



35' diameter Full Bridge Clarifier

## FULL BRIDGE CIRCULAR CLARIFIERS

Envirex® full bridge (F Type) sludge collector mechanisms are available in sizes beginning at 10 feet in diameter. Generally, the economics of the design limit the F Type to 50 feet in diameter, although larger sizes can be built for special requirements.

In the F Type design, a structural steel bridge spanning the tank's diameter supports the drive mechanism. A center torque tube bolted to the drive, supports and rotates the sludge collector mechanism.

### Main components

Influent enters the tank from the side of the basin and is fed into the center influent feedwell. The feedwell reduces the influent's energy while eliminating or reducing density currents. The feedwell permits only a low velocity flow to enter the tank, assuring maintenance of quiescent conditions and the most efficient removal of solids.

For wastewater applications, the feedwell is equipped with baffled scum ports that permit floating material to escape from the feedwell while preventing short circuiting.

The feedwell is supported from either the bridge or beams spanning the tank as dictated by the design.

### Influent Feedwell and Pier

Scraper arms are bolted to the torque tube and rotate with it. The scraper arms are engineered to complement the drive and anticipated sludge loads. Scraper arms extend from the torque tube to the periphery of the basin. A minimum of two scraper arms are provided, allowing the basin floor to be scraped at least twice in each removal.

Each scraper arm is furnished with a number of scraper blades that are arranged to collect and direct the sludge to the center of the tank for hydraulic removal.

### Support Bridge

The support bridge provides access to the drive mechanism. For operator convenience and safety, the bridge is provided with a minimum three foot wide walkway. All walkways have handrails and a four inch high kickplate along both sides and around the drive.

Specifically designed for the particular demands and operating conditions of water and wastewater treatment plants, the Envirex® F Type drive is built for years of continuous service with a minimum of maintenance.

### Custom Designed

Each custom designed F Type drive is completely manufactured by Evoqua, providing owners with one source of responsibility for service assistance and replacement parts. In addition to new installations, F Type drives are available for retrofit and upgrade applications.

### Stable, Vibration Free Low Friction Platform

A large diameter ball bearing supports the worm gear. This bearing provides the worm gear with a stable, vibration free, low friction platform that translates into extended, durable drive performance.

An outboard bronze steady bearing supports and stabilizes the torque tube. In doing so, it reduces and/or eliminates tipping loads on the main gear and bearing. Without this unique feature, unequal and unbalanced loads could cause premature failure of the main gear or bearing.

The Envirex F Type drive is designed for the loads applied by a circular clarifier mechanism. This is an important consideration, since it is in direct contrast to off-the-shelf drive units that are not designed for the loads or conditions encountered by circular clarifiers.

The primary reduction unit is a heavy duty helical gear designed for efficient speed reduction. It is coupled to the secondary reduction unit by a chain and sprocket that can be equipped with shear pin overload protection.

The secondary reduction unit consists of a cut tooth steel worm and cast worm gear. The worm gear is supported by a precision bearing. This bearing operates within an oil bath.

Overload protection, including alarm and shutdown microswitches, operates from the thrust of the worm shaft.

All F Type drive components are designed to AGMA standards for worm gears. The use of the external steady bearing eliminates the need for an underwater bearing.

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an EVOQUA brand



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