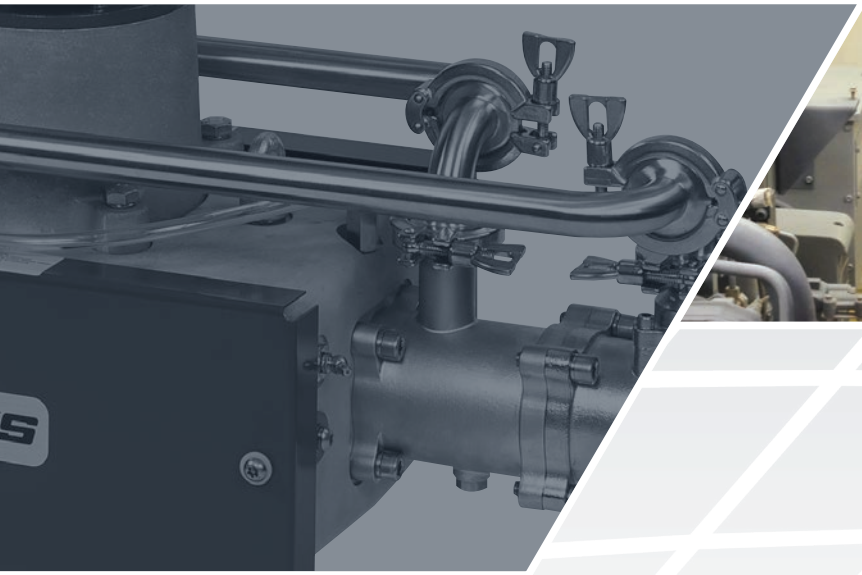
BINKS®

Binks Smart Pumps

Advanced Digital Control Circulation Pumps

The Original and still the BEST

FLUID HANDLING



- Significant energy savings
- Long life piston seals
- Tungsten carbide ball seats and ceramic coated pistons
- Choice of operational mode
- Patented reciprocating drive

Validated Reliability

Validated at the worlds major automotive production facilities

Binks Smart Pumps are respected for their energy saving capabilities and proven reliability. This is why they are found at the heart of the world's largest Automotive OEM and Tier 1 paint-shops.

Binks Smart Pumps combine an AC electric motor with our patented horizontal reciprocating drive fluid sections. The result is a circulating pump which uses a fraction of the energy of pneumatic pumps.

COATING TYPES AND APPLICATIONS

Suitable For These Materials:

- **Solvent OR Waterborne Coatings**
- **Primers, Sealers & Catalyzed Lacquers**
- **Moisture-Sensitive Materials**
- **UV-Cure Coatings**
- **Abrasive Coatings**
- **Adhesives & Fillers**
- **Plus many others...**

GENERAL INDUSTRY | WOOD | GLASS | AUTOMOTIVE OEM & TIER 1 & 2 | CERAMIC

New Models

- **Smart E2-15 AFP**
  The new Smart Pump specially configured for Piggable system applications.
- **Smart E2-15 Variator**
  With the convenience of manual speed adjustment through a mechanical variator

New Features

We are constantly making improvements to our **Binks Smart Pumps** and our latest models have many new features aimed at improving performance, reducing maintenance time and meeting the very latest **ATEX requirements.**

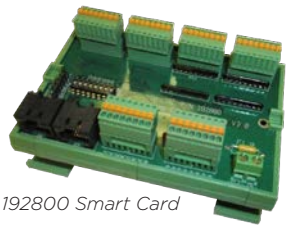
- **New Main Castings** give easier access to reciprocating carriage and cam for easier, less time consuming maintenance strip downs.
- **New Piston Design** improves flow dynamics and eliminates paint traps. Giving easier flushing, cleaning and less regular maintenance.
- **New Auto Lubrication System** attachment to ensure correct lubrication and to meet **new ATEX requirements**. Will provide carriage lubrication for up to a year.
- **New Manifold Elbow Connections** can be reversed to suit configuration and installation orientation.

Binks Smart Pump Features

- **Significant Energy Savings** - Electric drive linked with Smart Control gives significant energy and cost savings over pneumatic pumps.
- **Patented Reciprocating Drive** - minimizes pressure fluctuations, no surge chamber required.
- **Equal flow rate and pressure** from both strokes, gives constant supply pressure.
- **Flow Rate Control** by AC frequency inverter. Infinitely controllable within the 10 to 40 cycles per minute range.
- **Long Life piston seals** are lubricated by paint on both sides increasing seal life and ensuring no external leaks at end of seal life.
- **Tungsten carbide ball seats and ceramic coated pistons** ensure long working life, even when pumping aggressive and abrasive materials.
- **Enclosed PTFE shaft bellows seals** eliminate the need for shaft packing lubrication. Vital when pumping Light (UV) and Moisture (Catalyst) sensitive materials.
- **Choice of Operational Mode** - Simple flow mode or automatic 'Pressure Control' mode to achieve maximum 'Smart' energy savings.
- **Fluid Connections** - Sanitary inlet and outlet connections guarantee no paint-trap pockets at valve and manifold junctions.

Proven Technology

The original and still the BEST



192800 Smart Card

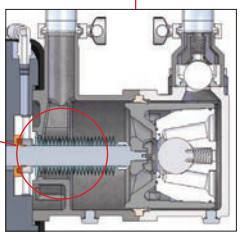
Patented Smart Technology, controls flow rate, delivering extra material only when needed, reducing energy consumption.

Low power consumption electric motor, combined with Binks Smart System, delivers significant energy savings over conventional pneumatic pumps.

AC frequency inverter removes further energy loss caused by conversion to DC.

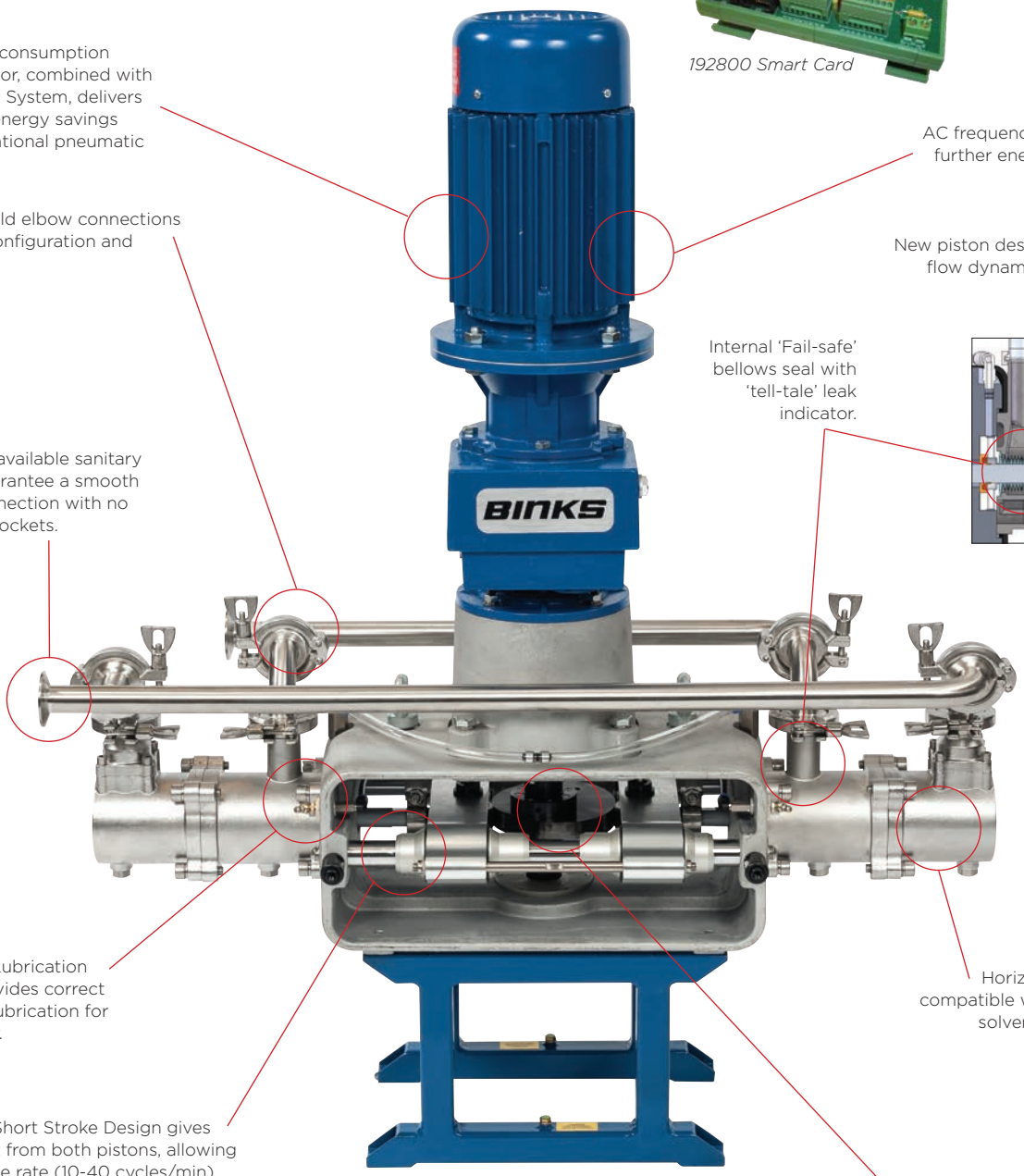
New manifold elbow connections for easier configuration and installation.

New piston design gives improved flow dynamics and flushability.



Internal 'Fail-safe' bellows seal with 'tell-tale' leak indicator.

Universally available sanitary fittings guarantee a smooth interior connection with no paint trap pockets.



New Auto-Lubrication System provides correct automatic lubrication for up to a year.

Horizontal fluid sections compatible with shear sensitive solvent and water based materials.

Horizontal Short Stroke Design gives equal thrust from both pistons, allowing a wider cycle rate (10-40 cycles/min) and greater flexibility of flow rate.

Patented reciprocating drive incorporating sliding carriage mechanism with asymmetric constant velocity cam, gives a smooth transition and virtually eliminates material pressure fluctuations.

CE Ex

All Binks Smart Pumps are Atex Approved.

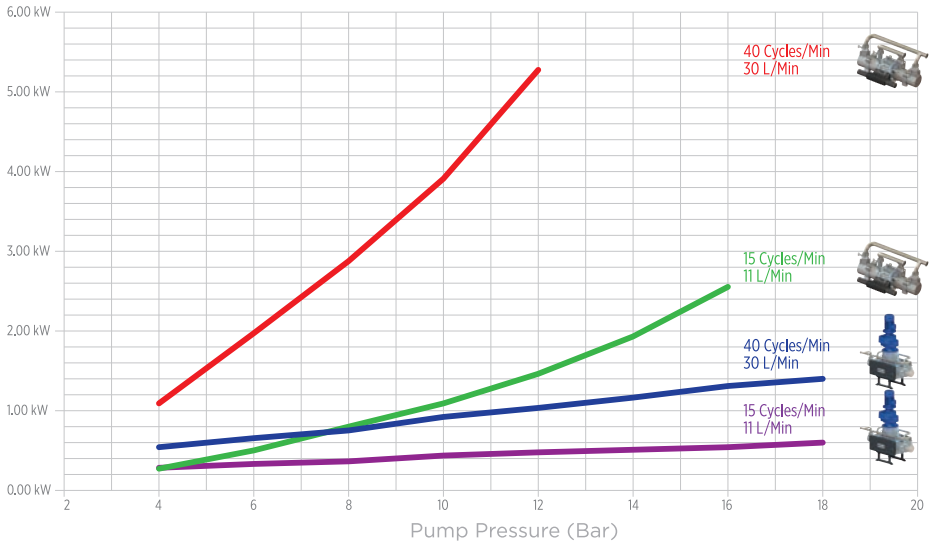
Smart Energy Savings

Substantial energy savings compared to pneumatic pumps

Binks Smart Pumps achieve optimum operating performance at considerably lower running cost than conventional compressed air pumps.

Comparison tests held against similar Pneumatic actuated fluid sections have demonstrated substantial energy savings.

Direct Comparison E2-30 v. Maple 30



Typical Cost Savings from Binks Electric Smart Pumps

- Reduces expensive compressed air system usage
- Lower Power Consumption – Reduction in Running Costs
- Reduction of Pump Speed and Pressure during Non-Production hours meaning longer production life
- No AC to DC conversion power loss.

The Binks Smart System

Digital Control Drives Greater Energy Efficiency

Binks Smart Pumps are considerably more efficient than competitor electric pumps due to their patented design. But when used with our ground breaking **Binks Smart System**, even higher savings in running costs can be realized.*

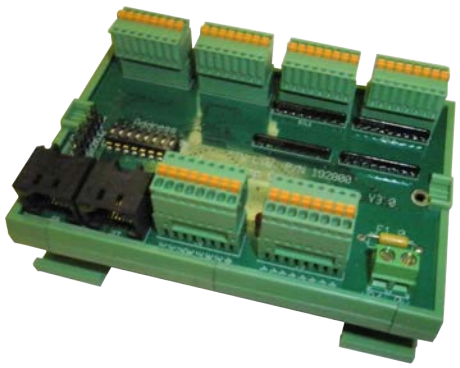
Binks Smart System ensures that material is delivered to the point of application, only when needed, dramatically reducing energy and paint consumption. **Binks Smart System** monitors when the spray booth is in closed-loop operation and increases the pressure and flow of material to match the demand. On returning to open-loop the **Binks Smart System** automatically decreases the pump speed to maintain minimum pressure and flow requirements.

The Smart Card controller interfaces seamlessly with all major PLC control software. Utilizing Modbus outputs it can link with Siemens, Alan Bradley and Mitsubishi PLC's.

** Only licensed Binks system integrators and distributors can supply and install the patented Binks Smart System.*

Additional Cost Savings from Binks Smart Control

- Supplies paint at required pressure and flow-rate only when needed
- Further savings on pump running costs
- Longer life and lower wear on consumable parts
- Potential paint saving due to reduction of shear
- Smart System can control individual and/or multiple pumps
- Smart controls allows monitoring of pump performance life and provides information for maintenance schedules.



The Binks Smart Card, saves energy through controlling pump speed and material flow rate.

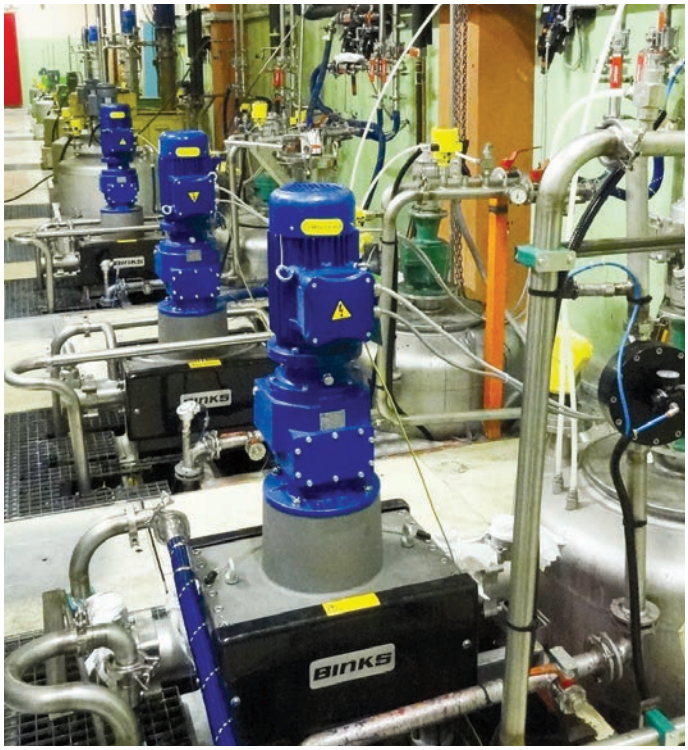
The smoothest mover in the (mix) room

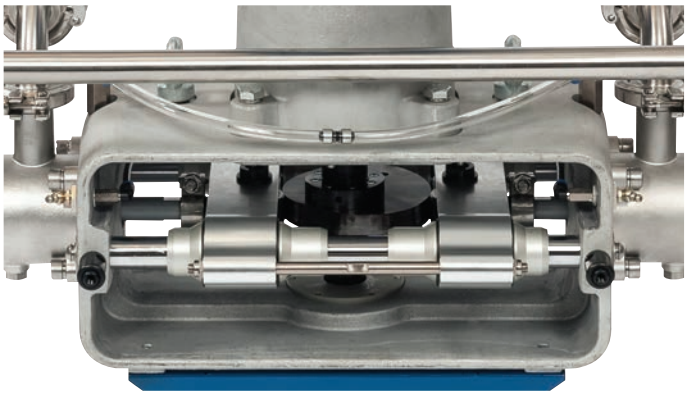
Patented design virtually eliminates fluid pressure pulses

Binks Smart Pumps are famed for their smooth, low pulse, material delivery. The patented Binks design virtually eliminates pressure fluctuations, ensuring pulse-free material application.

The reciprocating drive has at its heart an asymmetric constant velocity cam. The cam's critically engineered profile causes both pistons to act together for a brief period at change-over, thus achieving a smooth continual flow with negligible pressure fluctuations.

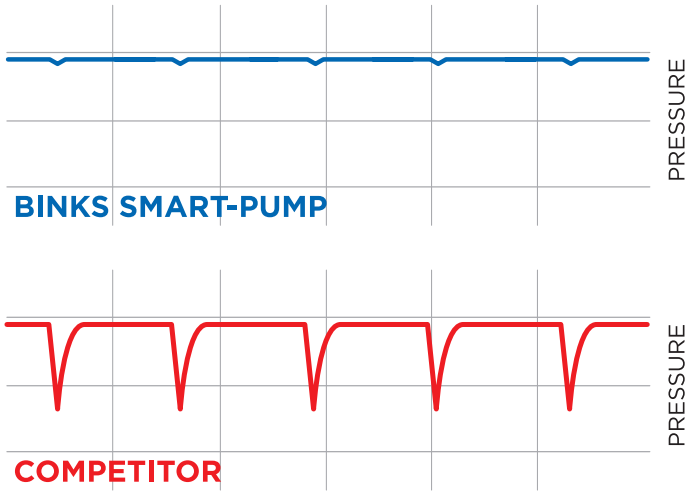
The horizontal configuration of the fluid section gives equal thrust on each stroke, which achieves a constant, controllable flow. All of these elements combine to provide a smooth flow of material, eliminating the need for a surge chamber.





Asymmetric constant velocity cam.

Fluid Pressure at Pump Outlet



Our Famous Smart Pump Range

Recognized and Respected Globally

Description Part Number	E2 - 15 Smart Pump 104017	E2 - 15 Variator Smart Pump 104126	E2-15 AFP 'Easi Flush' Smart Pump 104125
Pump Nominal Stroke	1.97 ins (50 mm)	1.97 ins (50 mm)	1.97 ins (50 mm)
Maximum Fluid Pressure	290 psi (20 bar)	290 psi (20 bar)	20 bar (29 290 psi (20 bar) 0 psi)
Nominal Flow Volume / Cycle	0.10 US gall (0.375 litres)	0.10 US gall (0.375 litres)	0.10 US gall (0.375 litres)
Fluid Output @ 20 Hz (10 cycles/min)	1.0 US gall / min (3.75 litres / min)	1.0 US gall / min (3.75 litres / min)	1.0 US gall / min (3.75 litres / min)
Fluid Output @ 80 Hz (40 cycles/min)	4.0 US gall / min (15.0 litres / min)	4.0 US gall / min (15.0 litres / min)	4.0 US gall / min (15.0 litres / min)
Max Inlet Pressure	29 psi (2 Bar)	29 psi (2 Bar)	100 psi (7 Bar)
Fluid Inlet / Outlet Connections	1" Sanitary	1" Sanitary	1" Sanitary
Gearbox Oil Quantity (EP ISO VG 220 Mineral Oil)	0.45 US gall (1.7 litres)	0.45 US gall (1.7 litres)	0.45 US gall (1.7 litres)
AC Induction Electric Motor	0.75 kW 4 Pole 1400 rpm 400V 3PH 0.75 kW @ 50Hz EEx d 11B T4 Rated 20 to 80 Hz (with thermisters)	0.75 kW 4 Pole 1400 rpm 400V 3PH 0.75 kW @ 50Hz EEx d 11B T4 Rated 20 to 80 Hz (with thermisters)	0.75 kW 4 Pole 1400 rpm 400V 3PH 0.75 kW @ 50Hz EEx d 11B T4 Rated 20 to 80 Hz (with thermisters)
Total Weight of Pump (inc electric motor)	172 lb (78 Kg)	202 lbs (92Kg)	176 lb (80Kg)
Accessories	192800- Smart Card		
	PRV22-U-10 - Pressure relief valve - 1 " Sanitary (E2-15)		
	PRV22-U-15 - Pressure relief valve - 1 ½" Sanitary (E2-30, E2-40, E2-60)		
	192547- Pressure Transducer (0-25 bar)		
	502144 - Pressure switch range 2 - 40 bar		
	192720 - Sensor Manifold		
	502501 - BPR Control Box		
	192206 - 1" Sanitary Gasket (E2-15)		
	192008 - 1 1/2" Sanitary Gasket (E2-30, E2-40, E2-60)		
	192009 - 1" Sanitary Clamp		

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E2 - 30 Smart Pump 107071	**E2 - 40 Smart Pump 107093**	**E2 - 60 Smart Pump 104085**	**E4 - 60 107070**
1.97 ins (50 mm)	1.97 ins (50 mm)	2.362 ins (60mm)	1.97 ins (50mm)
300 psi (20.7 bar)	232 psi (16 bar)	232 psi (16 bar)	290 psi (20 bar)
0.20 US gall (0.75 litres)	0.26 US gall (1.00 Litre)	0.4 US gall (1.50 Litres)	0.4 US gall (1.50 Litres)
2.0 US gall / min (7.5 litres / min)	2.64 US gall / min (10 litres / min)	4.0 US gall / min (15.0 litres / min)	4.0 US gall / min (15.0 litres / min)
8.0 US gall / min (30.0 litres / min)	10.6 US gall / min (40.0 litres / min)	16.0 US gall / min (60.0 litres / min)	16.0 US gall / min (60.0 litres / min)
29 psi (2 Bar)	29 psi (2 Bar)	29 psi (2 Bar)	29 psi (2 Bar)
1½" Sanitary	1½" Sanitary	1½" Sanitary	2" Sanitary
0.90 US gall (3.70 litres)	0.90 US gall (3.70 litres)	1.85 US gall (7.0 litres)	1.85 US gall (7.0 litres)
1.5kW 4 Pole 1400 rpm 90L 400V 3PH 1.5 kW @ 50Hz EEx d 11B T4 Rated 20 to 80 Hz (with thermisters)	1.5kW 4 Pole 1400 rpm 90L 400V 3PH 1.5 kW @ 50Hz EEx d 11B T4 Rated 20 to 80 Hz (with thermisters)	3.0 kW 4 Pole 1400 rpm 100L Frame 400V 3PH 3 kW @ 50HZ EEx d 11B T3 Rated 20 to 80 Hz (with thermisters)	3.0 kW 4 Pole 1400 rpm 100L Frame 400V 3PH 3 kW @ 50HZ EEx d 11B T3 Rated 20 to 80 Hz (with thermisters)
550 lbs (250Kg)	550 lbs (250Kg)	651 lbs (295 Kg)	737 lbs (335 Kg)

Finishing Solutions for the Global Market

Carlisle Fluid Technologies is a global organization focused on our customers within the finishing and coatings application sector. We develop, manufacture and market, high quality systems and equipment which handle and apply industrial paints, coatings and materials to surfaces.

The Carlisle Fluid Technologies group includes five world famous brands; DeVilbiss, Ransburg, MS, BGK and Binks.

Binks warrants to the original end-use purchaser that Binks Electric Pump products shall not fail under normal use and service due to a defect in material or workmanship within five (5) years from the date of shipment from Binks. Does not include normal wear and tear.

For further technical information refer to the Binks Smart Pumps Service Bulletins.

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