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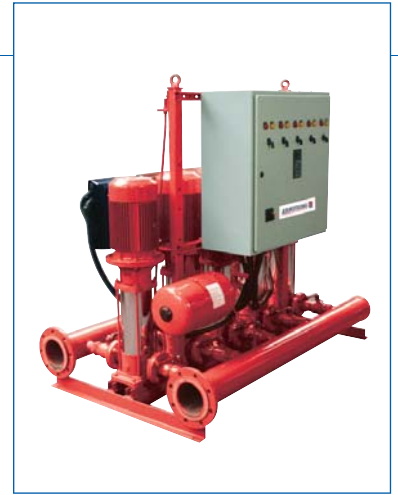


Multipump Variable Speed Booster Sets

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Variable speed Multipump booster sets

The 6850 Hydropak IVS range of packaged water booster sets incorporates pump integrated frequency converters giving many advantages over fixed speed packages.



► Applications

6850 Hydropak IVS sets can offer many advantages over equivalent fixed speed systems in water supply applications such as residential blocks, schools, hotels and hospitals. Benefits include:

- Accurate control of pressure
- Reduced life cycle costs
- Lower maintenance costs
- System fill mode in the event of power loss
- Reduced hydraulic shock—soft start pumps
- Compact package. Reduced noise levels

► Operating Philosophy

Pumps are staged in and out operating in parallel to maintain a constant system pressure with varying flow. For example, if a single pump reaches maximum speed (parameter adjustable) and demand continues to increase, a second pump will be staged on and the two pumps will run at an equal speed to maintain constant pressure.

Should demand be reducing, pumps are staged out a pre-determined speed (parameter adjustable) until only one pump is running. This pump will continue to regulate the pressure until such time where there is no demand and the set will enter 'sleep mode' where no pumps are running. On resumption of demand the designated duty pump will initiate and the staging sequence resumes.

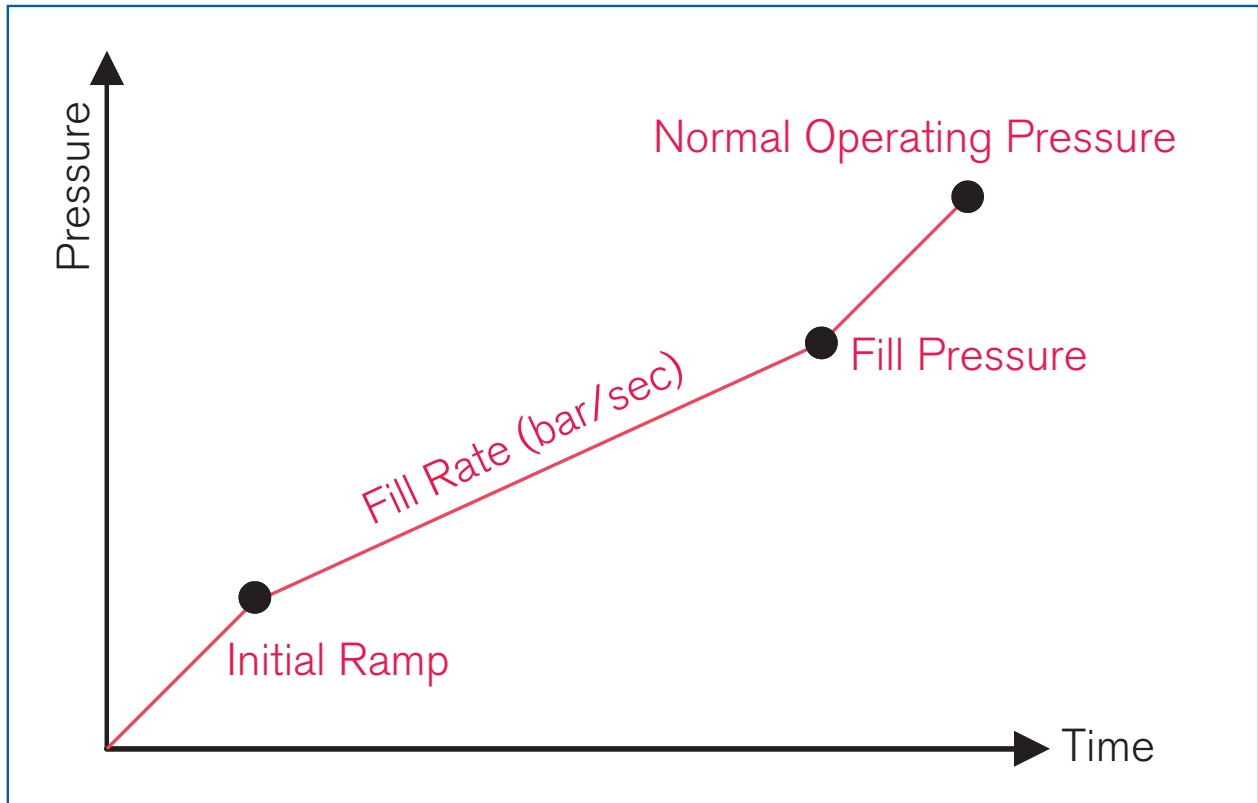
► Product Features

- Available as 2, 3, 4 or 5 pump set with equal size pumps in power ratings from 0.55 - 7.5kW.
- All wetted components are WRAS approved.
- Adjustable stage on and off frequencies for support pumps to allow 'best efficiency' operation.
- System fill mode to reduce hydraulic shock in the event of a power failure (system drained).
- System friction loss compensation (increasing head with increasing flow).
- Each set tested and configured hydraulically, electrically and functionally.
- EMC compliant.
- BMS compatibility as standard.
- High specification control panel components.
- LCD display for pump control system monitoring.
- Pump alternation based on an hours run basis.

Multistage pumps

► System Fill Mode

System fill mode reduces the occurrence of water hammer associated with the rapid exhaustion of air from piping systems. An example of when this can occur is in the event of mains power loss to a building. In this situation it is likely that building occupants will attempt to draw water from the system which will lead to air pockets in water supply piping. When power resumes, traditional booster sets (fixed or variable speed) will call pumps in as fast as possible to achieve design head. This leads to pipe hammer and in the worst case can lead to pipe fittings failing and subsequent building water damage.



The 6850 Hydropak IVS system fill mode operates as follows:

- When the set is powered up a single pump will ramp up in speed at a rate determined by the 'initial ramp' setting (preventing low speed pump damage).
- The pump will increase in speed at the 'fill rate' until the 'fill pressure' is achieved.
- Normal operation then resumes to the system setpoint.

► Ancillary Equipment

Flexible connections, anti-vibration mounts and low level cut-out switches can also be supplied.

► Curves and Dimension Data

Please contact your nearest Armstrong sales office for pump curves and general arrangement drawings

► Specifications

6850 Hydropak IVS booster sets incorporate a fabricated heavy gauge steel base-frame and have the following component specifications:

► Pumps

Stainless steel impellers, shaft and stage pieces.
Carbon versus ceramic mechanical seal.
SV2, SV4, SV8, SV16 sets - Stainless steel top and bottom covers.
SV33, SV46, SV66 sets - Epoxy coated cast iron top and bottom covers

► Headers

Copper pipework using tube EN1057 table X which supersedes BS2871.
Stainless steel headers for pipe diameters above 150mm.

► Valves

SV2, SV4, SV8, SV16 sets - bronze body ball isolating valve - valves complying with EN 29000 and bronze body poppet type non-return valves.
SV33, SV46, SV66 sets - cast iron body epoxy coated butterfly valve complying with BS 4504-PN16 and cast iron epoxy coated poppet type non-return valves.

► Variable Speed Motors

Energy efficient TEFV, IP55 to IEC standards. RFI filters for EMC compliance.
DC Link chokes to minimise power harmonics. Adjustable switching frequency for low noise operation.
Self-protecting with automatic fault reset function.

► Control Panel

IP54 steel enclosure with door interlocked isolator. All cables crimped and numbered.
All components labelled. Hand/off/auto switch (each pump).
Pump run and trip lamps (each pump). Panel mounted keypad with LCD display.
Low water level cut-out. Hours run indication (via LCD display).
Remote inhibit function. Optional dual break tank selection.
All components of high quality from a restricted approved suppliers list.

► BMS Compatibility

Volt free contacts as standard are:
Each pump running. Each pump fault.
Break tank low water. Low system pressure.
Power failed. Common alarm.

► Expansion Vessel

20 or 60 litre, WRAS approved. The vessel is used to absorb pressure surges as pumps start and stop, although these will be minimal due to the soft start of each pump. The vessel also ensures a small supply of water meeting short-term demand without starting pumps. A comprehensive range of larger vessels can be supplied to increase the rest time between pumping cycles.

► Paint

Each set is completely coated with a heavy duty paint finish to Armstrong standard.

Our policy is one of continuous improvement and we reserve the right to alter our dimensions and specifications without notice

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