



LEADERS IN BOOSTER SETS,
PRESSURISATION UNITS AND CONTROLS

WATER PRESSURE BOOSTER SETS

WITH ALL PUMPS VARIABLE SPEED



AQUAMATIC 'HY-AV' 2020PLUS SERIES



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Overview

The Aquamatic "HY-AV" range of quality assured cold water pressure booster sets, is designed to increase the pressure of the cold/hot water services within a building where the existing incoming mains or feed tank is not capable of supplying sufficient system pressure. Incorporating inverter driven variable speed pumps, which continually vary the motor speed to match the changing flow demand pattern, whilst maintaining a constant system duty pressure. This mode of operation, adjusting the pump's motor speed to the building's flow requirements, reduces the power consumption dramatically.

Our multiple pump sets are arranged for operation as duty pump, with assist/standby pump or pumps (up to 8). All are programmed to run in staged cascade operation as the flow demand increases and similarly as demand decreases. All pumps are assembled on a common base frame with a Microprocessor control panel and all necessary valves and fittings to ensure ease of installation and efficient, reliable operation.

Standard Features

- Energy Efficient Variable Speed Pumping on all motors to maintain constant pressure
- '2020Plus' Microprocessor/Transducer Control for long term reliability and accuracy with 'REPRESS' system protection
- Automatic Cascade Control for up to eight pumps
- User Friendly Keypad & illuminated 2 line LCD Display for 'Plain English' information for both system status and system pressure
- Electronic Low Water Cut-Out for pump dry running protection, with auto re-start upon water restoration.
- All pumps are WRAS approved and are ECA Energy Technology Listed Product.
- BMS Volt Free Enhanced package fitted as standard
- Built to Latest CE Requirements and in accordance with ISO9001
- Copper pipework as standard, stainless steel, galvanised and plastic options also available
- Fluid category 5 (water supply regulations 1999)
- Designed and built in accordance with ISO9001
- PED compliant BSI certificates CE 95657 & 95658

Specification

Aquatech Pressmain "HY-AV" series Cold Water Pressure Booster Pump Set arranged for operation as duty pump with assist/standby pump(s) all under variable speed motor control via Aquatech Pressmain 2020Plus microprocessor control panel requiring single/three phase electrical supply (as appropriate - see below). Complete with interconnecting wiring and all necessary valves and fittings to form suction and discharge manifolds. All assembled on a steel base frame.

Designed, manufactured and tested in accordance with ISO9001 quality assurance procedures, using WRAS approved components suitable for potable water specification. Compliant with all relevant European Community Directives as required by law. CE marked.

Automatic variable speed pump motor control by Aquatech Pressmain 2020Plus microcontroller for long term reliability and accurate pressure measurement by 392 transducer. Automatic alternations of all pumps to even wear with adjustable pump running time. Sequential pump starting to avoid overloading electric supply. Hand/off/auto switches for each pump on panel fascia. Motor overload protection. Electronic low water protection, interlocked door isolator, RS232/485 serial communication port. Data logging function, indicators for pumps run, hand, off and auto. "User Friendly" fascia mounted keypad for entering/retrieving data and system parameters, with illuminated 2 line LCD display for pressure, faults and information in plain English. Also indicating: Power on, System Working Pressure, System status, Low or High Water Level in feed tank (where fitted), Low System Pressure, High System Pressure, Pump Hours run, Pump Failed, Transducer Failed and service reminder. Our 2020plus enhanced micro software also features the RE-PRESS power restoration electronic safety system, offering the the end user a controlled system refill following electrical supply failure.

In addition to the above there is the "BMS Enhanced" package fitted which gives 8 volt free relay outputs, pump tripped lights on panel fascia.

The above equipment is complete with all necessary terminals, labels and interconnections, enclosed in a sheet steel, dust and damp proof housing with lockable door to IP54.

HY-AV OPTIONAL FEATURES & ANCILLARIES

Pipework Material Options

Aquatech Pressmain can supply; Copper, Galvanised, ABS, UPVC and Stainless Steel in both 304 and 316 standards.

Flexible Connections

Made from EPDM rubber suitable for potable water applications, this spherical bellows type flexible coupling joint will absorb pipe movements, isolate vibration, reduce system noise and protect plant against start up surge forces. Gaskets are not required and the joints are easily and speedily installed. System pipework mating flanges are available upon request.

Anti Vibration Mountings

When fitted this turret type mount will isolate the pump package from the ground or floor-mounting surface. The mounting will arrest and reduce pump rotation starting inertia and associated vibration being transmitted through the ground or floor-mounting surface, which could potentially cause a noise problem.

High Level Feed Tank Alarm Probe

This probe is available for side and top mounting and provides a visual warning of tank high level via the control panel fascia. BMS link is also provided via the shared level volt free output.

2020plus Twin Section Tank Monitoring

When using Aquatech Pressmain LW3 auxiliary tank level sensors, the 2020plus control system can accept two low water level sensors and twin high level sensors where a twin compartment tank is used. BMS link is provided via the shared level volt free output for low or high level conditions. Sensors in each tank compartment can be isolated via the 2020plus controller while tank cleaning or maintenance is in progress and retaining water supply via the booster pump set to the building. This arrangement is designed to replace the normal suction mounted manifold low water protection probe, which Aquatech Pressmain fit as standard.

GRP Weather Proof Enclosure

Where internal plant room space is at a premium or where a unit need to be remotely located this fully encapsulated 25mm pre-insulated GRP enclosure may provide the ideal solution. It is supplied with an internal frost stat, heater, natural vents and access door with Yale lock. Please see separate data sheet DS118 for further details.

Acoustic Attenuator Enclosure

Although the standard package meets stringent EC noise levels, this enclosure is specifically designed for noise sensitive applications. Typically an insertion loss of approximately 30dB(A) can be achieved in most applications. Enclosures are supplied complete with naturally ventilated acoustic louvres, removable panels for easy pump maintenance and glazed vision panel for viewing pump controls fascia.

Remote Alarm Panel

Suitable for wall mounting where indications of warning and alarm conditions are required remote from the unit's location.

Distribution Manifolds

Prefabricated with our proven in-house copper extrusion method as used with the pressure booster set manifolds. Can be assembled with any number of individual stabbings and combination of isolating, non-return, double check valve & water meters to suit the building installation requirements.

Control Panel Options

In addition to the standard features listed we can provide and are not limited to the following options; Emergency Stop Button; Pump run volt free contacts; Individual pump isolators; Anti-Condensation panel heater; Volt meter & switch; 4-20ma pressure output. Form 2 and Form 4 compartmented control panel systems can also be accommodated.

Please feel free to discuss any special requirements with our sales team.

AQUAMATIC 'HY-AV' SERIES INSTALLATION GUIDANCE NOTES

Electrical

Units are designed for a 240 volt AC 1Phase 50Hz electrical supply for motors up to 1.1 kW and 415 volt AC 3phase 50 Hz electrical supply for motors above 1.1 kW. Electrical design and equipment conforms to BSEN 60204-1-1993 regulations, it is important that all subsequent wiring and protection equipment reflects this.

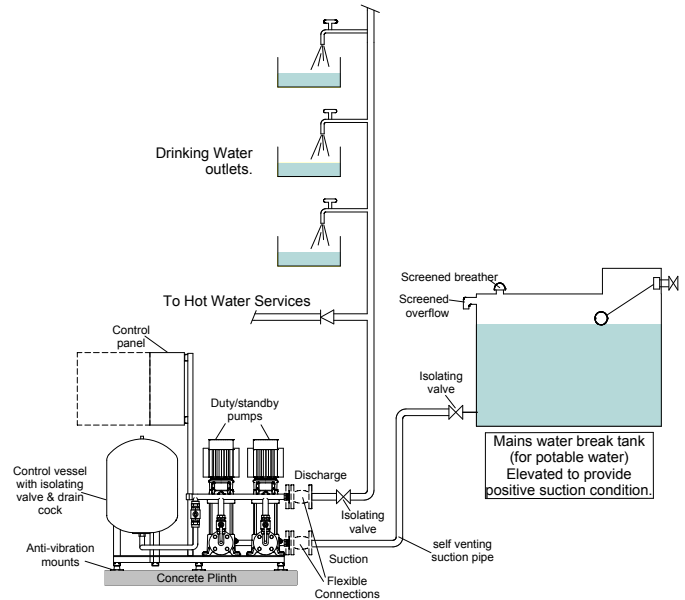
Hydraulic

The design of this unit enables it to be located in any position in a plant room with the minimum of inconvenience to pipework layout. Installer to fit isolating valves on break tank supply and riser to system. Note: Swing check valve/s should not be fitted on the discharge pipework.

Mechanical

The unit should be mounted on a flat, slightly raised plinth and bolted down. Aquatech Pressmain recommend that when the unit is installed adequate room for servicing access is left around the unit. A gap of around 500mm is preferable. The selected pumps are designed for quiet operation and are virtually vibration free. Where silent operation is essential the possibility of using a combination of some of the optional extras may be considered.

Typical pipework arrangement using variable speed cold water pressure booster set feeding hot & cold water services.



Commissioning

Following electrical, hydraulic and mechanical installations as above, all units should be commissioned by Aquatech Pressmain.

CONSTRUCTION STANDARDS FOR MINIPACK SERIES

COMPONENT	MODEL/SERIES	STANDARDS/CLASS	REMARKS
Pumps	Vertical or Horizontal		WRAS Approved
Mechanical Seal	Tungsten Carbide/Ceramic	DIN 24960	WRAS Approved
Pump Motors	TEFC	IP55, Class 'F' Insulation EFF1	Continuous Rated
Isolating & Non-Return Valves	Ball Valve	PTFE Ball Seat	WRAS Approved
Suction & Discharge Manifolds	Copper	EN 1054	
Control Cabinet	2000Plus Series	IP54, BSEN 60204 part 1:1998, 89/336/EEC	CE Marked
Overloads	SCB or Electronic	BS, UL, CSA, VDE, IEC	
Interlocked Door Isolator	GHA	BS, UL, CSA, VDE, IEC	
Microprocessor Controller	2020Plus	93/68/EEC	
Hydraulic Accumulator	60VR to 500VR	DIN 4807, BS6144:1990 Replaceable Diaphragm	WRAS
Quality System		BS EN ISO9001	Registered by BSI
CE Marked		PED, EMC Directive, Safety of Machinery	PED Nominated Body - BSI



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The information in this specification is correct at time of issue; as Aquatech Pressmain design and development programmes are continuous, we reserve the right to make any changes to this specification without prior notice.