

Magnetic Particle Inspection (MPI) Unit Specification

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MAGNETIC PARTICLE INSPECTION (MPI) UNIT

COMPLETE SYSTEM OVERVIEW



UV LAMP



YOKE



BATTERY / CONTROL UNIT



AIR / INK SUPPLY UNIT (OPTIONAL)



KEY SYSTEM FEATURES



12 VOLT
BATTERY POWERED



DC ELECTROMAGNETIC
YOKE



HIGH INTENSITY
UV LAMP



COMPACT &
PORTABLE SYSTEM



RUGGED & RELIABLE
FOR UNDERWATER USE



DIVER OPERATED
SYSTEM



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ASAMS System 12 Underwater Magnetic Particle Inspection System

Produced following extensive research and development effort by ASAMS, the SYSTEM 12 underwater magnetic particle inspection unit has been developed as the ideal diver operated underwater MPI system for shallow water/tidal water use.

Discussions with inspection diving contractors revealed a requirement for a fully portable underwater MPI unit capable of being used by divers in shallow water or tidal conditions. Ideally, the unit should NOT require any form of umbilical connection to the surface and should be capable of sustaining the inspection operation for up to 4 hours duration.

The result of this development is an inspection system powered from a 12 volt rechargeable battery unit and comprising battery/control unit, DC electromagnetic yoke and a high intensity UV light incorporating an air discharge bulb for high ultraviolet content in the light produced. Magnetic ink can be supplied by attaching the optional ink dispensing unit or even from the surface.

The pressure housings for the battery/electronic control unit and the lamp are fabricated from anodised aluminium alloy and are pressure tested to a depth of 600 feet. A unique power-saving feature of the unit is that both the lamp and the DC electromagnetic yoke can be switched on/off by the diver. The electronic control system used for the gas discharge bulb in the UV lamp enables maximum UV output to be produced within 30 seconds of switching on the lamp and the electromagnetic yoke incorporates a switch unit giving the diver full operational control.

In the event that the optional dispensing system is used, the ink supply to the work piece can be incorporated into the handle of the UV lamp.

System Features

Totally self contained

12 volt battery powered

High intensity switchable UV Lamp

Switchable 12V DC electromagnetic yoke

Ink supply unit (optional)

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U/V Lamp

Item	Value
UV Output	2.3 MW at 450 mm
Voltage	12V DC
Power Consumption	35 Watts
Dimensions	110 mm diameter × 175 mm overall length
Weight	4 kg (in air)
Depth Rating	1000 ft

Yoke

Item	Value
Voltage	12V DC
Current Drawn	2.5 Amps
Pull	20 kg at 150 mm spacing
Dimensions	480 mm (w), 200 mm (h), 220 mm (l)
Weight	3 kg (in air)
Depth Rating	600 ft with switch, 1000 ft (surface operation)

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Battery

Item	Value
Power	12V
Capacity	12 Amp hour
Outputs	2 (U/V lamp and Yoke / Charger)
Dimensions	135 × 200 × 230 mm (h)
Weight	9 kg (in air)
Depth Rating	600 ft

Ink Supply (Optional)

Item	Value
Operation	Air or lever operated
Capacity	0.5 / 1 litre