

**ARMSTRONG**



## Multipump Variable Speed Booster Sets

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# Variable speed Multipump booster sets



## Reduced mains pressure, taller buildings, condensed living; just how can the demand for adequate water pressure be met?

The need for booster sets has been on the increase for a number of years. The reasons for this include:

- ▶ Water companies in many regions have gradually reduced the mains pressure in order to reduce supply system leaks
- ▶ Moves toward reduced urban sprawl have increased the need for taller residential buildings
- ▶ Upper floors of high rise, multi-use buildings are more commonly being used for residential space

Traditionally, build designers have used fixed-speed booster sets for these applications. However, installations of variable-speed booster sets continue to rise. This is mainly due to the many advantages variable-speed systems offer, including:

- ▶ Reduced requirement for expensive valves to maintain a fixed pressure
- ▶ Superior pressure control compared with fixed-speed pump staging
- ▶ Reduced wear on set and system components due to the soft start of variable-speed pumps
- ▶ Improved reliability and maintainability
- ▶ Noise reduction
- ▶ Increased occupancy comfort
- ▶ Improved energy efficiency

The 6800 IVS Series range of packaged water booster sets incorporates pump integrated frequency converters providing many advantages over fixed-speed and single inverter 'hybrid' packages. With each pump incorporating its own integrated frequency converter, pumps will adjust operating speed to meet system requirements.

Applications for the 6800 IVS Series include:

- ▶ Residential and commercial buildings
- ▶ Schools
- ▶ Hotels
- ▶ Hospitals



# Minimise Hydraulic Shock...

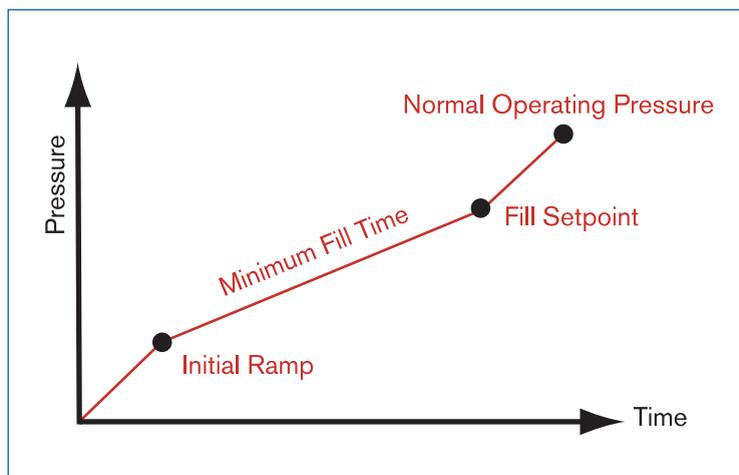
## ► Accurate pressure control means improved occupant comfort.

Traditionally, the job of a booster set is to increase system pressure to the target level. This is achieved through a combination of parallel operation and staging of pumps to maintain a constant system pressure with varying flow. The operating philosophy is:

- If a single pump reaches maximum speed and demand continues to increase, a second pump is staged on and the two pumps run at an equal speed to maintain constant pressure.
- Pumps are staged out at a pre-determined speed until only one pump is running.
- As demand decreases, the single pump will continue to regulate the pressure until there is no demand. When this occurs the set will enter 'sleep mode', in which no pumps operate.
- On resumption of demand the designated duty pump will start and the staging sequence resumes.

## ► Soft Fill makes the 6800 IVS Series a leader in the market.

- Soft Fill is a fully automatic process, which controls the pump and increases operating speed gradually as the system reaches a fill setpoint.
- Soft Fill reduces the occurrence of water hammer associated with the rapid exhaustion of air from piping systems. An example of when this might occur is following a mains power failure and resumption where attempted water draw off has led to air entering the system.
- A minimum fill time can be adjusted to suit site conditions. This setting determines the minimum amount of time the unit will take to reach the fill setpoint.
- Pressure is increased at a controlled rate, so that air trapped in the system is released gradually.
- Water is introduced into the pipework under controlled conditions, which prevents damage to fittings.
- After initial start-up, when the system is in normal use, the booster set reverts back to its usual working conditions, reaching target pressures as quickly as possible.



## ► Additional 6800 IVS Series benefits include:

- Reduced capital cost - in-built intelligence reduces the need for additional equipment
- Installation savings - units are pre-assembled and factory tested to ensure quick, trouble-free installation
- Compact and space-saving design - product can be disassembled to fit through a 3 ft doorway
- Accurate control of system pressure leads to greater occupant comfort
- Lower maintenance costs - varying pump speed reduces wear on pump and system components
- Best efficiency operation - efficient staging and variable-speed operation leads to substantial energy savings

## ▶ 6800 IVS Series Range

The 6800 IVS Series Booster sets are available with 2, 3, 4 or 5 pumps. The base-frame, headers and stanchion are all made from Stainless Steel. Configurations are available to provide flows from 0.6 L/s, at 21 bar of pressure up to 50 L/s at 14.5 bar of pressure. Some configurations can maintain pressures of 25 bar.



## ▶ Product Specifications

The 6800 IVS Series Booster sets are packaged, programmed and tested prior to dispatch. All units are tested for pressure and full functionality in all programme sequences. All configurations include the following components and features:

- ▶ Ball-type isolating valves
- ▶ Poppet-type non-return valves
- ▶ 8 L expansion vessel
- ▶ Stainless steel impellers, shaft, stage pieces, top and bottom covers
- ▶ All wetted components are WRAS approved
- ▶ Automatic system Soft Fill mode, with the option of manual fill
- ▶ Automatic pump duty changeover:
  - Following a 'sleep' situation
  - Following any fault
  - On a time adjusted basis
  - Sequence - 1-2-3-4, 2-3-4-1, 3-4-1-2, 4-1-2-3, 1-2-3-4
- ▶ Automatic omission of failed pump from sequence
- ▶ Automatic omission of pumps in the off position
- ▶ Automatic reset of pump from a 'minor' alarm situation
- ▶ Pump running contact
- ▶ Pump fault output
- ▶ IP54 Control Panel Enclosure
- ▶ Door interlocked isolator
- ▶ LCD display with 4 x 20 text display of:
  - Setup menus
  - System pressure
  - Pump operating status
  - System mode (i.e. fill mode, sleep mode, run mode)
  - Pump speed, current, power and alarm description
  - Hours run
  - System alarms
- ▶ Low water level cut-out
- ▶ Remote inhibit function
- ▶ Dual break tank selection
- ▶ Lockable Hand / off / auto functionality
- ▶ Password protected menu screens
- ▶ Standby pump selection
- ▶ Common alarm volt-free contact
- ▶ Transducer failure protection

Other product specifications available on request or from [www.armstrongpumps.com](http://www.armstrongpumps.com)

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

Armstrong Integrated Limited  
Wenlock Way  
Manchester  
United Kingdom, M12 5JL  
T: +44 (0) 8444 145 145  
F: +44 (0) 8444 145 146

S. A. Armstrong Limited  
23 Bertrand Avenue  
Toronto, Ontario  
Canada, M1L 2P3  
T: 001 416 755 2291  
F: 001 416 759 9101

