It is widely recognised that effective wastewater distribution is essential for achieving the optimum performance of a fixed film reactor process (trickling filter). Veolia Water Solutions & Technologies, a division of VWS(UK)Ltd, has invested more than 35 years in designing, commissioning & operating aerobic fixed film systems and has used this knowledge to create a range of the most effective rotating distributor systems.

INTRODUCTION

Veolia Water Solutions & Technologies previously operated under the names of Kruger, Edwards & Jones, Mass Transfer International, OTV and PTS.


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The bearing can normally be replaced without removing the distributor drum and designed to provide years of simple flange mounted installation. Individually designed and sized. A range of fabrication materials, horizontal and vertical fully wedge-tight, quick opening clean-out/flush gate at the end of each arm to facilitate arm draining. Where “SK” represents the flushing intensity per pass in mm/pass, “q + r” even biofilm development within the packed media bed.

The arms incorporate the following:–
- Distributor drum
- Distributor arms
- Distributor surfaces
- Arms supports
- Arm stiffeners
- Variable speed drive unit – optional
- Variable control – optional

The distributor includes a trapezoidal bar section cross-sectional arm profile with fully adjustable, large diameter, non-clog orifices integrated into the top arm surface to provide accurate adjustment for even distribution of the flow. The distributor is designed for minimum maintenance with mounted long life bearings and motor unit, maintenance free internal wear less, stabilizer assemblies, automatic lubrication system and quick release flush gates on the end of each arm.

Each distributor includes the following components:
- Centrally located upper bearing assembly
- Distributor drum
- Distributor arms
- Distributor surfaces
- Arms supports
- Arm stiffeners
- Variable speed drive unit – optional
- Variable control – optional

The rotation drive includes a stationary centre-inlet column of adequate height to develop the hydraulic head required for flow distribution. The central column is welded construction and fabricated from stainless steel 316 or GMS. The column is designed to withstand any hydraulic shock loading on the distributor arms. The column base includes conversion means for moving the distributor arm in situ. The standpipe is designed for direct bolting onto a distributor bend. A 3 inch thick flange (equivalent full pipe gasket is provided) instalation between the flanges. Incorporated into the standpipe are four outlets allowing efficient flow into the rotating body section, a wear band for the body stabilizers, a machining at the top for the support bearing and a packing gland to assist in the changing of the support bearing.

The upper bearing assembly incorporates the following design criteria:
- The upper bearing assembly is located down the weathering reaction to eliminate the possibility of contaminating the bearing with wastewater
- The upper bearing assembly is required to be replaced every 5 years
- The design also includes large area flow spreader plates to ensure a curtain wall flow regime over the total media surface.

The distributor is designed for maximum maintenance with mounted long life bearings and motor unit, maintenance free internal wear less, stabilizer assemblies, automatic lubrication system and quick release flush gates on the end of each arm.

The mini-GARD range has all the design benefits of the HiGARD range that has been specifically developed for use in the smaller sized trickling filters. Typically 5 to 20 meter diameter.

The distribution system is designed to provide even distribution of the influent across the full cross-sectional area of the trickling filter media bed. The distributors include a trapezoidal bar section cross-sectional arm profile with fully adjustable, large diameter, non-clog orifices integrated into the top arm section to provide accurate adjustment for even distribution of the flow. The distributor is designed for maximum maintenance with mounted long life bearings and motor unit, maintenance free internal wear less, stabilizer assemblies, automatic lubrication system and quick release flush gates on the end of each arm.