

# WJA Mandatory Safety Awareness Course Content

## 1 Registration & Introduction

## 2 Applications & Machines

Effect of varying pressure/flow at the nozzle - range of jetting machines - configurations & categories (pressure washers / general purpose / medium-heavy duty / UHP / drain & sewer jetters)

## 3 Legislation & The WJA Codes Of Practice

Health & Safety at Work Act - WJA Codes of Practice – status, use and recognition by the HSE Management Regulations - Risk Assessment – PPE at Work Regulations – COSH - Employer/Employee responsibilities – Enforcement Powers – other relevant legislation e.g. Environmental Protection Act / Control of Pollution Act.

## 4 Jetting Equipment – Nozzles

Jet principles – purpose of nozzles - power of water jet - jet pressure/flow characteristic - jet reaction force. Types of nozzle – forward facing, fixed & spinning jets, multi-jet fixed & spinning nozzles.

## 5 Jetting Equipment – Pumps

Pump configuration – standard piston / plunger pump, positive displacement action, operating features, effects of blockages, variation of plunger sizes. Other pump configurations - diaphragm and intensifier types. Drive arrangements - engine / electric motor, hazardous area equipment. Water supply/delivery features – filtration requirements, boost feed pumps, pulsation dampers, jump-jet. Pressure safety relief options – relief valve / bursting disc. Pressure gauge features.

## 6 Jetting Equipment – Pressure Controls

Dump & dry shut controls - fail-safe / selector versions, direct manual operation / remote operation via electric-pneumatic-hydraulic controls, automatic unloader valve for dry shut, pressure regulators, and automatic off-load engine speed control systems.

## 7 Jetting Equipment – Water Jetting Hose

Hose construction & pressure ratings, external & internal damage possibilities, hazards arising from damaged hoses, inspection requirements. Hose end fittings, construction/assembly/testing. Connectors & hose end couplings – types & features. Bore size & flow ratings. Hose for general/high flow/small bore tube & pipe cleaning. Pressure drop due to flow through hose & lances – effect on pressure available at the nozzle.

## 8 Water Jetting Hazards

Hazards arising directly from the water jet - from operational regime - from site environment.

## 9 Water Jetting Injuries

Effects of impact by high pressure water jet – nature of internal injuries caused – action in event of a jetting injury – awareness of possible absence of visual injury & use of WJA Medical Card.

## 10 Personal Protective Equipment

General principles regarding use of PPE, as a last resort; Main body protection – limits on effectiveness against direct impact of water jet; Protection of head, hands, feet, hearing, respiration; Particular requirements when using UHP.

## 11 Operational Procedures

Routine care & inspection - site preparations - preparations for operation – team operation. Safety points during operation – use of manual jetting gun/lance, tube/pipe/drain cleaning nozzle/lance/ hose combinations & techniques. Safe use of non-standard equipment e.g. tee nozzle. Site shutdown & anti freeze procedures. Use of DO / DO NOT GUIDE.

## 12 Summary

Review of course content as above – with opportunity for any further discussion before Questionnaire.