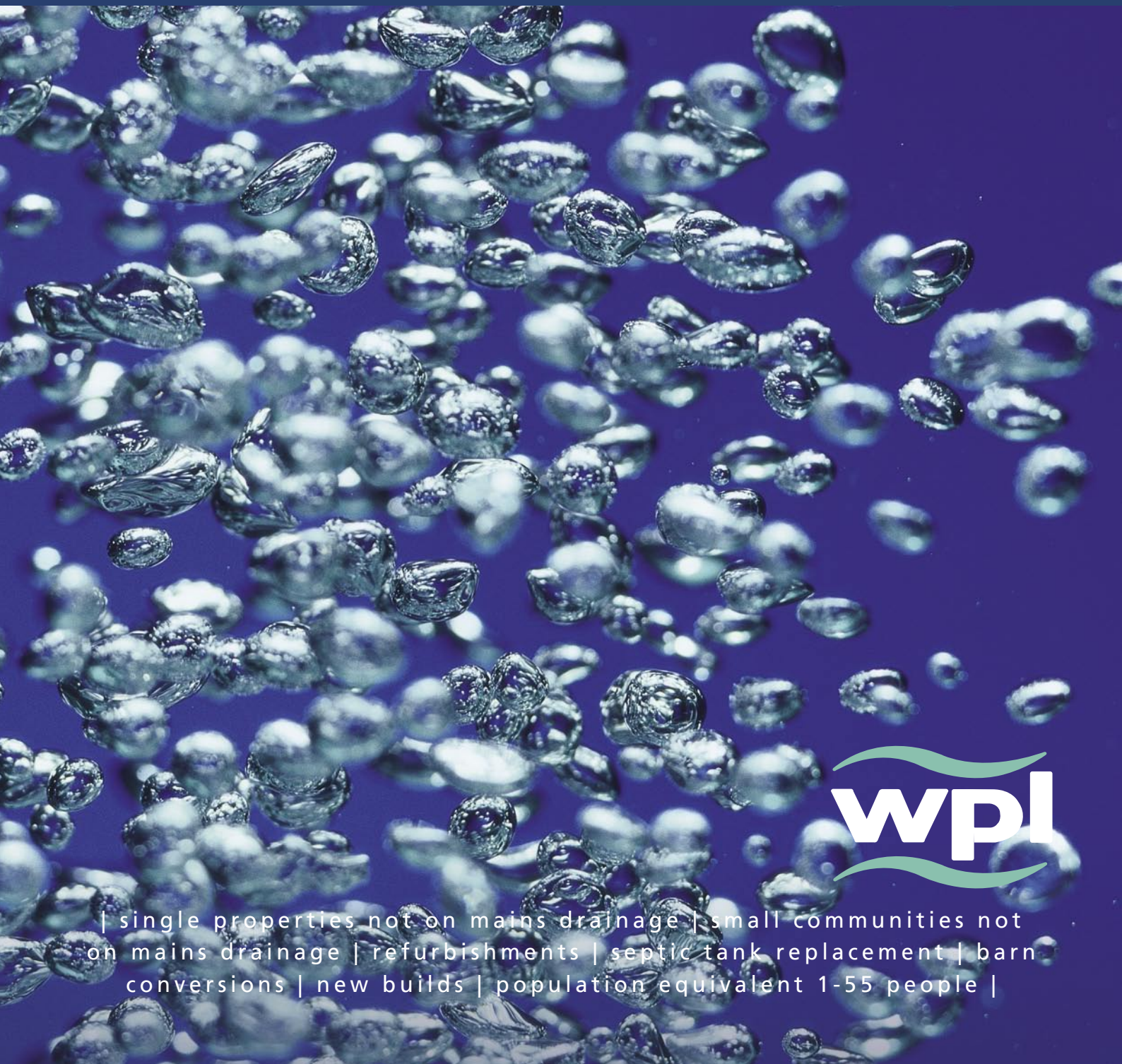


Diamond

sewage treatment plant information pack



Innovating Wastewater Solutions



| single properties not on mains drainage | small communities not on mains drainage | refurbishments | septic tank replacement | barn conversions | new builds | population equivalent 1-55 people |

The Diamond

The WPL Diamond sewage treatment range is specifically designed for domestic properties situated away from waste water mains drainage and type tested in accordance to EN12566-3 2005, the new European standard covering wastewater treatment plants, as required by UK Building Regulation.

Utilising a unique design, each purposely sized plant offers high quality, discreet water treatment whilst ensuring value for money, low ongoing running costs and complete peace of mind.

Benefits

- Outstanding **value for money**
- Continuous bacterial digestion giving up to **5 year desludging intervals**
- **Easy installation** – unique design minimises labour and materials
- **Low running cost** of the small, quiet air blower
- **Robust construction** reduces the need for concrete backfill
- Compact design **does not require large plant** for excavation or handling
- **No odours** as the process does not require primary settlement
- **Low visual impact** – small lid, flush with the ground
- **Reliable operation** – simple design, no internal moving parts
- **Excellent performance meeting normal environment agency consent standards**
- Over 40,000 units installed world wide
- **Fully compliant to Building Regulations (Part H)**

Model Range & Flow Rates

Model	DMS2	DMS3	DMS4	DMS5	DMC6	DMC7	DMC8	DMC9
Population range (persons)	1-6	5-11	10-15	14-20	21-27	28-35	36-45	46-55
Maximum organic loading BOD/day (grams) A WPL/British Water Loading Guide providing further information for non-domestic applications is available	360	660	900	1200	1620	2100	2700	3300
Maximum average daily flow (litres) *	1200	2200	3000	4000	5400	7000	9000	11000
Maximum blower power consumption (kWh) ** (depending on blower model)	0.12	0.14	0.17	0.24	0.55	0.75	0.75	0.75

* Peak flow must not exceed 3 x total flow for more than half an hour in any two hour period.

** Compressor manufacturer's data is an approximation to plant conditions.

Process performance is subject to strict adherence to WPL's installation, operation & maintenance manuals, user guide and a start up period of 6-12 weeks depending on plant loadings and water temperature. WPL provides a full brochure that details consents to discharge and how to calculate whether your soakaway area or discharge point (drainage ditch or stream) will meet the requirements. Please contact us, or your local distributor, for more information.

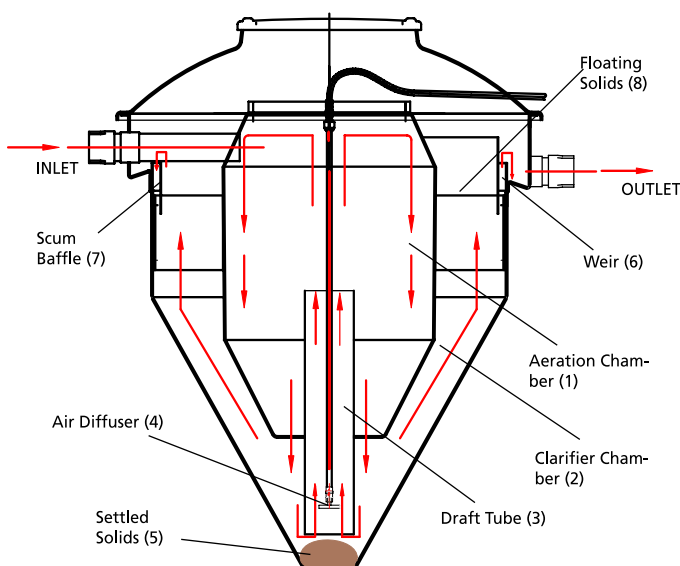
Installation

Stepped excavation minimises the amount of backfill material required and the Diamond's lightweight design allows for ease of movement around the site. For installations where there is a high water table, additional fixing anchors are available. Once installed, the Diamond provides unobtrusive and odour free waste water treatment.



Process Description

- The central aeration chamber (1) is a circular tank with a sloped open base, which empties into the bottom of the outer clarifier chamber (2).
- Located in the centre of the aeration chamber is a 200mm diameter draft tube (3), which extends to 100mm from the bottom of the clarifier. Air is released at the bottom of the draft tube through a disc plate diffuser (4).
- As the diffused air rises in the draft tube it causes an upward flow of process fluid. This draws the settled solids (5) from the bottom of the clarifier up through the draft tube where they are discharged at the surface of the aeration chamber.
- The design of the draft tube ensures continuous and complete mixing of oxygen with the sewage. This oxygenation allows the various aerobic organisms that biologically degrade the waste water contaminants to grow.
- Gravity causes the aerated solids to settle at the bottom of the tank where they are again drawn back up through the draft tube.
- As raw sewage enters the aeration chamber, it displaces biological solids from the aeration compartment to the clarifier. Less turbulent conditions in the clarifier allow the digested solids to settle to the base where they are returned back to the aeration compartment.
- The clarified (treated) effluent flows slowly up through the clarifier and over a weir (6), which extends around the periphery of the tank.
- The effluent collects in an outer trough where it is discharged through a 110mm pipe connection. The scum baffle (7) located inside the overflow weir prevents floating solids (8) from passing over the weir.



Process Performance

The Diamond is designed to "clean" the wastewater to a standard of 20mg/l Biological Oxygen Demand (BOD) and 30mg/l Suspended Solids (SS) on a 95 percentile basis. Additional filtration equipment is available to extend the treatment process to meet standards as high as 10mg/l BOD and 15 mg/l SS. More stringent environmental requirements involving ammonia and phosphorous reduction can also be accommodated, please contact WPL for details.

WPL also provides a data sheet to assist you with soakaway construction.

Technical Data and Dimensions

Model	Outside diameter	Height to inlet	*Inlet invert depth	Height to outlet	In ground depth	Weight empty	Total capacity
DMS2	1.85m	1.69m	570mm	1.59m	2.26m	120 Kg	2271 LTR
DMS3	2.1m	1.85m	700mm	1.73m	2.55m	160 Kg	3028 LTR
DMS4	2.1m	2.04m	700mm	1.92m	2.74m	210 Kg	3974 LTR
DMS5	2.1m	2.04m	700mm	1.92m	2.74m	210 Kg	3974 LTR
DMC6	3.2m	2.67m	590mm	2.57m	3.26m	380 Kg	9056 LTR
DMC7	3.2m	2.67m	590mm	2.57m	3.26m	380 Kg	9056 LTR
DMC8	3.2m	3.37m	590mm	3.27m	3.96m	460 Kg	15038 LTR
DMC9	3.2m	3.37m	590mm	3.27m	3.96m	460 Kg	15038 LTR

* Deeper inverts can be accommodated with our standard invert extensions; contact WPL for further information.

Blower Installation

Each blower is supplied with an enclosure to protect it from outdoor conditions. It should be connected to a single-phase supply (240v) via a suitable IP55 rated weatherproof socket or fused spur (not supplied) by a competent electrician. Included is 10m of airline to connect between the blower and the tank, however, blower installations of up to 30m from the tank can be accommodated. Please contact WPL or your authorised distributor for advice.

Service & Maintenance

The system requires less than two hours annual maintenance. As standard, it is sold with three years supply of service consumables. Service and maintenance agreements are available from WPL. Typical domestic systems will need to be partially desludged every 3-5 years. Systems that receive up to their design loading may require desludging every 1-2 years.

Delivery

Deliveries within mainland England, Scotland & Wales can normally be guaranteed within 15 working days. Units are shipped on a grouping arrangement and deliveries to some regions may take longer.

Guarantee

The Diamond sewage treatment range comes with a comprehensive five year parts and workmanship guarantee on the blower and plant respectively.

The unit's sturdy Glass Reinforced Plastic (GRP) construction and WPL's quality assurance procedures permit a minimum life expectancy of 25 years.

WPL is recognised internationally as a principle designer and manufacturer of high quality package and turnkey sewage treatment systems, and grease management solutions.

It has over 14 years' industry experience and services an extensive customer portfolio comprising the UK's major water utilities, all areas of the commercial sector and the domestic market place.

The company's consistent focus on ecology, coupled with extensive research & development into new technology, have enabled it to far exceed all existing and proposed discharge consent standards enforced by the Environment Agency, SEPA and other regulatory authorities.



WPL Limited
Units 1 & 2 Aston Road
Waterlooville
Hampshire PO7 7UX
United Kingdom

Tel: (+44) 0 845 4504818
Fax: (+44) 0 23 92242624
email: enquiries@wpl.co.uk
www.wpl.co.uk



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