Plop
CLEAN WATER, GLOBAL HOME

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PLOP PHANTOM® Glos Version QA

Q1: What is the treatment capacity of this system? How many vehicles can it support per day?

A: The designed treatment capacity is 3 tons/day. Based on an average water consumption of 50 liters per vehicle, the system can support approximately 60 vehicle washes per day, making it suitable for standard manual car wash shops or small-to-medium gas station car wash facilities.

Q2: What standards does the treated water meet?

A: The treated water fully complies with the Standards for Urban Wastewater Recycling – Urban Miscellaneous Water Quality (GB/T 18920-2020) for car washing reuse. Key indicators include: turbidity ≤5 NTU, COD ≤50 mg/L, and odorless/colorless effluent.

Q3: Oil contamination and foam are major challenges in car wash wastewater. How does this system solve them?

A: The system adopts a combined treatment process. First, graphene oil-absorbing sponges and modified hydrophilic-oleophobic fiber balls efficiently remove oil (retention rate ≥96%). Then, ozone catalytic

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oxidation decomposes surfactants and organic pollutants.

Q4: Why choose an MBR membrane instead of a conventional ultrafiltration membrane?

A: Car wash wastewater contains high levels of oil and suspended solids, which can easily clog conventional tubular ultrafiltration membranes. MBR membranes use aeration scouring to prevent pollutant attachment and have greater tolerance to grease and viscous substances, ensuring more stable operation.

Q5: What is the treatment process flow?

A:Car wash wastewater → Collection tank (lifting) → Hydrophilic-oleophobic fiber ball filtration + graphene oil-absorbing sponge → Ozone catalytic oxidation → Activated carbon adsorption → MBR membrane tank → Product water tank → Reuse for car washing.

Q6: Does the system operate and backwash automatically? Is manual operation required?

A: The system is highly automated. It features both normal operation mode and chemical backwash mode. Controlled by a microcontroller, it automatically manages water intake, aeration, water production, backwashing, sludge discharge, and other functions.

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Q7: What is chemical backwashing, and how often is it needed?

A: When membrane fouling reaches a certain level (detected through pressure monitoring or preset timing), the dosing pump automatically adds disinfectant into the clean water tank, and the system enters chemical backwash mode to clean the MBR membrane and restore flux. The required frequency is generally very low.

Q8: What are the main consumables, and how often do they need replacement?

A:Activated carbon: approximately 3 kg, recommended replacement every 2 months; Ozone catalyst: service life exceeds 2,000 operating hours; Oil-absorbing sponge and fiber balls: washable and reusable with a long service life.

Q9: Will the system freeze during winter?

A: No. The system is equipped with temperature sensors and heating devices. Heating automatically starts when the temperature falls below 2°C and stops at 5°C, protecting pipelines and equipment.

Q10: Does the system require a large installation area?

A: No. The core modules (filtration, ozone, activated carbon, and MBR tank) are compactly designed. The submerged MBR membrane

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configuration minimizes footprint, making it highly suitable for retrofitting car wash shops with limited space.

Q11: What are the flow rate and head of the product water pump?

A: The product water pump has a flow rate of 9 L/min and a head of 10 meters, fully capable of delivering treated water to elevated storage tanks.

Q12: Does this system comply with environmental regulations?

A: Fully compliant. In addition to enabling water recycling and reducing wastewater discharge, the concentrated waste liquid generated by the system is periodically discharged into septic tanks or municipal sewer networks, meeting the Discharge Standards of Water Pollutants for Automobile Maintenance Industry.

Q13: Will the treated water have any odor that affects customer experience?

A: No. Ozone catalytic oxidation and activated carbon adsorption effectively remove odors from car wash wastewater. The treated water is colorless and odorless, ensuring a good customer experience.

Q14: How long does the MBR membrane last? Is replacement expensive?

A: Under normal maintenance and chemical cleaning conditions, the

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MBR membrane module has a service life of 3–5 years. While membrane replacement represents part of the maintenance cost, the savings in water bills significantly outweigh the expense.

Q15: I operate a manual car wash shop washing around 30 vehicles per day. Is this system suitable?

A: Absolutely. For a daily workload of around 30 vehicles, the treated water output is more than sufficient. The stable process can significantly reduce water costs while enhancing your environmental image.

Q16: What if my shop washes more than 60 vehicles per day?

A: The treatment capacity can be expanded by increasing membrane area (for example, to 20 m^2) or adding additional units, raising the capacity to 5–7 tons/day for larger-scale operations.

Q17: Are there any limitations on influent water quality?

A: It is recommended that influent COD does not exceed 200 mg/L and petroleum content does not exceed 10 mg/L. If the wastewater contains excessive paint residues or chemicals, pretreatment is required.

Q18: Do I need to prepare a large buffer tank?

A: Not necessarily. The front end requires a collection tank (which can often be converted from the existing sedimentation tank in a car wash

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facility) to collect and pump raw wastewater. At the back end, a product water tank is recommended to ensure sufficient instantaneous flow for high-pressure water guns.

Q19: Besides car washing, can this system also be used for laundry water reuse?

A: Yes. The treated water also complies with the Laundry Reclaimed Water Quality Requirements (DB11 471-2007), making it suitable for combined car wash and laundry businesses.

Q20: In summary, what are the biggest advantages of this system?

A: Water-saving, cost-saving, environmentally friendly, and intelligent. The system converts car wash wastewater into clean recycled water, greatly reducing operating costs while meeting environmental requirements and enhancing the business's green brand image.