



# MMU & MCU

## SMART DELIVERY SYSTEMS

[AECIMINING.COM](http://AECIMINING.COM)

 **AECI**<sup>®</sup>  
**MINING EXPLOSIVES**





MCU (MOBILE CHARGING UNIT)

## LEADING INNOVATION IN **SMART DELIVERY SYSTEMS**

*Our Equipment Services Division is an international supplier of original equipment and aftermarket parts with services tailored to the needs of the blasting professional in both underground and surface mining.*

Due to its long standing relationships with component manufacturers across the globe, the Equipment Services Division holds impressive buying power and can offer its customers competitive lead times on equipment and price options.

The division understands that their customers work in environments that leave no room for error and that they cannot afford to speculate on the consistency and safety of their equipment. It is for these reasons that each machine component is exhaustively tested with all possible risk factors in mind before and after the equipment is actually assembled.

The equipment supplied by Equipment Services Division is designed to specification and can be customised for use on any utility vehicle provided by the customer. It further operates in the robust environments typically associated with mining. Once the machines are assembled, they are commissioned and calibrated by a team of professionals with a keen eye for detail. Only once each and every member of the team has signed off on the machine will it be licensed to manufacture explosives and be delivered to the site.

We offer a series of “state-of-the-art”  
**Mobile Manufacturing Units (MMU/MPU’s)** and  
**Underground Mobile Charging Units (MCU’s).**



# MOBILE MANUFACTURING UNITS (MMU/MPU)



## PRODUCT DELIVERY

In order for us to supply our customers with surface bulk emulsion, we have developed a quality engineered delivery system comprising of manufacturing plants, tankers and rapid re-loaders as well as state-of-the-art MMUs.

## ON-BENCH

The actual explosives are only manufactured on-bench. Our 20 ton capacity MMUs translate to better utilisation of equipment due to not having to refill as often as the older generation MMUs. These 20 ton MMUs also have superior pumping rates to ensure efficient charging of holes. MMU utilisation on the bench is further optimised by our rapid re-loader system (RRS).

With the rapid re-loader, the MMU can be refilled on the bench and does not waste time travelling to the silos to get refilled. The benefit to the customer is that there is a greater utilisation of the MMU dedicated for a blast, resulting in blasting sooner, thereby shortening the mining cycle. MMUs can be refilled on the bench either by a rapid re-loader (for prill), by a re-pump truck or by tankers for emulsion.

Currently we have an optimised fleet of tankers and MMUs to meet market demand for TGAN prill and emulsions.

E-SERIES  
MMU/MPU E20t

E-SERIES  
MMU/MPU E16t

R-SERIES  
MMU/MPU R10t



TECHNICAL SPECIFICATIONS

MMU/MPU CAPACITIES

Emulsion Bin Capacity	13 000 kg	10 400 kg	10 000 kg
Prill Bin Capacity	7 000 kg	5 500 kg	-

PUMPING RATES

Product Pumping Rate	250/500 kg/min	250/500 kg/min	80/140/200 kg/min
Product Augering Rate	750 kg/min	750 kg/min	-
Dope	Yes	Yes	-
Blend	Yes	Yes	-

CHASSIS/PRIME MOVER

Standard	MAN 8x4, 8x8	MAN 6x4	MAN 6x4
Other	SCANIA 8x4, 8x8	SCANIA 6x4	SCANIA 6x4

**PRODUCT DESCRIPTION**  
AECI blend MMU/MPUs are capable of pumping or augering the full series of our bulk explosive products. The bin is designed to ADR specifications with four compartments, which allow for better weight distribution and mobility. This process can be mounted on any available prime mover although standardised units like MAN and Scania simplify maintenance and support. All MMU/MPUs comply with the Road traffic Act, Explosive Act and Chassis Manufacture Specifications in South Africa. Our high charging speeds and rapid reloading systems ensure optimal efficiencies.

**APPLICATION**  
Used for charging bulk emulsion in surface mining operations by pumping or augering.

- BENEFITS**
- Proven on-bench reliability
  - Integrated control systems, which guarantee constant delivery of requested product quality and quantity
  - A series of products can be applied on one bench depending on conditions
  - Varying pumping and auguring rates to suit bench hole diameters and conditions
  - Minimal on-bench product spills during start-up/shut-down operations

- FEATURES**
- Pump protection-guarding against dead-heading and dry-running scenarios
  - Strainers on the bin to prevent ingress of foreign objects
  - Closed loop hydraulic control system guarantees product quality
  - In-cab touch-screen user interface
  - Suitable chassis with all standard safety devices selected for rugged on-bench conditions

- SAFE HANDLING AND OPERATION**
- Independent electronic pump protection system monitoring and controlling operating pressures and temperatures on critical pumps
  - Bursting discs on Product and Emulsion pump
  - Hand rails on all sides of the bin- prevent personnel from falling
  - Reverse buzzer
  - Four Emergency E-stops around the MMU/MPU
  - Inspection hoods fitted on all auger couplings
  - Electronic pressure switches to monitor pressure in the pipes
  - Temperature probes to monitor product and hydraulic oil temperature

# SUSTAINABLE BLASTING



## 100 MILLION TREES

### *Eco-friendly explosives, for greener blasting.*

In just a little more than a decade since the introduction of used oils into its various Eco bulk emulsion formulations, AECI Mining Explosives has consumed more than 80 000 000 liters of used oil. This initiative has prevented approximately 55 000 tons CO<sub>2</sub>e into the atmosphere, which equates to having to plant roughly 100 million trees. Thank you for partnering with us in our quest to drive more sustainable blasting.

**AECI**<sup>®</sup>  
**MINING EXPLOSIVES**

# UNDERGROUND MOBILE CHARGING UNITS (MCU)

## CAPABILITY DRIVEN BY VERSATILITY

The company provides a full range of Mobile Charging Units (MCU's), catering for all underground mining applications. MCU's are capable of pumping the full range of our bulk explosives products from development end to vertical holes.

All MCU's are designed to operate in the demanding environments encountered during normal mining operations. Design parameters include all necessary safety control systems, as well as ease of operation, maintenance and reliability. Spares are readily available for all MCU's. Units are of a modular design and are able to be mounted on all utility vehicles supplied or preferred by the customer. Custom designed equipment is available on request.



# UNDERGROUND MOBILE CHARGING UNITS (MCU)



Jumbo MCU's are designed for massive mining applications and can be used for both vertical and horizontal charging applications. Custom modifications include the potential to do development and perimeter charging as well.

## BENEFITS

- Remote charging of rings to enhance safety
- Hose pusher reduces the labour requirement to do up-hole charging
- Speed of charging accelerated by means of application of hose pusher
- Controlled extraction rate of hose ensures full coupling in hole
- Accurate mass of product placed in each blasthole optimizing explosive efficiency
- Tank size optimized to match requirements
- All parameters controlled by PLC



## TECHNICAL SPECIFICATIONS

MCU CAPACITIES			
Emulsion Bin Capacity	2 000 kg, 3 000 kg and 4 000 kg	750 kg - 4 000 kg	-
Sensertiser Tank Capacity	Up to 200 l	Up to 112 l	45 l
Flushing Water Tank Capacity	Up to 290 l	Up to 90 l	45 l
Hose Lube Tank Capacity	Up to 200 l	Up to 112 l	45 l
Pumping Flow Rates	80-100 kg/min	40-50 kg/min	30-40 kg/min
MCU CAPABILITIES			
Boom Reach	9 m horizontal and 11 m vertical	N/A	N/A
Hose Reach	30 m to 40 m (depending on hole depth)	15 m	10 m to 15 m (depending on hole depth)
Hose Length	40 m	15 m	10-15 m
ADDITIONAL INFORMATION			
Driver	Hydraulic or Electric Power Pack	Hydraulic or Electric-hydraulic	Hydraulic from PTO on Gearbox or electric from Engine
UV Used	AARD UV 80 (extended rear for 4t unit)	AARD UV 42, 80, 100, AARD CHARGE, MASTER, GETMAN, FERMEL, NORMET-Charmec	Fitted onto a Toyota Land Cruiser
Injector Mechanism	360° and angle reach adjustable	N/A	N/A
<b>PRODUCT DESCRIPTION</b>	All MCU's are designed to operate in the demanding environments encountered during normal mining operations. Design parameters include all necessary safety control systems, as well as ease of operation, maintenance and reliability. Units are of modular design and are able to be mounted on all utility vehicles supplied or preferred by the customer.		
<b>APPLICATION</b>	Used for underground Automated up-hole charging		
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• Proven reliability in all charging applications</li> <li>• Integrated control systems, which guarantee constant delivery of requested product quality and quantity</li> <li>• Varying pumping rates to suit hole diameters and conditions</li> <li>• Low Maintenance</li> </ul>		
<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Pump protection-guarding against dead-heading and dry-running scenarios</li> <li>• Strainers on the bin to prevent ingress of foreign objects</li> <li>• Closed loop hydraulic control system guarantees product quality</li> <li>• Variable densities</li> <li>• Auto flushing</li> <li>• Electronic data capturing</li> </ul>		
<b>SAFE HANDLING AND OPERATION</b>	<ul style="list-style-type: none"> <li>• Independent electronic pump protection system monitoring and controlling operating pressures on critical pumps</li> <li>• Mechanical pump protection devices installed on all critical pumps</li> <li>• Emergency stops situated at critical locations</li> <li>• Up-hole charging from a safe distance via remote control pendant</li> <li>• Units have a meltable sight-glass on emulsion tank, which melts when exposed to excessive heat eliminating the dangers associated with confinement</li> <li>• Pressure Busting discs</li> </ul>		

# BETTER BLASTING

## UNDERGROUND



BlastWeb®II is designed to enable the modern miner to digitally command blasting operations from a central point and gives the user the ability to control important functions such as ventilation, vibration, seismicity and shift patterns. The system is specifically designed to allow for the safe and efficient initiation of electronic and shock tube systems.

## **AECI MINING EXPLOSIVES HEAD OFFICE**

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