

WATER CUTTING SYSTEM (AWCS)

GENERAL SPECIFICATIONS NSN 1385-99-244-0530

The high-pressure system provides the capability to cut virtually any material. All modules have a fully weatherproofed design. All modules are manually portable and where necessary equipped with large diameter wheels with pneumatic tyres, lifting handles and lifting points / eyelets. The optional Load Bed Base Pallet (LBBP)

All AWCS components have passed stringent environmental tests (in accordance with UK Def Stan 00-35), EMC tests (in accordance with UK Def-Stan 59-41) and reliability tests (in accordance with UK Def-Stan 00-40).

Operating temperature 0°C to +53°C as standard. Operation in -10°C to 0°C may be achieved by using a saturated saline solution in place of fresh water. AWCS equipment operating within 10 metres of the target has a low magnetic signature



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ENGINE / PUMP MODULE

A single cylinder diesel engine with charging coil and a high-pressure pump and AWCS power control box

This module attaches to the pump module and provides the mechanical force to the high-pressure pump. The charging coil ensures that the 12v 40Ah starting battery on the pump module is float charged during normal use. The engine module has integrated lifting handles, integrated lifting eyes, a 4.5 litre fuel tank, and electric and manual start. The engine module has safety interlocks such that it can be shut down within seconds in the event of an emergency.

The pump produces the flow of high-pressure water to the slurry module. The control box contains the main safety relay and system interlocks. The system power supplies are generated at this control box. The pump module has a 40 litre header tank with filtered & unfiltered water inlets, has lifting handles, lifting eyes, removable large diameter wheels, a 12V 40Ah maintenance free lead acid battery, variable high pressure pump (0 to 690bar), 60v DC Output, 48v DC Output, engine hours run meter, battery gauge, power on indicator, water low indicator, industry approved safety relay, key activated safety interlocks for fuel and safety reset.

SLURRY MODULE

Provides the means of reliably mixing a controlled rate of abrasive slurry to the high pressure water flow from the pump module.

This module connects to the high pressure pump and discharge hoses. The slurry module has lifting handles, lifting eyes, removable large diameter wheels, safety relief depressurisation valve (715Bar), and a calibrated dipstick to aid abrasive refill.



WATER SUPPLY MODULE (OPTIONAL)

Provides a flow of up to 12 litres per minute of filtered water

The two stage 20 micron filter system and long inlet hose allows use of water from sources such as the sea, rivers and lakes. The water supply module has a UK Fire Hydrant Coupling (Type: 2.5" BS 336 instantaneous connector, 3/4" BSP female threaded connection, maximum working pressure 15 bar). The water supply module has lifting handles, lifting eyes, removable large diameter wheels, a rechargeable 12V 85Ah Battery, and control box with pump hours run meter.



AWCS EQUIPMENT

HAND CONTROLLER

To program manipulator functions for scanning / cutting / wash out operations

This unit communicates with the electronics within the 20m Cable Reel and provides feedback to the system operators by way of progress reporting, built in test (BIT) routines and a series of fault codes. The hand controller has an emergency stop switch and built in test (BIT) functions.

This unit has a simple and intuitive design for use with gloved hands and has backlit controls for use in low light conditions.



MANIPULATOR AND FRAME

The manipulator assembly consists of three independently driven axes.

The manipulator is normally mounted on the manipulator frame, but as this unit is self-contained, it can be mounted on any stable platform using the end brackets. The manipulator is waterproof to three metres, has a low magnetic signature, and has quick release clutches for easy setup.

The manipulator frame provides a stable mounting base for the manipulator. The frame has standard set ups for common tasks, but can also be configured in non-standard forms to meet the variety of tasks likely to be encountered. Standard size scaffold tubing. The frame components have a low magnetic signature. The feet have a hole for securing the frame on uneven ground, and a high friction rubber sole provides additional grip on hard surfaces.

CABLE REEL

Provides the motor control functions and power for the manipulator module.



ABRASIVE WATER CUTTING SYSTEM (AWCS) SPECIFICATIONS

ENGINE MODULE

6kW diesel engine
12v electric key start
Manual recoil starter
Internal alternator
Dims 525 x 460 x 538mm (L x W x H)
Weight 84Kgs

PUMP MODULE

690 Bar
5 litre per minute
42 litre water header tank
Pressure gauge
Pressure control valve
Safety relief valve (715 Bar)
Dims 1090 x 540 x 705mm (L x W x H)
Weight 119 Kgs

SLURRY MODULE

12 litre mixing/storage vessel
Manual abrasive recharge pump
Outlet & recharge control valves
Pressure gauge
Safety relief valve (715 Bar)
Emergency depressurisation valve
25 minute run time per charge
Dims 613 x 450 x 930mm (L x W x H)
Weight 140Kgs

WATER SUPPLY MODULE (OPTIONAL)

20 micron filter system
12 litres per minute
Automatic on/off flow switch
UK hydrant connection
Long inlet/outlet hoses
Dims 500 x 600 x 400mm (L x W x H)
Weight 79Kgs

HAND CONTROLLER

Hand held robust unit
Fully backlit controls
Continuous status display
Built in self test functions
Two line LED display
Large controls for gloved hands
Dims 276 x 162 x 109mm (L x W x H)
Weight 2Kgs 20m Cable Reel

BUILT-IN CARRYING HANDLES

Drum brake
Built-in self test functions
Dims 400dia x 150h
Weight 23Kgs

MANIPULATOR

Electrical manipulation system
Three axis drive system
Linear (X or Y 600mm)
Rotary (continuous)
Depth Axis (Z 250mm)
Dims 1340 x 440 x 735 (L x W x H)
Weight 31Kgs

MANIPULATOR FRAME

Standard size scaffold tubing
Adjustable hinges
Height adjustable feet with lock nuts
Weight 29Kgs

ANCILLARY COMPONENTS

The complete AWCS comprises other equipment including:
100m High Pressure Hoses, 160m Cable Reels,
3m and 17m Cable Assembly,
20m Cable Reel Battery Charger, Transport Cases,
Abrasive Recharge Vessel, Transfer Hoses (Various),
Operator Tool Kit, Operation & Maintenance Manual,
Cutting Nozzle Holder, Manipulator Nozzle Brackets
(Various), LED Scanner and a consumables pack.

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