

## 50 years of World Pumps

# A brief history of pumps

Ten years ago, World Pumps put together a brief history of the pump industry telling the story of pump development since the Egyptians invented the 'shadoof' in 200BC. We stopped then at 1999, but here we bring the story right up to date with some of the main industry events of recent times.

Fifty years ago, Trade & Technical Press launched a new magazine to report on technical developments in pumps. The original title of Pumping was short-lived, being soon supplanted by the pan-European Pumps, Pompes, Pumpen in 1965 as the magazine linked up with the fledgling Europump association. Over the next seventeen years, the pump industry became increasingly international and in 1982, the publisher decided to mark this trend by re-launching the magazine as World Pumps.

The thirtieth anniversary year saw Trade & Technical Press acquired by Elsevier Science Ltd who incorporated the magazine into its Elsevier Advanced Technology Division. Since then, a number of editorial changes have brought with them new approaches as the industry matures. There have been reviews of software and web pages, eventually eclipsed by sheer numbers. An annual International Buyers' Guide has been published since 1997, and is now supplemented by an on-line version. Since 2003 World Pumps has worked with BPMA on the annual prestigious Pump Industry Awards. The magazine now features regular contributions from the Hydraulic Institute, underlining its international credentials.

Man has been using pumps of some type for 4000 years, which makes 50



years a very short time in the history of pumping. Indeed, looking back at the most significant developments in technology, the last fifty years seem relatively insignificant. By 1959, all the major pump designs had been introduced and mostly developed into commercial products. So what has World Pumps been writing about for the past 50 years?

### Driving trends

One trend has been the increasing importance of niche positive displacement pumps, particularly rotary types. Peristaltic, progressing cavity and rotary lobe pumps have all risen in profile as their capabilities have been introduced to new markets by improved communications. Increasing competition has meant that users have been more inclined to experiment in the search for the ideal pump for difficult duties.

The trends that have affected all of us have also had their impact on the pump market. Increased environmental awareness gave a real boost to pumps without shaft seals. Magnetic drive and canned motor units have thrived and even produced a hybrid combining the two technologies. Pump shaft sealing has also changed dramatically. Asbestos in packing is outlawed and today the vast majority of new pumps are supplied with mechanical seals, often in factory-assembled cartridge format to avoid the risk of face damage during handling.

Materials have also developed. Sea-water pumps have seen gunmetal and aluminium bronze replaced by highly alloyed super-austenitic and super-duplex stainless steels. New non-metals have made possible tiny pumps for human implant. Ceramics and tungsten/silicon carbide have vastly reduced wear rates in pumps of all sizes. Even large sub-sea variable speed super-synchronous drive motors for pumps are now possible.

### Overtaken by computers

Electronics and computers have overtaken all our lives and inevitably have entered the physical world of pumps in the form of variable speed drives (VSD's), SCADA systems and condition monitoring equipment. Integral VSDs on in-line pumping units

now dominate the building services market. Pump selection software has speeded up the process of choosing a pump, as well as opening opportunities in marketing. For the designer, CAD and CFD have reached new heights. They can now interact but they still have some way to go before they fully replace personal expertise.

Life cycle costing has become a part of everyday life and has shown that energy costs usually eclipse all other lifetime costs. Vast savings are



frequently realised by system improvement but appropriate legislation is practically impossible to formulate. Although pump efficiency improvements give relatively small returns for large outlays, legislation for raising efficiency now exists in Korea and China. The European Commission, as part of its Energy Using Products Directive, has targeted the raising of efficiencies of water pumps. Europump has been instrumental in assisting the EC in this task and has proposed a method for eliminating bad performers.

We are all aware that in recent years, discussions about the pump industry have been dominated by talk of mergers, takeovers and disposals. Indeed, as we consider the major pump makers of 2009, it is hard to name one which has not changed markedly since 1959.

### Comings and goings

ITT, IDP, Sterling Fluid Systems, Grundfos, Wilo and ABS have changed almost beyond recognition. Established independent makers like Harland, Flygt, Worthington and now Weir Pumps have disappeared, whilst newer names like Textron, Constellation Capital, IDEX, Pentair and Flowserve have arrived on the scene, continuing the trend for the biggest companies to get bigger.

Other interesting changes include diversification. For example, after more than 50 years of providing submersible motors to pump makers, Franklin Electric has 'pulled the plug' and now buys pump companies to produce its own units.

Mind you, it is also interesting to note from the chronology of the pump industry listed below, that even in the early years of this magazine mergers and acquisitions were not unknown and ever since there has been a continuous environment of change.

### Global marketplace

Probably the biggest single change in this industry has been the transition from a local to a global marketplace. Fifty years ago we had only national trade associations but today the significant impetus in inter-company relations is at intercontinental level. The Europump Association has grown massively in stature and effectiveness in its 49 years, and now works in close partnership with the Hydraulic Institute in the US. This partnership reflects ever closer cooperation between pump manufacturers' associations, a development that mirrors this magazine's evolution from national through European to global coverage.

# A brief history of the pump industry

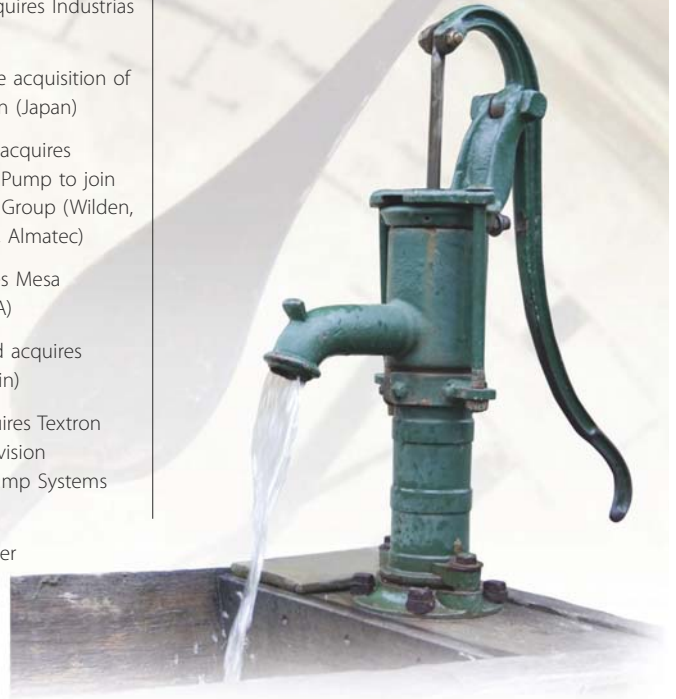
- 2000 BC** Egyptians invent the shadoof
- 200 BC** Ctesibius invents the reciprocating pump; Archimedean screw pump described (but not invented) by Archimedes
- 1580** Sliding vane pump invented by Ramelli; Serviere invents the gear pump
- 1650** Otto van Guericke invents his piston vacuum pump
- 1674** Sir Samuel Morland patents the packed plunger pump
- 1738** Ural hydraulic machinery plant established
- 1790** Plenty Ltd established  
Thomas Simpson establishes his pump business in London  
Hayward Tyler established
- 1830** Screw pump invented by Revillion
- 1834** Sulzer Brothers founded
- 1840** Henry R Worthington invents the first direct-acting steam pump
- 1848** Goulds Pumps founded
- 1851** John Gwynne patents his centrifugal pump improvements
- 1853** Bornemann Pumpen founded
- 1856** Gilbert Gilkes & Gordon founded
- 1857** Roper Pump Company founded  
Jacob Edson invents the diaphragm pump and founds the Edson Corporation
- 1860** David Brown commences business as pattern maker  
Allweiler founded  
A.S. Cameron invents the first reciprocating steam pump
- 1862** Lawrence Pumps established; Philipp Hilge founded
- 1866** Lederle founded  
Sigma Lutin founded; Stork Pumpen founded  
Scanpump founded
- 1871** KSB established; Southern Cross established in Australia
- George and James Weir set up the partnership that forms the Weir Group
- 1872** Weise & Monski, Ochsner, Byron Jackson and Wilo founded
- 1873** G & J Weir moves to Glasgow
- 1875** Hodgkin and Neuhaus, forerunner of SPP, founded
- 1877** Ritz Pumpenfabrik established
- 1878** Steimel founded; Hodgkin and Neuhaus becomes the Pulsometer Engineering Company Ltd
- 1881** Halberg Maschinenbau founded
- 1883** Holden & Brooke founded  
A W Chesterton founded
- 1888** Kirloskar Brothers Ltd founded
- 1890** Salmson starts making pumps in Paris; Osna Pumpen established
- 1893** Uraca Pumpenfabrik founded
- 1894** Sero Pumpenfabrik founded  
Peroni founded
- 1896** KSB opens UK subsidiary; Dia Pumpen founded
- 1897** Wirth founded  
Worthington Pump Company and Thomas Simpson amalgamate to form Worthington Simpson Ltd
- 1901** Flygt's forerunner Stenberg founded
- 1903** Rateau founded
- 1905** Leistriz Company established
- 1906** Stuart Turner Ltd founded
- 1907** Mitsubishi Heavy Industries produces its first pump
- 1909** Tristam Pumpen and Pumpen fabrik Ernst Vogel founded  
Ingersoll-Rand enters the pump business by acquiring the Cameron Steam Pumps Works
- 1910** Gilbarco produces its first gasoline pump  
Dickow Pumpen and Hitachi founded
- 1911** Jens Nielsen builds the first Viking internal gear pump, founding the Viking Pump Company
- 1912** Ebara Corporation founded; Duriron (Durco Pumps) founded
- 1916** Hazleton Pumps founded as Barrett Haentjens and Co.  
Worthington Pump & Machinery Corporation acquires Worthington Simpson Ltd
- 1917** John Crane founded; Hydraulic Institute established  
Louis Bergeron invented the concrete volute pump and founded Bergeron S.A.
- 1918** Scanpump and CCM Sulzer founded
- 1919** Torishima Pump Mfg Co and Kawamoto Pump Mfg established
- 1920** Bombas Itur, Wernert Pumpen and SIHI established
- 1921** LaBour founded
- 1922** Midland Dairy Machines founded
- 1923** Peerless founded; Pacific Pumps founded
- 1924** Jung Pumpen established; Leistriz starts making screw pumps  
Rheinhuette starts pump production
- 1926** Arai Pump Mfg. Co. founded
- 1927** Industrial Filter and Pump Mfg Co founded  
Edur Pumpenfabrik founded
- 1928** Girdlestone Pumps founded
- 1929** Heishin Works, and Houttuin founded  
Pleuger pioneers the submersible turbine pump motor  
Stenberg and Flygt commence their cooperation
- 1930** René Moineau receives a doctorate for his thesis which will lead to the invention of the progressing cavity pump  
Ensival starts selling centrifugal pumps  
Reda Pump Company founded
- 1931** Imo established by Ingeström and Montelius

- VNII Gidromash research and design organization founded in Moscow
- 1932** Sarlin Pumps founded; Bran+Luebbe founded
- 1933** Bush pump invented; Gormann-Rupp established
- 1936** Robbins & Myers acquires North American license for the Moineau progressing cavity pump
- Mono Pumps Ltd formed to manufacture and distribute Moineau's pump design in the UK
- 1937** Sigmund Pumps Ltd (GB) established
- 1938** Ebsray and Warman International founded
- 1940** Grindex founded; Dresser acquires Pacific Pumps
- 1941** British Pump Manufacturers Association founded
- Smedegaard Pumps founded
- 1944** Franklin Electric founded
- 1945** Grundfos Pumps, Caprari and Flexibox founded
- 1946** Cornell Pumps, Klaus Union, Totton Pumps founded
- 1947** HMD Seal/Less Pumps established; Hyundai founded
- 1948** Abel Pumps launched; Mast Pumpen founded
- Stenberg Flygt AB designs the first submersible drainage pump; Varisco starts pump production
- 1949** HMD supplies its first production magnet-drive pump
- 1950** Batescrew established; Delasco founded
- 1951** Tsurumi and Netzsch Mohnopumpen founded
- 1952** Lewa and Rovatti founded
- 1953** Nikkiso established
- 1954** Orlita and Sta-Rite founded
- Bell & Gossett opens its Little Red Schoolhouse training facility
- 1955** Wilden and DMW Corporation established
- Borg-Warner acquires Byron Jackson
- 1956** Flygt introduces the submersible sewage pump
- Saer Elettropompe founded
- 1957** Richter Chemie-Technik founded
- Centrilift founded
- 1958** Heishin Works becomes Heishin Pump Works Co Ltd
- SSP Pumps founded
- 1959** World Pumps is launched as Pumping
- ABS and Calpeda founded
- 1960** David Brown Pumps division formed
- Europump established
- 1961** Ingersoll-Rand acquires the Aldrich Pump Company
- Pulsometer Engineering joins the Booker McConnell Group, which had already acquired Sigmund Pumps
- 1962** Acromet commences operations
- 1964** First edition of the Pumping Manual published
- 1965** Nigo's Pumps incorporated in India; Warren Rupp founded
- Sulzer acquires majority interest in Weise & Monski
- Pumping becomes Pumps, Pompes, Pumpen
- 1966** Crisafulli Pump Company founded; ITT acquires Jabsco
- 1967** Scienco founded
- 1968** Johnson Pump International founded
- ITT Corporation acquires Flygt
- 1969** Weir acquires Harland Engineering; Worthington acquires Worthington-Simpson
- 1970** Alma Pompe founded; Weir buys Drysdale; Ingersoll-Rand buys Sigmund Pumps Ltd (GB) in Gateshead, UK
- 1971** SIHI takes over Halberg; Gévelot group acquires Delasco
- Turbosan founded
- Seepex Seeberger founded
- 1973** Crest Pumps Ltd founded
- 1976** Worthington acquires Sier-Bath Pump Division from Gilbarco
- 1977** Ingersoll-Rand buys Western Land Roller Irrigation Pumps
- Sterling Fluid Systems (TBG) buys Peerless Pump
- 1978** Thompsons acquires the pump manufacturing operations of Kelly & Lewis to form Thompsons, Kelly & Lewis
- 1979** Totton Pumps bought by Wolseley plc
- SPP acquires Godiva Fire Pumps
- 1981** Red Jacket and Hydromatic merge to form Marley Pump
- Sterling Fluid Systems takes a half share in SIHI
- 1982** Pumps, Pompes, Pumpen is relaunched as World Pumps Magazine
- Biwater acquires Wallwin Pumps
- SPP is subject to a management buy-out
- 1984** First Texas A&M Pump Users Symposium
- SIHI buys the canned motor programme of Bran+Luebbe
- 1985** Dresser Industries acquires Worthington Pumps
- KSB acquires Pompes Guinard; Scanpump acquires Pumpex
- SIHI buys the pump programme of MAN
- Pentair acquires FE Myers; Goulds Pumps acquires Lowara
- SPP acquires Henry Sykes plc
- 1987** Bedford Pumps launched; BW/IP formed by management buy-out of Borg-Warner's Industrial Products subsidiary
- Weir buys Mather and Platt Machinery; SIHI France buys Schabaver; Dresser acquires Pleuger Pumps
- 1988** KSB acquires a majority stake in Georgia Iron Works
- Scanpump acquires Pompes Lefi; Idex Corporation founded
- Weir buys the large pumps business of WH Allen & Gwynnes from NEI; BW/IP acquires United Centrifugal Pumps
- Braithwaite acquires SPP and sells off Godiva Fire Pumps

- 1989** Elsevier acquires World Pumps; Scanpump acquires ABS; Pearce Pump Supply founded  
TBG acquires SPP Ltd as part of Sterling Fluid Systems  
Dresser Industries acquires Mono Pumps Ltd; Ingersoll-Rand acquires Scienco Ltd  
Watson-Marlow bought by Spirax-Sarco
- 1991** Idex acquires Corken; Baker Hughes acquires Geho
- 1992** Ingersoll-Rand and Dresser Industries merge their pump businesses to form Ingersoll Dresser Pumps (IDP)  
Warman acquires Girdlestone Pumps  
Idex acquires Pulsafeeder and Johnson Pump (UK) Ltd  
Weir buys Floway; BW/IP buys ACEC  
Ebara establishes state-of-the-art manufacturing plant in Italy
- 1993** United Dominion acquires Marley Pump  
Vogel acquires Ochsner  
Sterling Fluid Systems acquires LaBour
- 1994** Weir acquires EnviroTech Pumps systems  
Warman acquires Barrett Haentjens  
Idex acquires Hale Products; Goulds acquires Vogel  
ITT buys Richter Chemie-Technik  
Sundstrand acquires HMD Seal/less Pumps
- 1995** Idex acquires Micropump; BW/IP acquires the Wilson-Snyder centrifugal pump business from National Oilwell  
Durametallic acquires Pacseal and then is bought by Duriron
- 1996** Hayward Tyler sold by Sterling Fluid Systems, which buys the remaining half share in SIHL; Grundfos acquires Interdab  
Pump Industry Analyst launched  
BW/IP acquires Stork Pumps' engineered pumps business
- Johnson Pumps International acquires the modular pumps business  
Durco and BW/IP merge to form Flowserve Corp.  
ITT Industries acquires Goulds  
Idex acquires Blagdon Pumps  
Textron acquires Maag Pump Systems  
Spirax-Sarco acquires Bredel  
Pentair acquires General Signal's Pump Group  
Constellation Capital acquires Imo  
David Brown acquires Union Pump Company  
Gilbert Gilkes & Gordon buys Wallwin Pumps from Biwater  
Textron buys David Brown Union Pumps  
Constellation Capital buys Allweiler; Glynwed acquires Friatec; Sundstrand acquires Ansimag and Masco; Weir buys Schabaver
- 1999** Hayward Tyler acquires APV Industrial Pumps  
Ebara acquires Cryostar cryogenic pumps  
Howard Anderson buys Pullen Pumps  
Sterling Fluid Systems acquires QVF Engineering (Germany)  
United Technologies Corp acquires Sundstrand  
Textron buys KSB Annecy (France)  
Weir Group acquires Warman International (including Girdlestone Pumps)  
United Dominion Industries acquires Bran+Luebbe; Ensvil merges with Moret
- 2000** Flowserve acquires IDP  
ABS acquires CH&E Pumps (USA)  
Cat Pumps (UK) buys Ram Pumps  
Grundfos acquires Myson and Sarlin Pumps  
Sulzer acquires Ahlstrom Pumps  
Watson-Marlow Bredel acquires Alitea (Sweden)  
Roper acquires Abel; Blackmer buys Chesterton's System One pumps
- Sulzer (temporarily) decides to leave the pump business; Sundyne acquires Caster (Italy)
- 2001** SPX acquires United Dominion Industries  
Godwin Pumps of America acquires Godwin Pumps (UK)  
Lightnin (of SPX) acquires Plenty Group  
Metso acquires Svedala; Idex acquires Versa-Matic
- 2002** Gorman-Rupp acquires American Machine and Tool  
Grundfos takes controlling interest in Chung Suk (Korea)  
ITT acquires Svedala Robot (Holland)  
Idex acquires Wrightech (USA)
- 2003** National Oilwell acquires Mono and Corlac (Canada)  
Wilo acquires EMU  
Weir Engineering Services acquires Allen Gwynnes pump business  
Kirloskar acquires SPP Pumps; KSB acquires controlling share in Bombas Itur (Spain)
- 2004** Howden pumps merge with Orbit in South Africa; Flowserve acquire Thompsons, Kelly & Lewis; Armstrong Pumps buy Holden Brooke Pullen, Baric and RMI  
Grundfos take control of Philipp Hilge  
Dover Resources acquire Almatec
- 2005** Grundfos takes over Tesla (Italian submersible motor maker)  
National Oilwell merges with Varco International  
Interpump acquires Hammelmann  
Weir acquires Pompe Gabbioneta (Italy)  
Wilo acquires majority holding in Mather & Platt Pumps and Fire Systems (India)  
Grundfos acquires Brisan Turbo (South Africa)
- 2006** SPX acquires Johnson Pump  
Franklin Electric acquires Little Giant Pump  
United Components acquire ASC Industries (USA)

- Wilo acquires Circulating Pumps (UK)
- South Bank UK acquires Hayward Tyler Group
- Sulzer Pumps sells Paco to Grundfos
- Pentair acquires Jung Pumpen (Germany)
- Lowara buys Mercury submersible motors (Italy)
- 2007** Sulzer's proposed acquisition of Weir Pumps falls through
- Clyde Pumps (part of Clyde Blowers) acquires Weir Pumps
- SPX acquires APV
- Grundfos acquires Peerless Pump
- Wilden Pump acquires Griswold Pump
- Franklin Electric acquires Monarch Industries pump division (USA)
- Weir Group acquires Multiflo Australia and SPM Flow Control (USA).
- 2008** Weir Group acquires CH Warman Pump Group

- Franklin Electric acquires Industrias Schneider (Brazil)
- Flowserve complete acquisition of Niigata Worthington (Japan)
- Dover Corporation acquires Neptune Chemical Pump to join its Pump Solutions Group (Wilden, Blackmer, Griswold, Almatec)
- Weir Group acquires Mesa Manufacturing (USA)
- Hamilton Sunstrand acquires Marelli Pumps (Spain)
- Clyde Blowers acquires Textron Fluid and Power division (including Maag Pump Systems and Union Pumps)
- IDEX acquires Richter Chemie-Technik.



*This overview of pumping history is by no means complete, but we hope you find it interesting and instructive. We apologise for any omissions and inaccuracies and will welcome any corrections which will assist in the preparation of an updated listing in ten years' time.*