

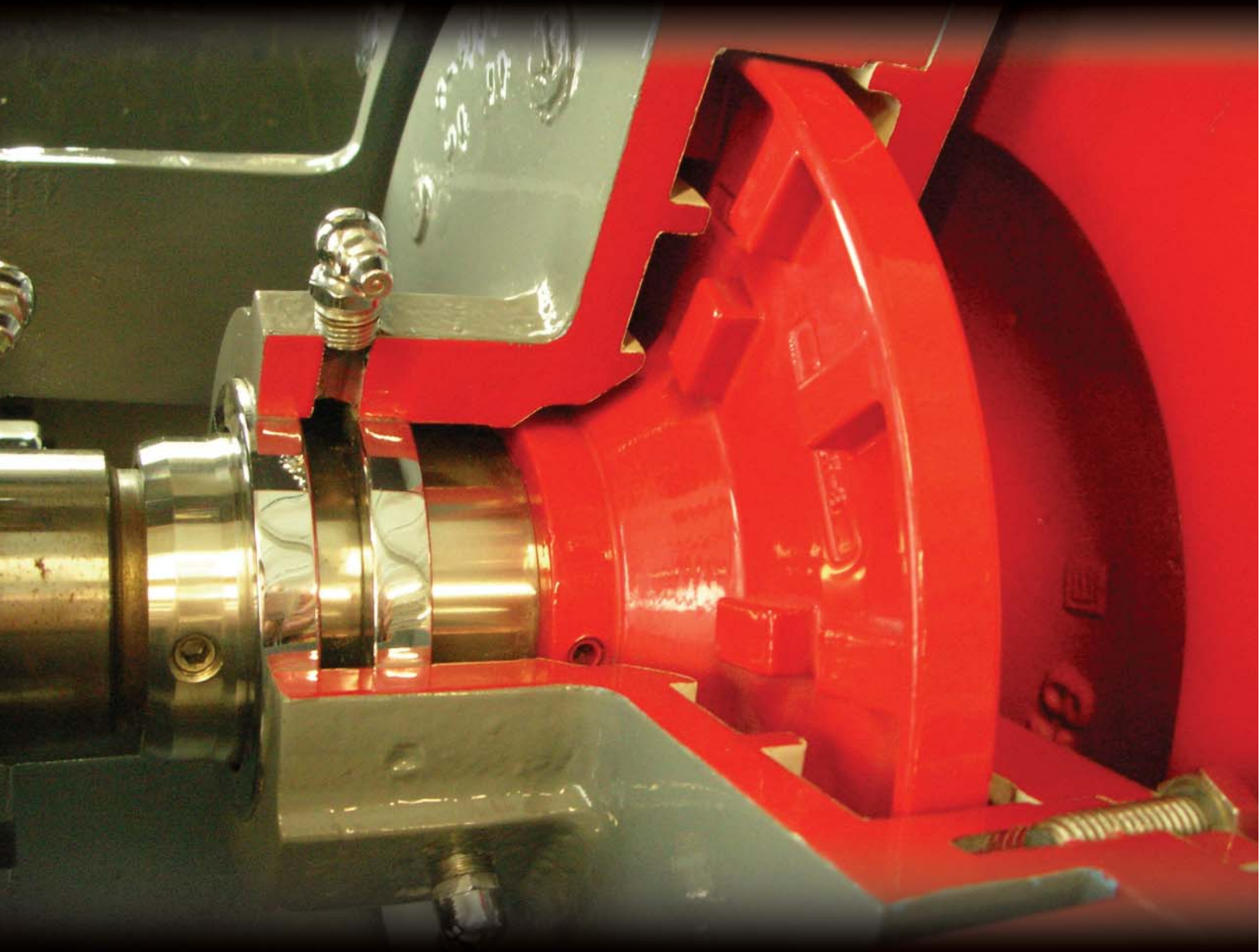


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Water & Wastewater

# Flygt A-C Series EQUISEAL™ Dynamic Seal

Low maintenance sealing systems



*Engineered for life*

# Lower maintenance and longer life equal cost savings



## Expeller - EQUISEAL™ Dynamic Seal

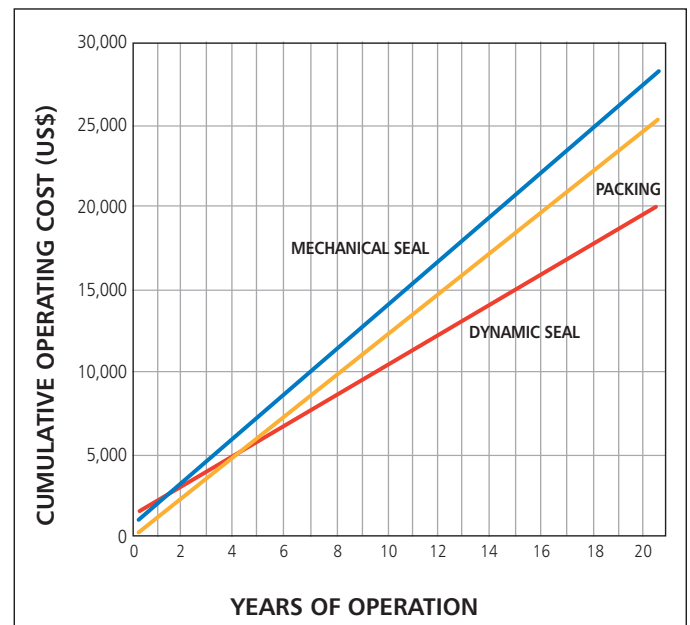
- Dynamically seals by opposing discharge pressure
- Packing and expensive mechanical seals are eliminated
- Seal flush is not required thus conserving water and eliminating retreatment costs
- No metal-to-metal rubbing parts and no critical operating clearances result in significantly longer life versus other sealing methods

## Dynamic Seals Lower Life Costs of Wastewater Pumps

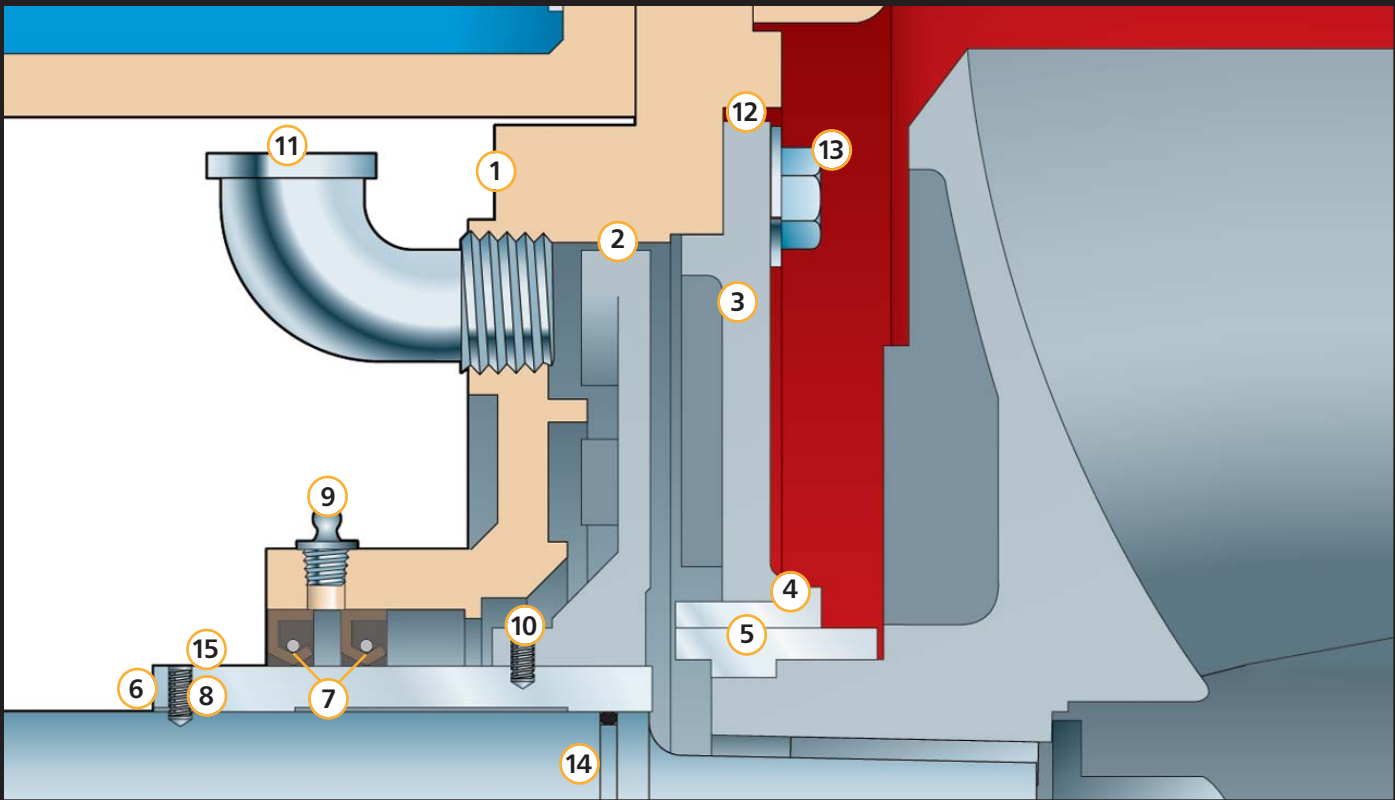
Traditional packing and mechanical seals both require clean water for the lubrication of the packing or the seal faces. Finding clean water in a sewage plant can be difficult and even when available it may be inadvisable to hook up a potable or non potable water line to a sewage pump. This is due to the fact that the sewage water may flow backward in case of a power failure, malfunctions, or interruption of the clean water pump.

When a plant water supply is used for sealing purposes, an air gap between the incoming water supply and seal water system is required to prevent contamination. Hence, sewage plants often use an independent seal water system. This seal water system normally consists of a tank with overflow connections and a float to maintain the air gap, two small pumps with duplex control panel, Y-strainer, relief valves and isolation valves. The cost of a seal water system with installation and piping cost range from \$10,000 to \$20,000.

In addition to the cost of a separate sealing system, the sewage plant also has to consider power to run the seal water pump and the cost of clean water. A 4x4 sewage pump with 2" sleeve OD can consume 0.5 gpm to 2.5 gpm depending on packing type and lantern ring position. On the other hand, a single mechanical seal can also consume 0.5 gpm to 1.5 gpm of flush water. This means if the pump runs for 24 hours a day, the total consumption of sealing water for just one 4x4 pump can be as high as 1000 to 2500 tons of water per year. Since the sealing water travels back to the process, the 1000 to 2500 tons of extra water will need to be treated again before it returns to the environment.



Wastewater with Dynamic Seal Pump life cycle chart



**MAXIMUM PERMISSIBLE SUCTION HEAD – FEET**

FRAME	1770 RPM	1170 RPM	880 RPM	700 RPM	585 RPM
F7-M3	40.5	17.5	9.5	—	—
F7-K2	40.5	17.5	9.5	—	—
F7-D3	80	34	19	12	8.5
F7-B4	91	53	30	19	12.5
F7-C4	—	70	40	25.5	17.5

Dynamic Seals are available as single stage only. Consult Factory for variable speed applications. Pricebook efficiencies may be derated when using Dynamic Seals. U.S. patent #4990055

**General operating and maintenance notes:**

- Grease must be added at item (9) once a month. Remove grease fitting and fill the cavity until grease extrudes from the top then reinstall the fitting.
- If the bypass line is not connected to the suction of the pump at the factory, install a 3/4" (M and K frame - see below) or 1" (D, B, and C frame) minimum bypass line from item (11) back to the pump suction. The bypass line should be as short as possible and there should be no obstructions including valves in the line.
- The pump must never be exposed to any pressure greater than 15 psi when the pump is at rest. Failure to prevent this may result in forcing abrasives into the lip seal and ultimately its destruction.
- Minimum operating speed depends on suction pressure. Consult factory to verify the minimum operating speed.

ITEM	REQ.	DESCRIPTION	MATERIAL
1	1	Housing - Equiseal® Dynamic Seal	C.J. CL30
2	1	Expeller - Equiseal® Dynamic Seal	304 S.S. or Ductile Iron
3	1	Cover - Housing	C.I. CL30
4	1	Throttle Bushing - Cover	Stn. Stl. 316 N.C. Coating
5	1	Sleeve - Impeller	Stn. Stl. 316 N.C. Coating
6	1	Sleeve - Shaft	Stn. Stl. 316 N.C. Coating
7	2	Lip Seal	Mfg. Std
8	1	Set Screw	316 S.S.
9	1	Grease Fitting	Steel
10	3	Set Screw	316 S.S.
11	1	Street Elbow	Steel
12	8	Lock Washer	Steel
13	8	Hex. Hd. Screw	304 S.S
14	1	O-Ring	Buna
15	2	Set Screw	316 S.S.



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## What can ITT Water & Wastewater do for you?

Integrated solutions for fluid handling are offered by ITT Water & Wastewater as a world leader in transport and treatment of wastewater. We provide a complete range of water, wastewater and drainage pumps, equipment for monitoring and control units for primary and secondary biological treatment, products for filtration and disinfection, and related services. ITT Water & Wastewater, headquartered in Sweden, operates in some 140 countries across the world, with plants in Europe, China and North and South America. The company is wholly owned by the ITT Corporation of White Plains, New York, supplier of advanced technology products and services.

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