Pressurisation Series

ARMSTRONG

Make-Up Units

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Pressurisation units for sealed heating & chilled water systems

The 3750 Pulpress series of microprocessor controlled pressurisation units are designed to make up any losses due to system leakage and to maintain the initial system design fill-pressure in sealed LTHW, MTHW or chilled water systems, and all types of systems as set out in BS7074 parts 1, 2, and 3. They are ideal for domestic or industrial premises. 3750 Pulpress units are designed for applications where there is a need to pressurise and provide make-up for sealed systems within a building.

Sealed system advantages

1. Units comply with BS7074
2. Compliant with EMC regulations, machinery and low voltage directives
3. Fully packaged units
4. Comprehensive electrical/electronic control systems
5. Full on-board service facilities

Conventional heating systems are provided with a feed and expansion tank, normally positioned above the highest point in the system. This feeds the system with water, accommodates expansion and replaces losses due to evaporation.

With this type of arrangement air is absorbed into the water with resultant corrosion of heat exchangers, pipework and boilers.

A sealed system limits air intake and corrosion to a minimum and only needs fresh water make-up to replace any losses caused by leakage.

The conventional header tank, with its housing, associated pipework and lagging, is dispensed with and atmospheric contamination is excluded.

Higher flow temperatures may be used in sealed systems which, with larger temperature drops, permit lower

Easy to install and service

The attractive enclosure has front access to the pumps and control panel. Service and maintenance points are available for commissioning and maintenance.

Piping configuration is such that it will allow the standby pump (twin-pump units) to continue operating even if one pump is completely removed for servicing.

Glycol Auto-Fill

GLA 606/626

The glycol make-up unit has been rarely seen as a standard plant item. It has usually been provided as a custom-built product. GLA houses all the water/glycol make-up components in an enclosed unit with large storage capacity yet small footprint. Available with single or duty/standby pumps and an extensive options list for low and medium pressure systems containing glycol.

Features & benefits

- All features of standard make up units but with glycol make-up facility
- Powered agitation of glycol/water mixture ensuring uniform density
- Comprehensive BMS interface
- 200 litre mixing tank capacity

Advanced concept pressurisation units

3750 Pulpress

Cabinet enclosed unit, specified for wall or floor mounting, providing control for low and medium pressure systems. Available in a wide range of specification levels with duty or duty/standby pumps. Microprocessor controlled with optional VFC interface and connection to BMS systems. Rotomould lightweight construction providing an environmentally friendly recyclable pressurisation solution.

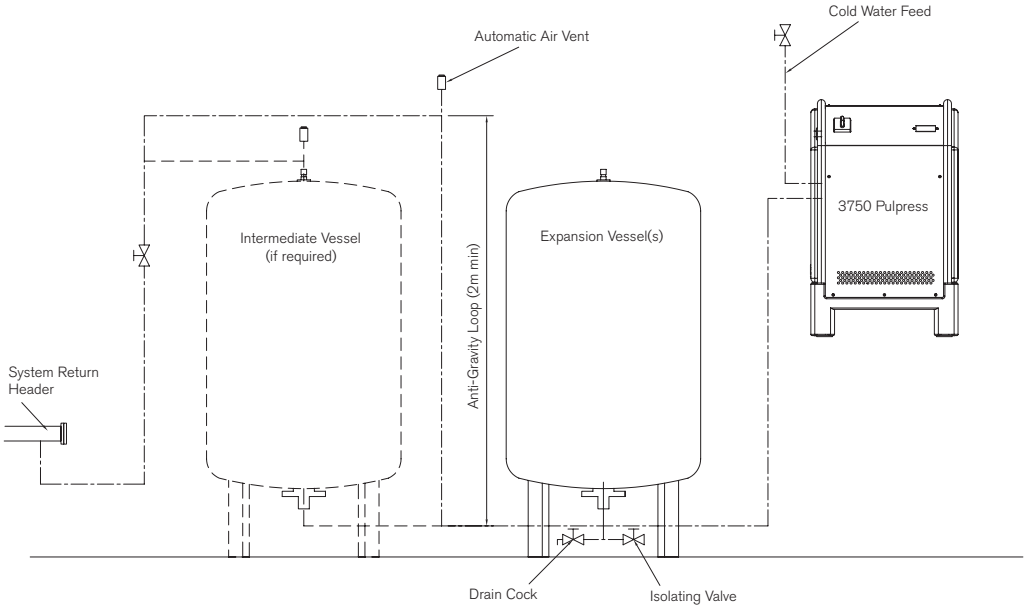
Features & benefits

- Floor or wall mounting
- Controls versatility
- Ex stock availability
- Enhanced option with VFC's
- Microprocessor as standard
- Dual system capability

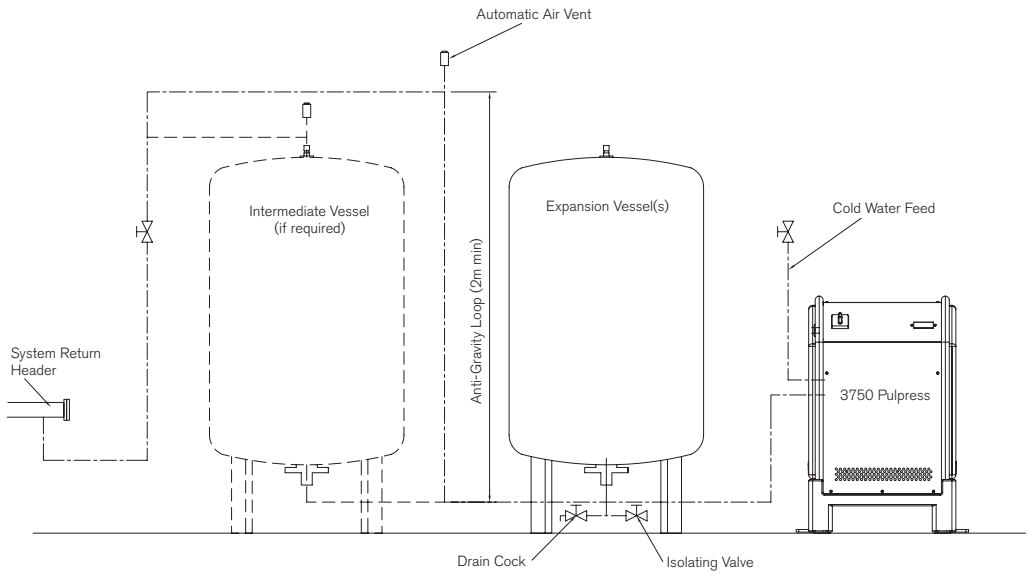
Typical installations

Recommended installation of Armstrong Pressurisation make-up units and Expansion vessels

Wall mounted option*

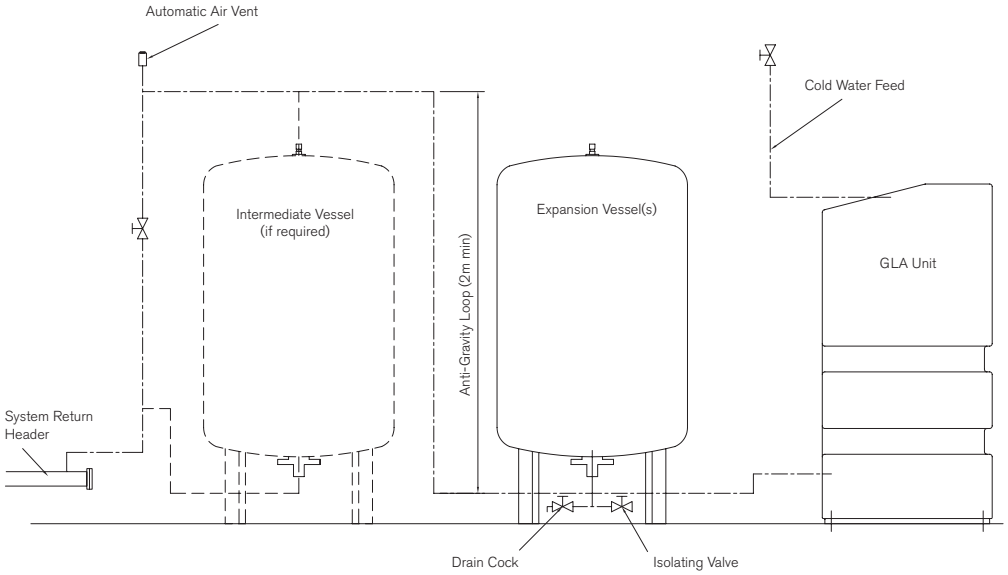


Floor mounted option*

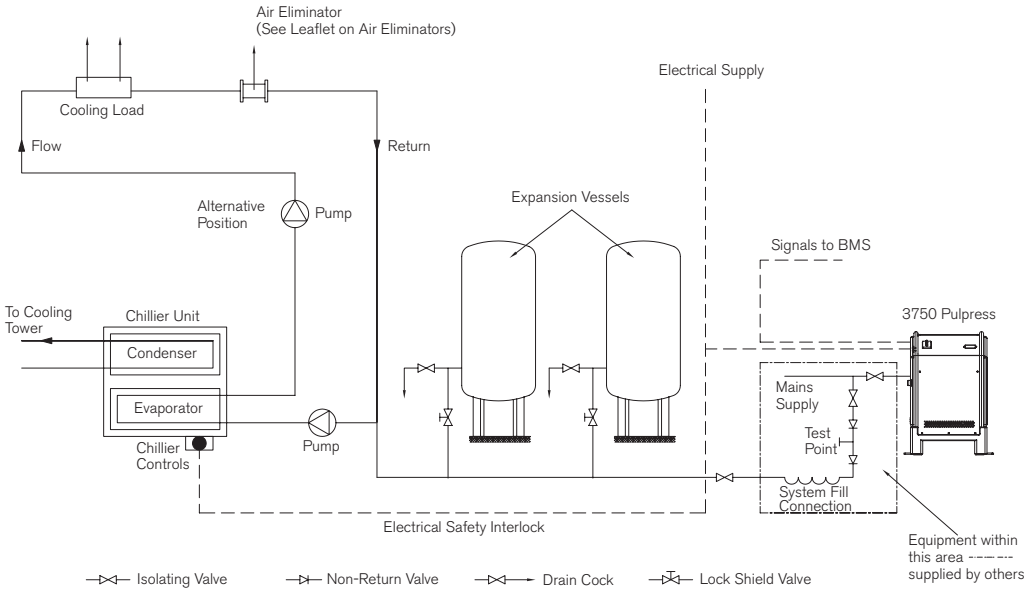


* For two system variants, duplicate installation.

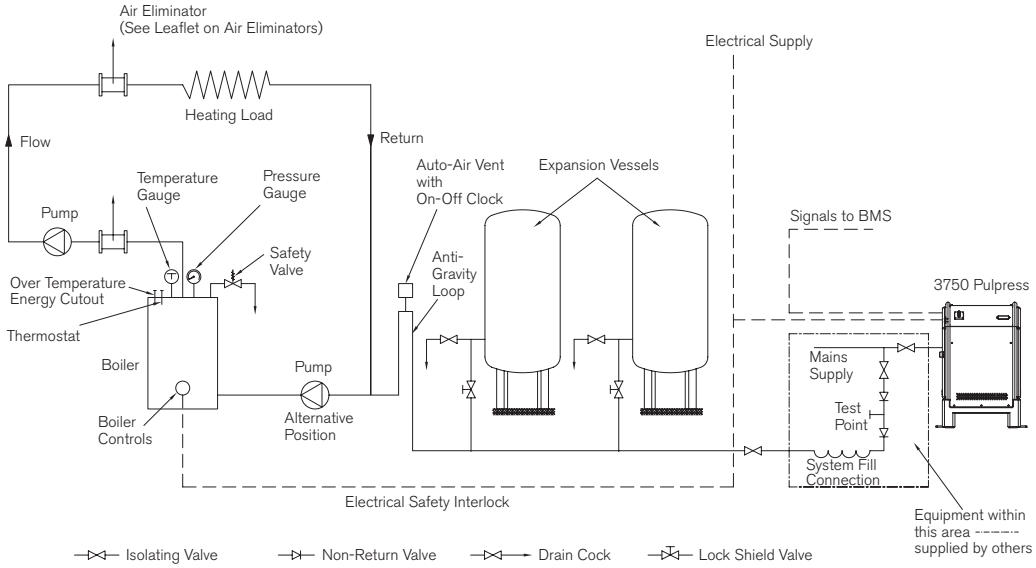
GLA floor mounted (only)



Typical chilled-water sealed system



Typical LTHW Sealed System max. 100°C



Typical MTHW sealed system - max. 120°C

The arrangement of the MTHW scheme is similar to the LTHW system above but has, in addition, an intermediate vessel installed between the expansion vessels and the system connection.

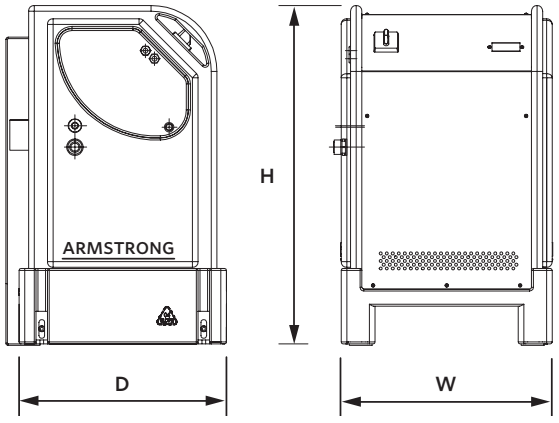
The volume of water contained in this vessel ensures that the return temperatures at the boiler are not transferred to the expansion vessel, where damage to the diaphragm would otherwise occur.

Warning notes:

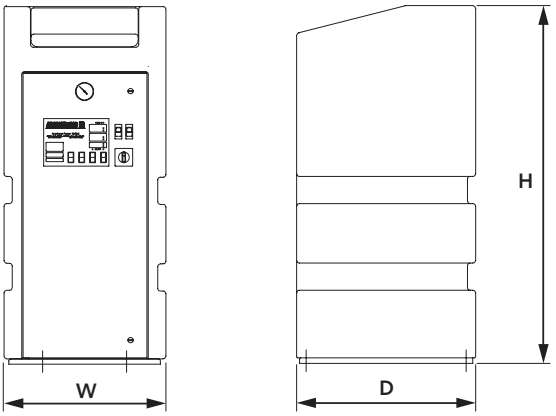
1. Packed-gland circulating pumps must **not** be used in sealed systems.
2. Water treatment must **not** be added to the system via the 3750 Pulpress break tank.
3. No part of the set, expansion vessel, intermediate vessel or connecting pipe is to be lagged.
4. Precautions should be taken to ensure that Lock Shield Valves are protected against unauthorised closure.

Dimensions and weights

MODEL	MOTOR kW	RPM	PHASE	STARTING CURRENT (A)	FULL LOAD CURRENT (A)	MWSP (BAR)	DIMENSIONS W	H	D	WEIGHT (KG)	WATER INLET CONN. (BSPM)	SYSTEM CONN. (BSPF)
3750-1SL	0.37	2900	1	7.5	2.5	2.7	560	902	557	42	½ "	½ "
3750-1EL	0.37	2900	1	7.5	2.5	2.7	560	902	557	42	½ "	½ "
3750-1VL	0.37	2900	1	7.5	2.5	2.7	560	902	557	42	½ "	½ "
3750-1SM	0.50	2900	1	8.7	2.9	5.5	560	902	557	55	½ "	½ "
3750-1EM	0.50	2900	1	8.7	2.9	5.5	560	902	557	55	½ "	½ "
3750-1VM	0.50	2900	1	8.7	2.9	5.5	560	902	557	55	½ "	½ "
3750-2SL	0.37	2900	1	7.5	2.5	2.7	560	902	557	42	½ "	½ "
3750-2EL	0.37	2900	1	7.5	2.5	2.7	560	902	557	42	½ "	½ "
3750-2VL	0.37	2900	1	7.5	2.5	2.7	560	902	557	42	½ "	½ "
3750-2SM	0.50	2900	1	8.7	2.9	5.5	560	902	557	55	½ "	½ "
3750-2EM	0.50	2900	1	8.7	2.9	5.5	560	902	557	55	½ "	½ "
3750-2VM	0.50	2900	1	8.7	2.9	5.5	560	902	557	55	½ "	½ "
3750-2VH	0.75	2900	1	9.1	3.2	8.0	560	902	557	55	½ "	½ "
3750-2SLT	0.37	2900	1	7.5	2.5	2.7	560	902	557	42	½ "	½ "
3750-2ELT	0.37	2900	1	7.5	2.5	2.7	560	902	557	42	½ "	½ "
3750-2VLT	0.37	2900	1	7.5	2.5	2.7	560	902	557	42	½ "	½ "
3750-2SMT	0.50	2900	1	8.7	2.9	5.5	560	902	557	55	½ "	½ "
3750-2EMT	0.50	2900	1	8.7	2.9	5.5	560	902	557	55	½ "	½ "
3750-2VMT	0.50	2900	1	8.7	2.9	5.5	560	902	557	55	½ "	½ "



3750 PULPRESS



GLA

MODEL	MOTOR kW	RPM	PHASE	STARTING CURRENT (A)	FULL LOAD CURRENT (A)	MWSP (BAR)	DIMENSIONS W	H	D	WEIGHT (KG)	WATER INLET CONN. (BSPM)	SYSTEM CONN. (BSPF)
GLA 606/L	0.5	2900	1	5.6	2.1	8	600	1300	600	65	½ "	½ "
GLA 626/L	0.5	2900	1	5.6	2.1	8	600	1300	600	70	½ "	½ "
GLA 606/M	0.6	2900	1	16.2	2.7	10	600	1300	600	65	½ "	½ "
GLA 626/M	0.6	2900	1	16.2	2.7	10	600	1300	600	70	½ "	½ "
GLA 606/M	0.6	2900	3	6.36	1.06	10	600	1300	600	65	½ "	½ "
GLA 626/M	0.6	2900	3	6.36	1.06	10	600	1300	600	70	½ "	½ "

All dimensions are in mm unless stated

Dimensions for fully packaged units can be supplied upon request

Technical summary

	3750 PULPRESS																		
DESIGN	**1SL**	**2SL**	**1SM**	**2SM**	**1EL**	**2EL**	**1EM**	**2EM**	**1VL**	**2VL**	**1VM**	**2VM**	**2VH**	**2SLT**	**2ELT**	**2VLT**	**2SMT**	**2EMT**	**2VMT**
Baseplate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cabinet	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
Wall Mounted	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Floor Mounted	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Single System	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
Twin/ Dual System (All Duty)														✓	✓	✓	✓	✓	✓
Pump Dis. Iso Valves	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump Suct. Iso Valves	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump Suction Strainer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BS6281 Type "A" Air Gap	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BS1212 pt 3 Ball Valve	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Single Pump	✓		✓		✓		✓		✓		✓								
Duty/Standby Pumps		✓		✓		✓		✓		✓		✓	✓						
Single Phase 220/240V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Three Phase 380/415V																			
Cold Fill 0-3 bar																			
Cold Fill 3-6 bar																			
Cold Fill 0-2.7 bar	✓	✓			✓	✓			✓	✓				✓	✓	✓			
Cold Fill 2.7-5.5 bar			✓	✓			✓	✓			✓	✓					✓	✓	✓
Cold Fill 5.5-8 bar													✓						
FEATURES																			
Packaged Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pressure Switches																			
Microprocessor	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Under Voltage Protection																			
Door Interlocked Isolator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Power On Lamp	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump Test Button	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump Run Lamp	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump Trip Lamp & Alarm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low Water Cut Out	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
High Water Alarm					✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
Low Pressure Alarm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
High Pressure Alarm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Excessive Demand Alarm					✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
Transducer Failure Alarm					✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
Audible Alarm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manual Reset of Alarm					✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
Automatic Reset Option	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
H/O/Auto Switches																			
Alternate Pump Start		✓		✓		✓		✓		✓		✓	✓						
Hours Run Meter(s)					✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
Pump Frequency Alarm					✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
Delay Pump Start	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service Due Indicator					✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
Modbus Connectivity to BMS					✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
BACnet Gateway					o*	o*	o*	o*	o*	o*	o*	o*	o*		o*	o*		o*	o*
LonWorks Gateway					o*	o*	o*	o*	o*	o*	o*	o*	o*		o*	o*		o*	o*
Glycol Auto Mix																			
VOLT FREE CONTACTS																			
Common High/Low Press.									✓	✓	✓	✓	✓			✓			✓
High Pressure									✓	✓	✓	✓	✓			✓			✓
Low Pressure									✓	✓	✓	✓	✓			✓			✓
Low Water									✓	✓	✓	✓	✓			✓			✓
Common High/Low Water									✓	✓	✓	✓	✓			✓			✓
Pump Run									✓	✓	✓	✓	✓			✓			✓
Pump Trip									✓	✓	✓	✓	✓			✓			✓
Pump Freq./Exces.Demand									✓	✓	✓	✓	✓			✓			✓
Power/Fuse Failure									✓	✓	✓	✓	✓			✓			✓
Common Alarm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ – Standard feature o – Optional extra o*– Cannot be used in conjunction with Volt Free Contact Package

Technical summary

	GLA			
DESIGN	**606**	**626**	**606E**	**626E**
Baseplate				
Cabinet	✓	✓	✓	✓
Wall Mounted				
Floor Mounted	✓	✓	✓	✓
Single System	✓	✓	✓	✓
Twin/ Dual System (All Duty)				
Pump Dis. Iso Valves	✓	✓	✓	✓
Pump Suct. Iso Valves	✓	✓	✓	✓
Pump Suction Strainer	✓	✓	✓	✓
BS6281 Type "A" Air Gap	✓	✓	✓	✓
BS1212 pt 3 Ball Valve	N/A	N/A	N/A	N/A
Single Pump	✓		✓	
Duty/Standby Pumps		✓		✓
Single Phase 220/240V	✓	✓	✓	✓
Three Phase 380/415V	✓	✓	✓	✓
Cold Fill 0-3 bar	✓	✓	✓	✓
Cold Fill 3-6 bar	✓	✓	✓	✓
Cold Fill 0-2.7 bar				
Cold Fill 2.7-5.5 bar				
Cold Fill 5.5-8 bar				
FEATURES				
Packaged Controls	✓	✓	✓	✓
Pressure Switches	✓	✓	✓	✓
Microprocessor				
Under Voltage Protection				
Door Interlocked Isolator	✓	✓	✓	✓
Power On Lamp	✓	✓	✓	✓
Pump Test Button				
Pump Run Lamp			✓	✓
Pump Trip Lamp & Alarm			✓	✓
Low Water Cut Out	✓	✓	✓	✓
High Water Alarm	✓	✓	✓	✓
Low Pressure Alarm				
High Pressure Alarm				
Excessive Demand Alarm				
Transducer Failure Alarm				
Audible Alarm				
Manual Reset of Alarm			✓	✓
Automatic Reset Option			✓	✓
H/O/Auto Switches			✓	✓
Alternate Pump Start			✓	✓
Hours Run Meter(s)				
Pump Frequency Alarm				
Delay Pump Start				
Service Due Indicator				
Modbus Connectivity to BMS				
BACnet Gateway				
LonWorks Gateway				
Glycol Auto Mix	✓	✓	✓	✓
VOLT FREE CONTACTS				
Common High/Low Press.	✓	✓	✓	✓
High Pressure			✓	✓
Low Pressure			✓	✓
Low Water	✓	✓	✓	✓
Common High/Low Water			✓	✓
Pump Run			✓	✓
Pump Trip			✓	✓
Pump Freq./Exces.Demand			o	o
Power/Fuse Failure				
Common Alarm				

✓ – Standard feature o – Optional extra
o*– Cannot be used in conjunction with Volt Free Contact Package

3750 Pulpress specification

Pumps

3750 Pulpress Pressurisation units available as single and twin pump versions. All pumps are horizontal peripheral type with composite body and impeller and are fitted with self-adjusting mechanical seals.

Enclosures

All 3750 Pulpress units are attractively encased in a unique rotomoulded plastic enclosure. This enclosure is made of recyclable material giving it a lightweight environmentally-friendly design.

Break Tank

21 litre active capacity and manufactured from polyethylene complete with ball valve to BS1212 part 2 with type 'AB' air gap to comply with BS EN 13076:2003, WRAS (approval number: 0904058) and model water byelaws.

Valves

All pumps can be isolated for servicing. A non-return valve is fitted to each pump discharge, with an additional valve being fitted prior to the system connection.

Expansion Vessels

Fabricated steel construction, complying with BS13831:2007 and listed by the WRAS, either with a fitted or removable diaphragm. All vessels are suitable for maximum working pressures of up to 10 bar and are rated at 6 bar when BS13831:2007 applies. Max water working temperature 100°C (short period exposure).

Max continuous water temperature 70°C. Further information available upon request.

Minimum information required for sizing expansion vessels to BS7074

1. Static head of system above pressurisation unit.
2. Flow, return and ambient temperatures.
3. Total water content of system.
4. Percentage of antifreeze to system volume.
5. Maximum allowable pressure.

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