

For testing small components at pressures up to 70 Bar g there are three enclosed booths two of which measure 2,000mm long x 1,900mm wide x 1,850mm high.



To complete the hydrostatic testing facilities there is a third Low Pressure booth which measures 10,000mm long x 5,000mm wide x 2,500mm high suitable for the testing of large low pressure components. Again like the two adjacent high pressure booths drain water is collected in the sump tank and recycled.



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CLYDEUNION offers the following heritage products:



* This is a heritage product acquired when the Weir Pumps business transferred to Clyde Pumps in May 2007

We are constantly endeavouring to improve the performance of our equipment and as a result, we reserve the right to make alterations from time to time, and equipment may differ from that detailed in this brochure.

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• Mitsubishi Vertical Machining Centre

The main manufacturing facility of CLYDEUNION is located in Glasgow, Scotland & extends to over 70,000 m². It contains a comprehensive range of machine tools, which cover all major machining operations.

This manufacturing capability is continually being updated to take advantage of the most modern advances in machine tool technology, and at time of going to press CLYDEUNION has 38 CNC machines in operation as well as a wide range of conventional plant.

The company utilizes the well-proven "lean production system". This single flow, lean manufacturing process with dedicated production units means less wastage and greater efficiency.

CNC MACHINES		
DORRIES VC 3000/220 Vertical turning centre	1	Max swing 3000mm, RAM stroke 1500mm, live spindle, 60 station ATC, height under RAM 2135mm
SCHARMANN ECOCUT 2Z Horizontal machining centre	1	Max pallet size 2200mm x 1600mm, integral facing head, 115 station ATC, X - 2500mm, Y - 2000mm, Z - 1500mm, B - axis
Both machines are linked by a Pallet Transportation System to form a Flexible Machining Cell. (Six pallets within the system are interchangeable between both machines)		
YAMAZAKI CNC VTL	2	1250mm chuck diameter, twin pallet, live spindle, vertical/axial, 20 station ATC
YAMAZAKI CNC Turn/Mill centres	9	4022mm between centres, 915mm swing, 60 station ATC
COMPACT 2 EDM	1	Work Tank 850mm x 400mm
BEAVER Vertical machining centres	3	Table 980mm x 580mm, 36 station ATC, C -axis
SCHARMANN SOLON 4 Horizontal machining centre	1	4 pallet shuttle, pallet size 1250mm x 1000mm, 161 station ATC
MAZAK Horizontal machining centres	2	Table up to 800mm x 800mm, 60 station ATC
OKUMA Vertical twin spindle lathe	1	Twin chucks, 500mm diameter, maximum height 610mm
Shaft Lathes	4	Up to 4m between centres, 915mm swing
Chucking Lathes	2	Chuck diameter up to 400mm, 554mm swing
Bar Lathes	3	Bar diameter up to 90mm x 3m long
Vertical Borer	1	Table diameter up to 1219mm, max height 1499mm
Vertical machining centres	4	Table capacity 4000mm x 1500mm, 40 station ATC
Horizontal Borer -table type	1	Table capacity 1800mm x 1800mm
Horizontal Borer -floor type	1	Max table size 12,000mm x 5400mm
Pipe Bender	1	73mm outside diameter x SCH 80 pipe diameter



• Mitsubishi Vertical Machining Centre



• Mitsubishi Vertical Machining Centre



• Asquith Horizontal Floor Borer

KEY CONVENTIONAL MACHINES	
VERTICAL BORING MILLS	Max table size 1981mm diameter, max height 1803mm
HORIZONTAL BORING - table type	Max table size 1830mm x 1220mm, max weight 12 tons
CYLINDRICAL GRINDING	Up to 4882mm between centres, max swing up to 500mm
HORIZONTAL BALANCING	Max weight 2000kg, diameters up to 1600mm, max distance between pedestals 3380mm, balancing speeds up to 1900 rev/min
CENTRE LATHES	Up to 4262mm between centres, max swing up to 900mm, max length 1000mm
COMBINATION TURRET LATHES	Max swing up to 762mm taper turning/hydraulic profiling/threading
RADIAL ARM DRILLS	Max table size 2565mm x 1194mm, max height 1930mm, arm 3048mm
HONING	Max component length 2000mm, max diameter 300mm

Front Cover: Dorries VC 3000/220 vertical turning centre & Scharmann Ecocut 2Z horizontal machining centre, linked by a pallet transportation system to form a flexible machining system (FMS)

Fabrication & Welding

Fabrication Facilities

Guillotine - 10mm – 3m long
 Bending - up to 30mm x 3m wide
 Flame Cutting - carbon steel up to 200mm thick
 Plasma Cutting - up to 25mm thick
 CNC pipe bending to 73mm outside dia x SCH 80 pipe capacity



• CNC Flame/Plasma Cutting Machine

Materials

Carbon/Carbon Manganese Steels
 Austenitic Stainless Steels.
 Copper/Copper Alloys
 Martensitic Stainless Steels
 Duplex Alloys

Qualifications

Lloyds Class 1 up to 25mm thick
 BS EN ISO 9001 - 2000
 ASME Boiler & Pressure Vessel
 Code Section III class 2 & 3
 Vessels, pumps, etc

Welding Processes

Manual Metal Arc (MMA)
 Tungsten Inert Gas (TIG)
 Metal Inert Gas (MIG/pulsed MIG)
 Hot Wire TIG



Assembly & Performance Testing

Extensive facilities are available for assembly & testing.

- Assembly/Test – up to 66 tonnes
- Hydrostatic pressure testing - up to 965 bar
- All pressure containing parts are hydrostatically tested in accordance with British Standards
- Testing capacity – up to 68,000m³/hr.
- Power available - up to 15,000 MVA.
- Pipe work – up to 1500mm diameter.
- 9MW variable Speed Drive System
- Deep well testing facilities are also available. Test pits – up to 21m long x 4 m wide x 3m deep with deep well facilities within: 10.6m deep x 3m diameter, 6m deep x 3m diameter
- Computerised hydro-test & performance test monitoring



• Mitsubishi Vertical Machining Centre



• 2 High Pressure test booths with doors open & one roof retracted



• Control Panel



• CCTV Monitors



• CCTV Monitors



• Floor Mounted Camera

The component being tested is also viewed via CCTV cameras, which are located in each booth. There are two types of camera in the booths. These are pan, zoom and tilt type giving a comprehensive viewing capability and the fixed type which has no pan, zoom or tilt facility. Viewing capability is further enhanced with the use of portable floor mounted cameras. Pan, zoom and tilt cameras have been tested under the most stringent conditions using Jaeger Text Charts to meet ASME Nuclear standards for remote visual examination. These cameras have the ability to detect imperfections and discontinuities on the surface of components including cracks, wear, corrosion or erosion to ASME VT1 level.



• High Pressure Booth

The High Pressure booths are 6,000mm long x 4,000mm wide x 4,000mm high with double doors at the front and a retractable roof to facilitate loading of components into the booth. Both high pressure booths have suitable drainage within the booth which is collected in a sump tank and recycled via a filter and feed tanks for the next test. The feed tanks are located at the rear of the booths.