



HIPPOWASH

Inverter Fact Sheet

Hippowash utilises an inverter-driven pump system on all wheel wash systems in our portfolio.

This is because it delivers:

- ✓ Low Energy Requirements
- ✓ Cost Savings
- ✓ Flexibility
- ✓ Improved reliability

Low Energy Requirements

Hippowash is the only wheel wash company to use an inverter, which means that our system using a 22kW pump only requires an electrical supply of 63 Amps.

Non-Hippowash systems employ either a Direct On-line Start, requiring 132kW, or a Star Delta Start, 103kW. The diagrams on the right represent the increased power requirement each type of start demands.

The implications of using non-Hippowash systems are that your site infrastructure may need investment, by increasing the available supply and installing larger cables, or by investing in a larger generator to run the unit (**80Kva vs 45Kva with Hippowash**).

Cost Savings

The inverter provides the following cost savings:

- Less power is used to operate the unit vs alternative systems
- No requirement for increased power supply to site
- Smaller generator required if no mains power to site
- Infinitely variable wash pressure, saving energy and water
- Life of motors prolonged due to lack of power surges (see opposite)

Flexibility

Using any of the top three methods of starting, the pump can only be switched off or on full power. Using an inverter, the pump can be set anywhere between 1-100% offering total flexibility of wash pressure.

Improved Reliability

The inverter improves the reliability of the unit by protecting the motor of the pump, prolonging it's life. It also allows for unlimited starts, ie. unlimited vehicle throughput.

Pump suppliers recommend that large motors are not started more than 12 times per hour unless an inverter is used and warranties could be affected.

See overleaf for cost analysis

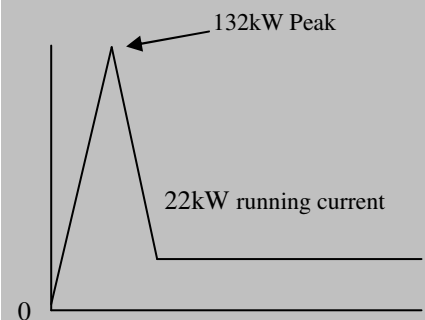
Electrical Capacity and Start-up Currents

Wheel wash systems are generally electrically powered via the mains or a generator.

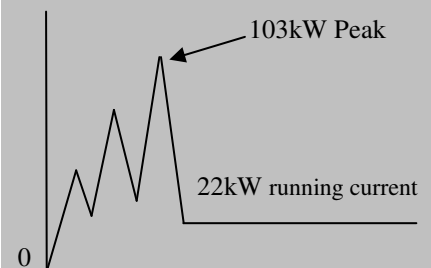
If run off the mains supply, most systems cause a significant drain on a site's limited electricity capacity, even up to 132kW.

The charts below indicate the electrical surges that ensue when using a wheel wash system.

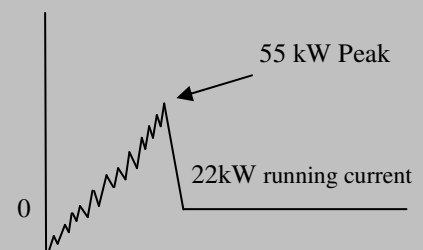
Direct On-line Start



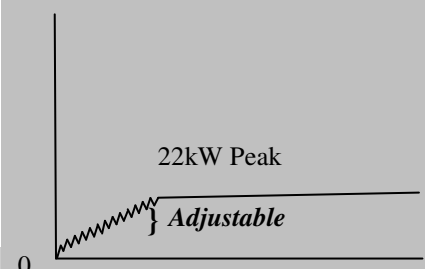
Star Delta Start



Soft Start



Inverter





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Energy Saving Calculation for Standard Pump & Fan Applications—22 kW Pump*

Non-Inverter

Running Hours:

Per Day	10hrs
Per Week	5 days
Per Year:	48 weeks
Total	2400 hours per year

Assumption:
motor draws 22kW at full speed

Energy consumption 52,800 kWh
Cost per unit 9p

Cost per year £4,752.00

Inverter

Speed	%Time	Power	Cost
80%	80%	11.264kW	£ 1,946.42
70%	20%	7.546kW	£ 325.99

Projected cost per year £2,274.41

Annual saving using an inverter = £2,480

*Calculations provided by pump manufacturer—details available upon request.

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