

Equiflo

a buyer's guide to making an informed and effective choice of rotary distributor, improve trickling filter performance and reliability and maximise ROI

by Richard Manning

Trickling filters provide a reliable, efficient and cost-effective solution to almost any municipal or industrial wastewater treatment requirement - BOD removal, nitrification and denitrification. However, a trickling filter installation is only as good as the quality and reliability of each component part, particularly those which form the filter's basic infrastructure such as the rotary distributor. A trickling filter is only as good as its rotary distributor. Without consistent and reliable wastewater distribution, a trickling filter will neither operate efficiently nor deliver the results you want.



2H Water Technologies trickling filter process

Choosing rotary distributors

Making the right choice of rotary distributor is as important as any other decision you make - for example, the type of media - when planning and buying wastewater treatment plant.

With the right rotary distributor in place, the trickling filter will deliver the level of operational effectiveness and service quality you need to maximise long-term return on your investment.

How do you make an informed choice?

1. **Know the Market:** Making the right choice requires a thorough understanding of what's available in the marketplace. In recent years, rotary distributor technology has evolved to offer more than the generic products that are still regarded by even the cannier wastewater management professionals as the industry standard.
2. **Know what you want - and how to get it!**: As far as 2H Water Technologies is concerned, every conversation we have with a customer starts at the same point: their needs. We

believe that no two customers and no two wastewater treatment challenges are the same. Every aspect of a truly successful trickling filter installation must be purpose-built to meet the client's exact technical, operational and logistical specifications.

Equiflo - setting new standards defined by you

It is that philosophy which is evident in Equiflo, and makes it stand out from the crowd. Equiflo is a new concept in intelligent, modular rotary distributor design designed and built to eliminate common problems; notably water damage and blockages, and provide the consistent, even wastewater distribution required for effective trickling filter performance.

The key difference is that, unlike most rotary distributors on the market, Equiflo is not a generic, off-the shelf product. Instead, every Equiflo is unique, designed and built from modular, precision-built components to the client's exact technical and operational specifications.

Problems with 'standard' rotary distributors

Built to fail

Many 'standard' rotary distributors have fundamental design faults that, regardless of the time and money you dedicate to design, management and maintenance, increase the likelihood of problems, breakdown and expense.

What happens when there is a problem...?

Wastewater treatment comes to a temporary stop while trickling filter operation is suspended to allow the rotary distributor to be dismounted, dismantled and repaired.

Unplanned downtime costs and disrupts operations

Even a single incident has a negative impact on operational effectiveness, budget and, crucially, service quality.

Because problems such as water damage and blockages are due to in-built design faults in the distributor - and therefore the trickling filter - the odds are that the same problems will occur time and time again, becoming increasingly more complex, time-consuming and costly to resolve.

Equiflo - benefits at a glance

Equiflo rotary distributors are innovative, practical, durable and reliable. Key benefits include:

- Easily handles all types of flows - municipal or industrial.
- Elegant, robust, modular design ensures long-term effective operation and reliability.
- Ensures consistent, even wastewater distribution.
- Motor and electrical parts mounted above feed water level ensures they are not constantly wetted.
- Easy maintenance, repair and cleaning.
- Fast, simple, cost-effective upgrade.
- Worn parts can be replaced quickly and simply without dismounting the rotary distributor.
- Excellent long-term ROI.
- And low operating costs over 25-year working life.

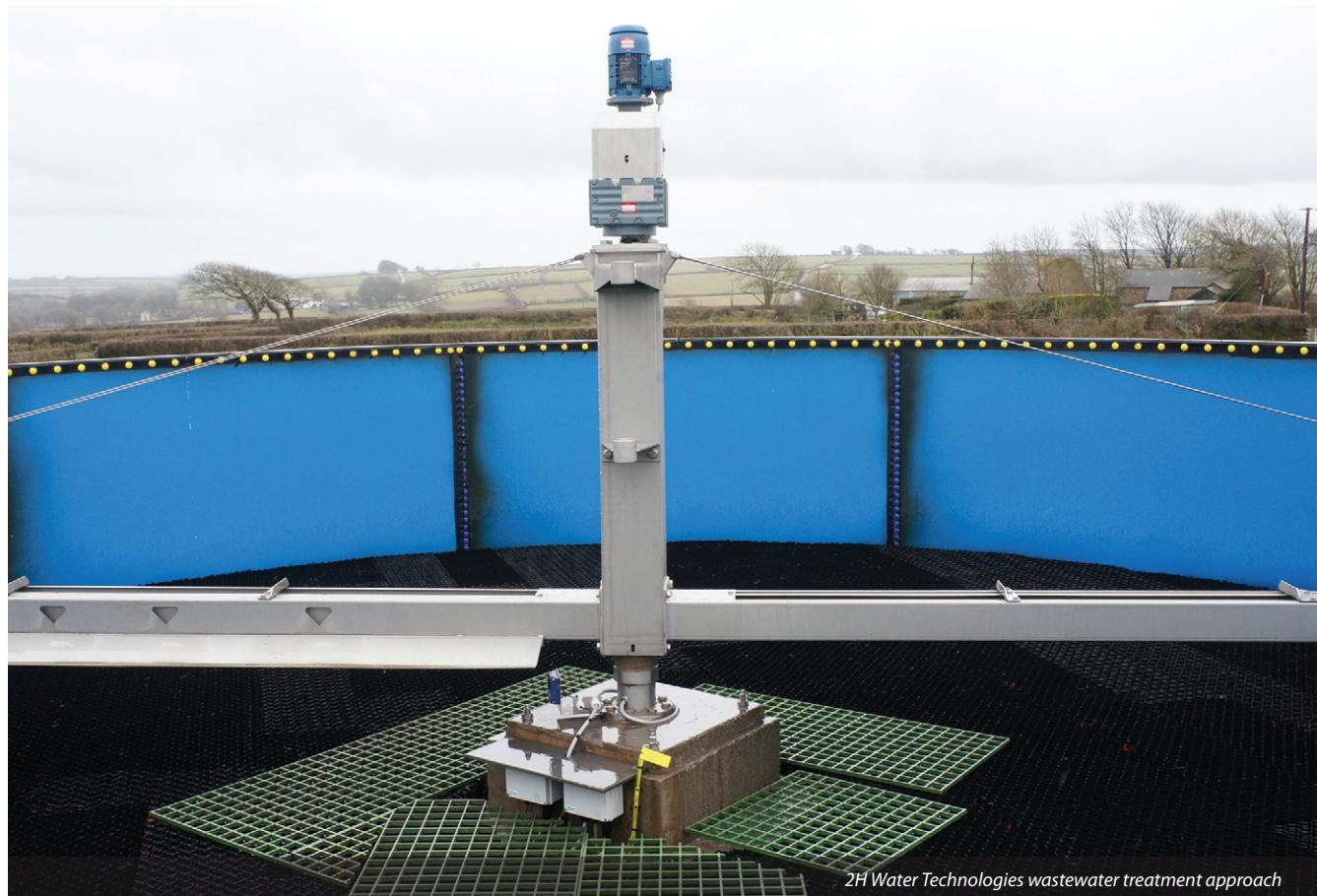
Making an informed choice means never settling for bad design

The most common causes of rotary distributor breakdown are water damage and blockages, both of which can be avoided by selecting a rotary distributor that is free from basic design faults.

Eliminate the cause of water damage: Despite lacking all logic, most rotary distributors have electrical components - motor and bearings - positioned far too close to the wetted area. No surprise then, that water damage is a frequent occurrence. The solution is simple. Choose a more 'sensible' and up-to-date design which, like Equiflo, has its motor and electrical parts mounted well above the water level thereby ensuring they remain problem-free.

We also recommend that you consider a direct-drive motorised version which does not need additional support from an air service or belt-drive system. Another feature offered by Equiflo, which we believe should be on your shopping list, is the ability to disengage and switch to hydraulic operation if there is an electrical malfunction or failure.

Blockage-free distributor arms: ENEXIO 2H Water Technologies advise foregoing the standard tubular distributor arms, particularly those fitted with nozzles as they're notoriously prone to blockage. We offer a choice of two, four or six 'trough' shaped distribution arms to Equiflo, each of which is formed in multiple sections for flexibility and easy maintenance.



To buy or not to buy?

Here's a guide to the essential features and benefits you should expect from a rotary distributor. If your supplier's offering does not meet these criteria, we recommend taking a closer look at the Equiflo Rotary Distributor: www.2hwatertechnologies.co.uk/rotary-distributor-brochure

Features and benefits of Equiflo	
FEATURE	BENEFIT
Drive motor mounted on top of distributor	Motor is mounted well above the wetted area of the filter so avoids constant wetting
Drive motor is direct drive	No requirement for air service or belt drive system required
Drive motor automatic disengage	Disengage system for motor failure is a simple mechanical by-pass
Splash plate application	Creates a curtain effect to ensure all the media contributes to the process
Proof of curtain effect	Pan test as part of final installation set up
Adjustable base plate installation	Simplifies the civil requirements and accurate distributor levelling
Open trough arms	Not prone to blockage like tubular arms with nozzles
Manufactured in stainless steel	Ensures distributor life is minimum 25 years
Top mounted main bearing	Allows changing with just support from the distributor support column
Motor removing davit	The removable davit lifts motor and lowers to ground without a crane

Flexible, modular design puts you in control: Have you ever agreed to cover the cost of adapting your premises to accommodate new plant? Or paid the price (in downtime, erratic productivity and maintenance time and costs) of installing equipment with intractable if mundane practical or logistical limitations which, when you made your buying decision, did not seem to be such a big deal.

Compromise costs - and it is generally the customer who foots the bill; a rule of thumb should be that if the rotary distributor (or any other equipment) cannot be adapted to suit the proposed location, then do not buy it.

The modular, flexible structure ensures you're in charge of every aspect of Equiflo's design and build. Equiflo can be customised to fit, and work effectively, in almost any location.

For example, Equiflo can be customised to be mounted off feed pipework flanges, concrete pillars or suspended from over-head beams and bridges. It can be adapted to operate with the water supply that suits your plant or installation: supplied from the bottom or top.

Take active control: The 'ideal' choice rotary distributor should allow you to plan for, and take active control, of vital, and potentially



complex processes, such as handling different levels of wastewater composition and flow.

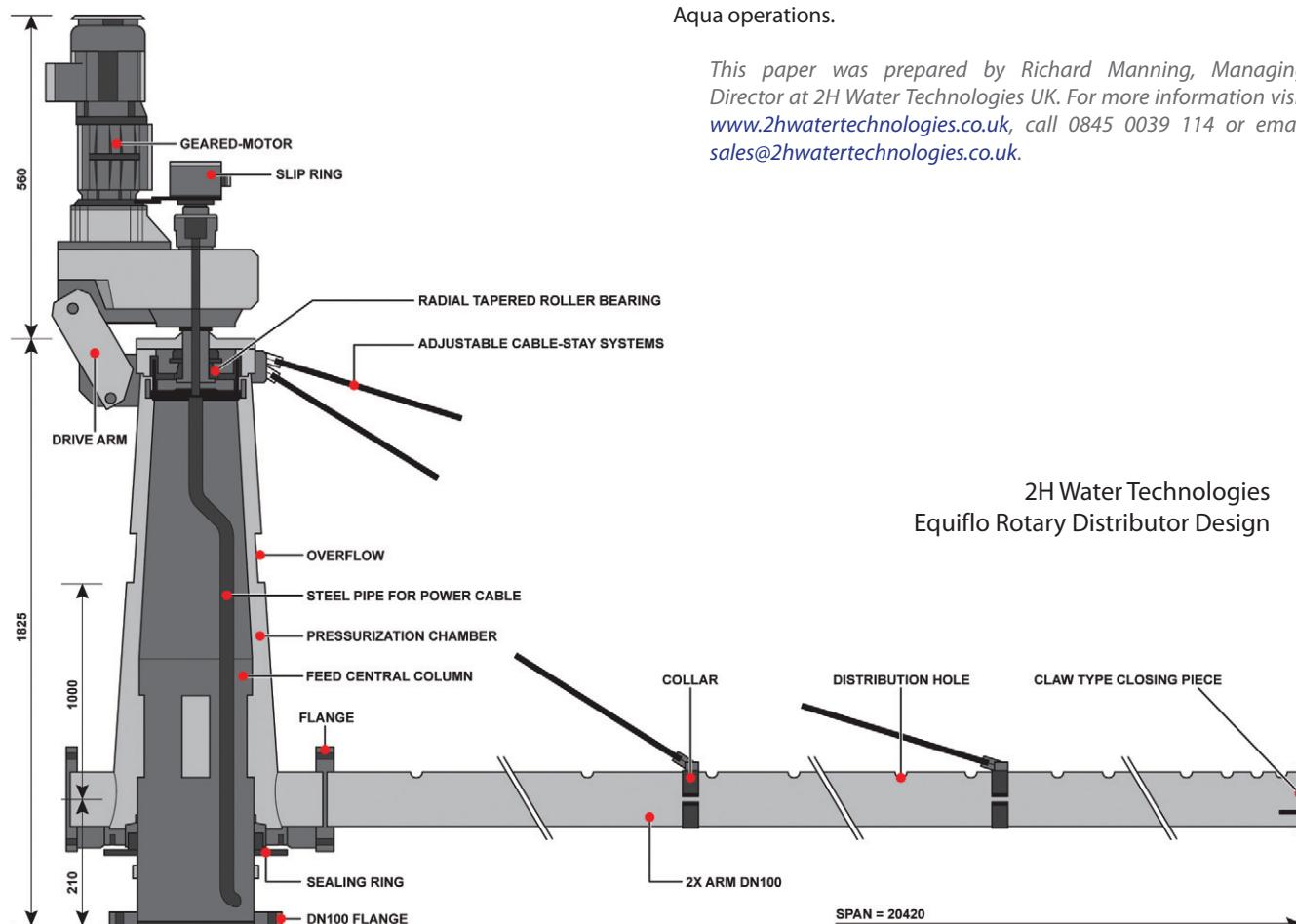
For example, the Equiflo Rotary Distributor can be adjusted to provide consistent distribution for applications with very high fluctuations in flow. It will automatically adjust distribution to meet temporary or seasonal variations. One early adopter, Thatcher's, has had great success using Equiflo in a plant which, at different times in the year, pulps different varieties of fruit - from berries to apples - for use in the production of squashes and ciders.

Clean, maintain, repair without fuss or downtime: Another important factor to bear in mind when making your buying decision is whether essential tasks - repair, cleaning, maintenance or replacement - can be achieved without dismounting the rotary distributor or suspending trickling filter operation. In contrast to most products currently on offer, each Equiflo Rotary Distributor is individually crafted from modular, precision-engineered components which can be removed, cleaned, repaired or replaced without any impact on production.

Easy, cost-effective upgrades enhance ROI: General wear and tear is inevitable but, for many rotary distributors, even minor depreciation can signal the end of productive working life. Unlike Equiflo, which is built from modular components, there's only one option and that's finding the budget to pay for a replacement rotary distributor. Manufactured in robust stainless steel, the Equiflo Rotary Distributor is easy to clean, maintain and, most importantly, upgrade. When a part is worn, broken or just needs to be updated, it can be replaced.

Equiflo in action

Since Equiflo came onto the market in 2015, it has quickly become the distributor-of-choice for customers who recognise and value the rotary distributor's unique capabilities.



Thatchers Cider, Somerset: When increased demand prompted a 60% increase in production, Thatcher's Cider asked 2H Water Technologies to upgrade its effluent treatment plant in Sandford, Somerset. A purpose-built solution which includes BIOdek structured plastic media and a customised Equiflo Rotary Distributor copes easily with a substantial BOD/COD load, which varies significantly, and keeps the facility within consent. In its first industrial installation, Equiflo has proven to be practical, durable and effective.

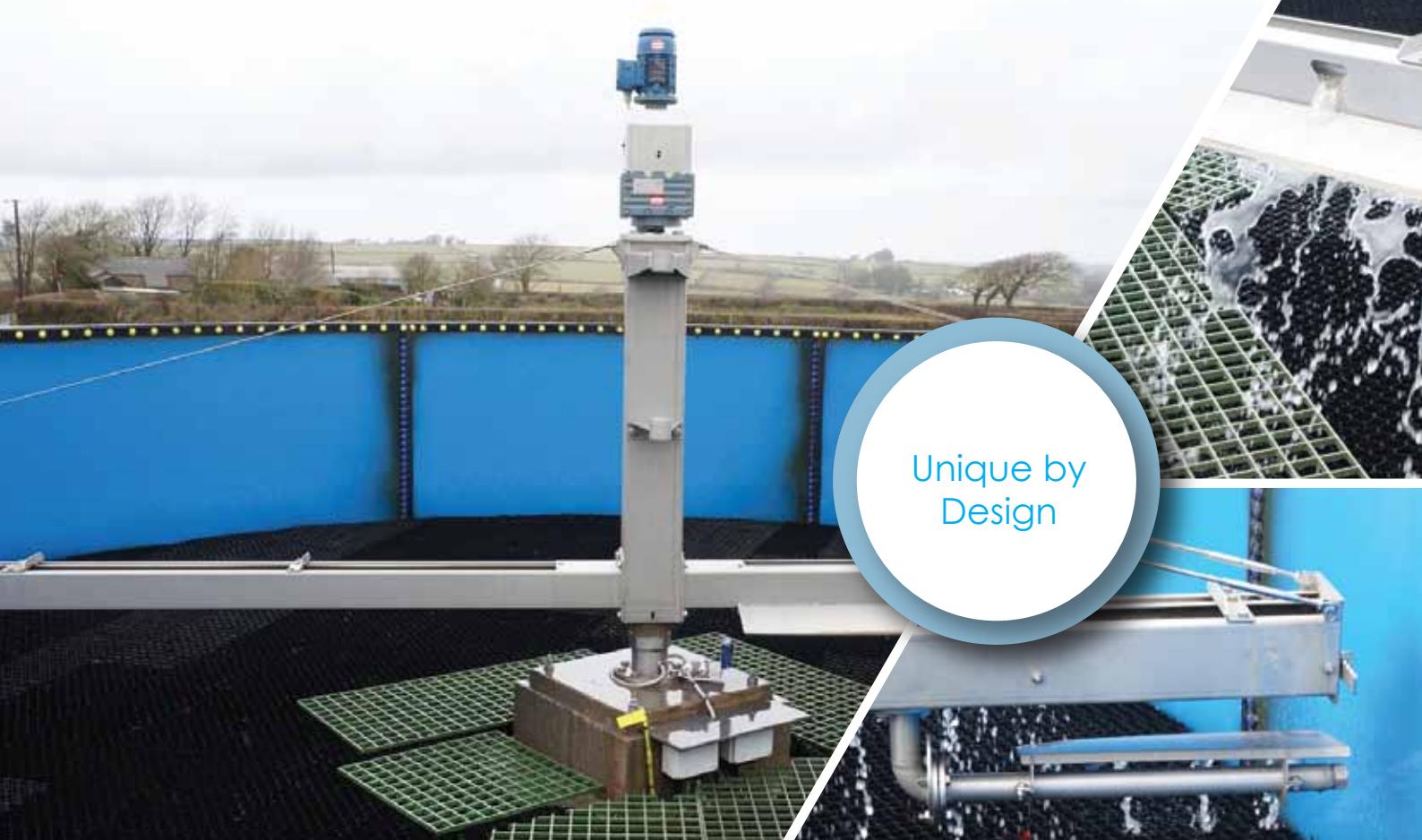
South West Water, Woolsery WwTW: South West Water became Equiflo's first municipal user when it installed the new Rotary Distributor at its Woolsery WwTW. Equiflo was part of a solution commissioned by Interserve Construction, primary contractors charged with building a nitrifying filter specified by consultants, Pell Frischmann, at the Woolsery WWT plant. Following consultation with Interserve Construction and SWW, 2H Water Technologies designed, manufactured and installed BIOdek KFP619 cross flow plastic media and a customised Equiflo variable speed rotary distributor.

Summary

ENEXIO 2H Water Technologies (2H) is the UK's leading manufacturer of plastic media for water and wastewater management plant. 2H Water Technologies designs, manufactures and supplies products and equipment that deliver measurable results in a wide range of applications including utilities; water and wastewater treatment, industrial effluent treatment and general industrial water cooling. The company's industry-leading product ranges include BIOdek, PLASdek, TUBEdek and SANIPACKING. 2H Water Technologies works closely with specifiers, architects and civil engineers in the design and installation of a wide range of industrial projects.

During its 30 years in business, 2H has built an outstanding reputation for quality products and services. 2H comprises the former Environmental Control Division of Munters, Ranik and 2H Aqua operations.

This paper was prepared by Richard Manning, Managing Director at 2H Water Technologies UK. For more information visit www.2hwatertechnologies.co.uk, call 0845 0039 114 or email sales@2hwatertechnologies.co.uk.



EQUIFLO ROTARY DISTRIBUTOR

Boost Trickling Filter Performance and Reliability

- Customised, Unique Design
- Reliable, Robust and Adaptable
- Ideal for high-pressure municipal or industrial applications
- Easy to clean, maintain and upgrade

Equiflo is a new concept in intelligent, modular rotary distributor design.

Improves Trickling Filter Performance

Equiflo provides the consistent, even wastewater distribution which is the key to effective trickling filter performance.

Increases Operational Efficiency and Reliability

Equiflo is free from the design faults that can cause problems - such as water damage and blockages – and lead to expensive downtime.

Uniquely Better by Design

Equiflo rotary distributors are individually customised to the client's exact specifications from modular, precision-built, stainless steel components.

Improve trickling filter performance and save money with Equiflo. Find out more: 0845 0039 114

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