (15-60 USGPM)
- Installed remotely from PFT Module or Submersible Pump

TLO (Truck Loading) Module:

- Meter & Bottom Load filtered fuel into **Aircraft Refuelers** (200 USGPM)
- Installed local or remote to PFT Module

Safety

- Designed, manufactured & tested to exacting industry safety and performance standards including NFPA 407, ATA 103, FAA Circular AC-150, API 1581, API 1529 & API RP 2003.
- No cast iron valves or "red" metals in MARS Jet Fuel modules
- All Stainless Steel valves & piping downstream of filter into aircraft
- Static Relaxation Tank standard on all TLO (Truck Loading) Modules

Quality

- Over 50 years of industry experience in providing innovative system solutions to military & commercial customers world-wide
- Premium quality, name-brand components are part of every MARS Module to insure consistent performance and superior service life

Value

- Lower installed cost than site-built systems; each system is pre-piped and pre-wired for quick, simple installation on concrete pad or AST skid extensions
- Fast and easy interconnect piping to AST or UST
- Suitable for new or retrofit systems; ideal for multi-site users

The MARS Family of Modules



PFT (Pump & Filtration) Module:

- 3" Blackmer Pump (200 USGPM) w/10 h.p. XP, 3 phase motor
- 3" CS Inlet Strainer, CS Piping and D.I./SS Valves (Jet Fuel)
- 200 USGPM API 1581 Filter/Separator w/accessories - or -
- 200 USGPM Filter/Monitor w/Aquacon Elements
- Hannay Static Reel w/20 ft. plastic-coated cable & clip
- XP Start/Stop Station



DTP (Direct-to-Plane) Module

- 1 1/2" Stainless Steel Flow Control Valve
- 1 1/2" Liquid Controls M-5-A-2 Meter w/counter
- 1" Hannay Hose Reel w/alum. internals
- Hannay Static Reel w/50 ft. plastic-coated cable & clip
- 1" x 50 ft. API 1529 Aircraft Refueling Hose
- 1" Overwing Refueling Nozzle w/swivel & strainer
- XP Start/Stop Station



RDS (Remote Dispensing) Module:

- 1 1/2" Stainless Steel Flow Control Valve
- 1 1/2" Filter/Monitor w/D.P. Gauge, vent & drain
- 1 1/2" Liquid Controls M-5-A-2 Meter w/counter
- 1" Hannay Hose Reel w/alum. internals
- Hannay Static Reel w/50 ft. plastic-coated cable & clip
- 1" x 50 ft. API 1529 Aircraft Refueling Hose
- 1" Overwing Refueling Nozzle w/swivel & strainer
- XP Start/Stop Station



TLO (Truck Loading) Module

- 3" Inlet Butterfly Valve
- 3" Liquid Controls M-15-A-2 Meter w/counter
- 100 USC Static Relaxation Tank w/accessories
- 3" Emco Wheaton Mechanical Deadman Valve
- 2 1/2" x 15 ft. API 1529 Aircraft Refueling Hose w/swivel
- 2 1/2" Whittaker F116 Single Point Nozzle w/swivel & strainer



MARS COMBO Module:

- Combined PFT/DTP Module System
- Fuel Transport Unloading / Recirculation / Direct-to-Plane Fuel Dispensing
- Integrated into Single Skid
- Single Phase / Three Phase Inverter System Option
- Configured for future Self Serve / Credit Card Reader

The Leaders in Aviation Fueling Systems Solutions



Tank Farms

- Design & Engineering Services
- Aboveground & Underground Storage Tanks
- Tank Vents, Fittings & Accessories
- Tank Gauging & Overfill Protection Systems
- Loading & Unloading Systems



Expeditionary Cart Systems

- Self-contained Aircraft Refueling Carts for Remote Area Refueling
- Air-cooled Deutz Diesel Engine driven Self-Priming Centrifugal Gorman Rupp Pump (100 to 600 USGPM flowrates)
- Filter, Meter, Fueling Control Valves, Hose Reel, Hose & Nozzle
- Air Transportable by C-130/141 or Helicopter Sling



Specialty Refueling Systems

- Packaged Engineered Skid Systems for Aviation, Marine, Railcar & Truck Loading/Unloading Applications
- Design/Build & Turnkey Installation Services Available Worldwide
- Custom-engineered Transfer, Measurement, Control & Automation Packaged Systems



Pantograph Systems

- NATO-approved Meyerinck Pantograph Systems
- Stainless Steel construction w/spring assist hard pipe or hose interconnection with aircraft
- Standard D-1 Military Single Point Nozzle outlet
- Available w/onboard filter-separator/meter/fueling control valve



Fueling Components

- API 1581 Filter/Separators; I.P.-Qualified Filter/Monitors
- Liquid Controls Positive Displacement Meters
- API 1529 Aircraft Refueling Hose
- Whittaker Fueling Control Valves & Single Point Nozzles
- Blackmer & Gorman Rupp Bulk Pumps



Aircraft Refuelers

- Aluminum & Stainless construction; 750 to 12,000 USG capacity
- Rigid Chassis or Semi Trailer Refueler configurations
- Packaged Refueler Modules; 20 to 800 USGPM flowrates
- Commercial & Military Refueler configurations available

Millennium Systems

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