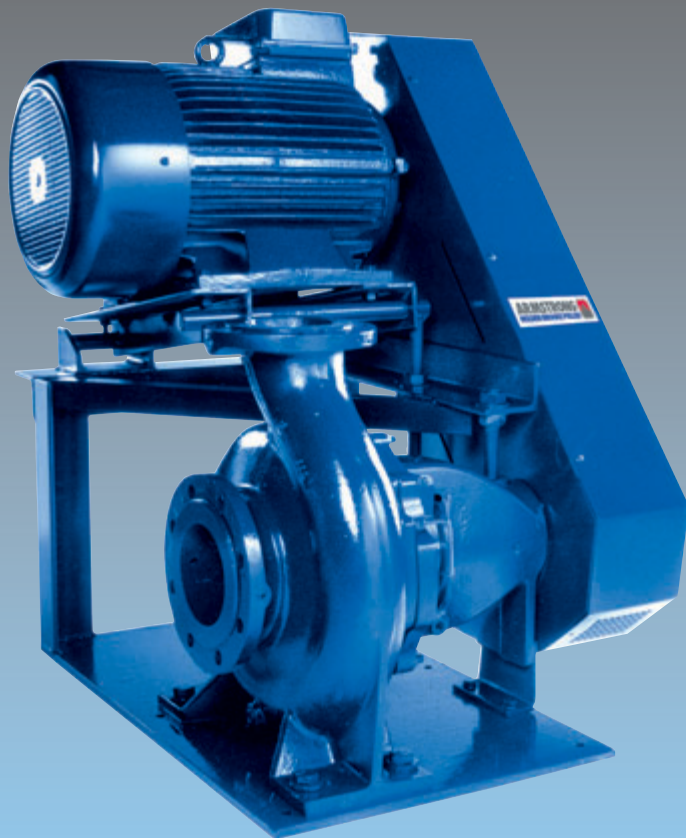


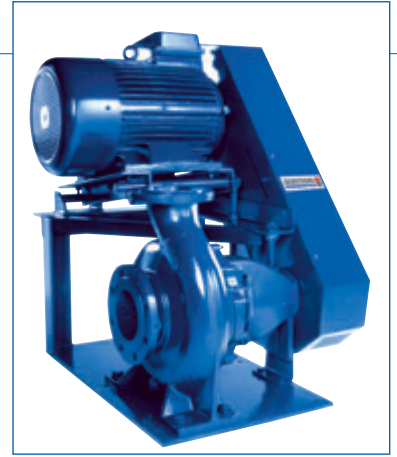
ARMSTRONG
HOLDEN BROOKE PULLEN



BELT DRIVEN END SUCTION Pumps

FILE NO:	3-2
DATE:	December 2004
SUPERSEDES:	HVAC 4-6
DATE:	08 - 2003

Belt driven Single & twin End suction pumps



These single stage overhead electric motor driven centrifugal pumps are designed for continuous service handling hot or cold non-abrasive liquids in building services and general pumping applications.

► Long Life and Reliability

Back vanes are an integral part of the shrouded impeller with excellent hydraulic balance to prolong bearing life. Where appropriate a double volute is cast into the pump body to reduce shaft loading and further enhance longevity.

► Flexible Performance

Flexible belt drive allows the pump to be selected for the application needs. If duty conditions change, the pump speed and performance can be adjusted by selection of the appropriate pulley ratio. The adjustable performance option is also helpful for systems where the duty requirement may be subject to change due to unforeseen or unpredictable requirements.

► Robust Body

Robust pump body having cast in feet with North vertically upwards, discharge branch. This configuration is less susceptible to damage from mechanical stresses if discharge pipework loads are carried by the pump.

► Easy Maintenance

Back Pull Out design for easy maintenance and refurbishment of major parts. The pipework flange connections do not need to be broken nor the motor disturbed for access to the bearing pedestal shaft, seal or impeller.

► Interchangeable

Standardised dimensions and seal cavity (ISO 2858, DIN 24256, BS 5257, DIN 24960) mean the pump can be retrofitted into existing installations without major system changes. A range of standardised shaft sealing options extends the pump capability to high temperature applications.

► Noise Reduction

Inertia bases, flexible connectors and anti vibration mounts can be incorporated where noise transmission has to be minimised.

► Speed

By careful choice of drive pulley ratio, the Starflex performance curve can be selected according to the system requirements. When specifying a pump speed, Armstrong Holden Brooke Pullen will offer the optimum selection, taking into consideration such factors as cost, efficiency and clients preferences. Where future performance needs are predictable, these can be accommodated in the selection.

Condenser & chilled water circulation

► Construction

Pump Body:	Cast Iron. North discharge, flanges BS 4504 - 16 bar rating.
Bearing Pedestal:	Cast Iron.
Impeller:	Gunmetal or Cast Iron.
Shaft:	Stainless Steel.
Bearings:	Grease Lubricated Ball.
Motor:	TEFV, Foot Mounted.
Seal:	DIN 24960 Mechanical Seal, silicon carbide seat versus a carbon rotating face, for longer life, or packed gland stuffing box.
Base:	Robust Fabricated Steel.

► Materials of Construction

Cast Iron:	BS1452 GR 260.
Gunmetal:	BS1400 LG 2C.
Stainless Steel:	BS970 GR 431 S29.

► Starfix Twin Specifications

Duty/standby - belt drive pump with non return flap valve to allow the use of automatic standby operation.

Casings and bearing pedestals - constructed from BS1452 grade 260 cast iron for long life.

Impellers - one piece precision cast in gunmetal BS1400 LG2C or cast iron BS1452 grade 260 statically balanced.

Shaft - manufactured in one piece of stainless steel BS970 grade 431 S29, sealed with a self adjusting silicon carbide/carbon mechanical seal for durability.

Belt drive through - amply rated belts and pulleys for long maintenance free intervals.

► Operating Capabilities - Starflex

Maximum Pressure:	16 bar Pump Body.
Generated Head:	700kpa at 1450rpm
Flow Rate:	Up to 300l/s.
Maximum Temperature:	145°C
Up to 175 C with gland cooling and soft gland packing (at suitable pressure and water quality)	

► Operating Capabilities - Starfix Twin

Maximum Pressure:	10 bar
Maximum Generated Head:	250 kPa
Maximum Flow Rate:	30 l/s
Maximum Temperature:	125°C
(at suitable pressure and water quality)	

Typical Specification

Provide Armstrong Holden Brooke Pullen Starflex 4039 Series belt driven pump to Armstrong Holden Brooke Pullen Series typical specification with motor as per the following:

With bareshaft pump dimensions and performance to BS5257 and ISO2858, Starflex 4039 materials of construction to be:

Body castings:	High grade close-grained cast iron to BS1452 grade 260.
Impeller:	Corrosion free gunmetal bronze to BS1400 LG2C
Shaft:	Corrosion free stainless steel to BS970 grade 431S29
Mechanical seal:	Self adjusting rubber bellows type with silicon carbide seat, antimony bonded carbon rotating face, stainless steel metal parts and robust EPDM elastomer.
Bearings:	Deep groove ball type, grease lubricated, sealed for life.
Belt type:	Vee-belt

Pump impeller to have back vanes to maintain hydraulic balance to ensure long bearing life.

Mechanical seal to have visible external recirculation line to ensure adequate flushing and cooling.

Flanges to be provided with plugged tappings, suitable for pressure gauge connection.

Flanges to BS4504 PN10 or PN16.

Belt tension to be maintained by adjusting bolt that moves the motor shaft relative to the pump shaft. Slipper tensioner type not permitted. Belts to be visible through the drive guard.

Belt driven pump shall be capable of increase or decrease in head by 20% by change of belt and pulleys only.

Pump to have back pullout facility that enables the pump internals to be inspected without disturbing the pipework or the motor.

The driving motor shall be of squirrel cage induction type with IP55 enclosure and Class F insulation with Class B temperature rise, wound for a 3/50/400 electrical supply. Efficiency category to be Eff2. Alternatively Eff1 high efficiency motor qualifying for Enhanced Capital Allowances scheme.

The product shall be CE marked showing compliance with both the EMC Directive 89/336/EEC and the Low Voltage Directive 72/23/EEC.

Environmental Ratings: Temperature: 0 - 40°C Max Relative Humidity: 93% +2%, -3%

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

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