

ABS dry installed sewage pump FR

Applications

Sulzer dry installed sewage pump, series FR, has been designed for reliable and cost-effective pumping of wastewater and sewage in municipal works and industrial plants. The pumps can also be used for sludge and liquids containing solids and fibres as well as for clean water.

Design

The FR pumps are built on a modular design meaning pumps within the same bearing assembly have many parts in common. The pumps have rigid bearing assemblies for reliable operation. The sizes range from DN 50 to DN 800 (flange diameter).

Depending on available space and pipe layout FR pumps can be installed in vertical or horizontal execution.

Pump casing

Smooth inner contours minimise erosion and generous wall thicknesses give long operating life.

Impeller

Thanks to a special vane design, the impellers achieve both large free passages and high efficiencies.

Medium-sized pumps have open two-channel Contra-Block impellers. This system consists of a wear disc with grooves forming a spiral and an open no clogging impeller. The wear disc can be adjusted to compensate for wear, making it possible to maintain the efficiency during the whole period of operation. The spiral groove minimises blockaging.

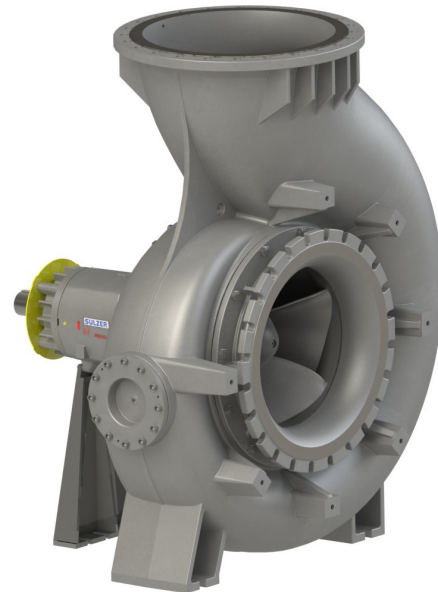
Closed channel impellers have large free passages - in some cases the ball passage is 150mm dia.

Mixed flow semi-open impellers are used in the larger pumps, which are equipped with a grooved, self-cleaning wear disc.

Each impeller has been designed with open hydraulic and excellent rag handling capabilities, together with highest possible efficiency. This ensures low operating cost.

Bearing assembly

The FR pumps are equipped with rigid bearing assembly. Small and medium sized pumps are equipped with bearing assembly 3, 4, 5R with grease lubrication. Large pumps are on bearing size 5 and 6F with either grease or oil lubrication. Pumps with vertical executions are fitted with grease lubrication.



Shaft seals

The modular design also allows any other seal solution. Bearing assembly 3R and 4R: Double mechanical seal with environmental friendly liquid (glycol).

Bearing assembly 5R, 5F and 6F: Flexible seal solution thanks to Sulzer PSI seal system with single-, double mechanical seal or gland packing.

The Sulzer PSI cartridge for single mechanical seals is the best solution for most applications. Our pump seal integration provides perfect conditions for the seal.

Easy to service

The back-pull out design permits rotor removal without disturbing the connecting pipe work or drive motor. The Sulzer lifting arm is also useful when servicing the pumps. Normally, one man can service a FR pump station.

Clean environment for servicing

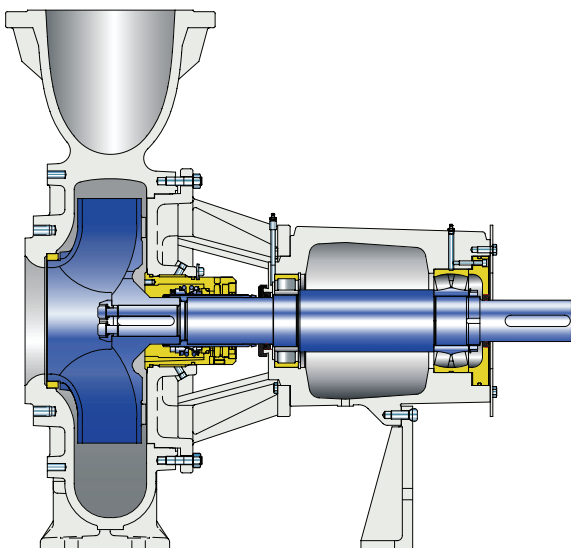
Low vibration levels mean quiet pump operation. The risk of leakage is minimal because of the long-life shaft sealing, which when combined with dry pit installed pumps gives clean working environment, which is not affected by the sealing liquid.

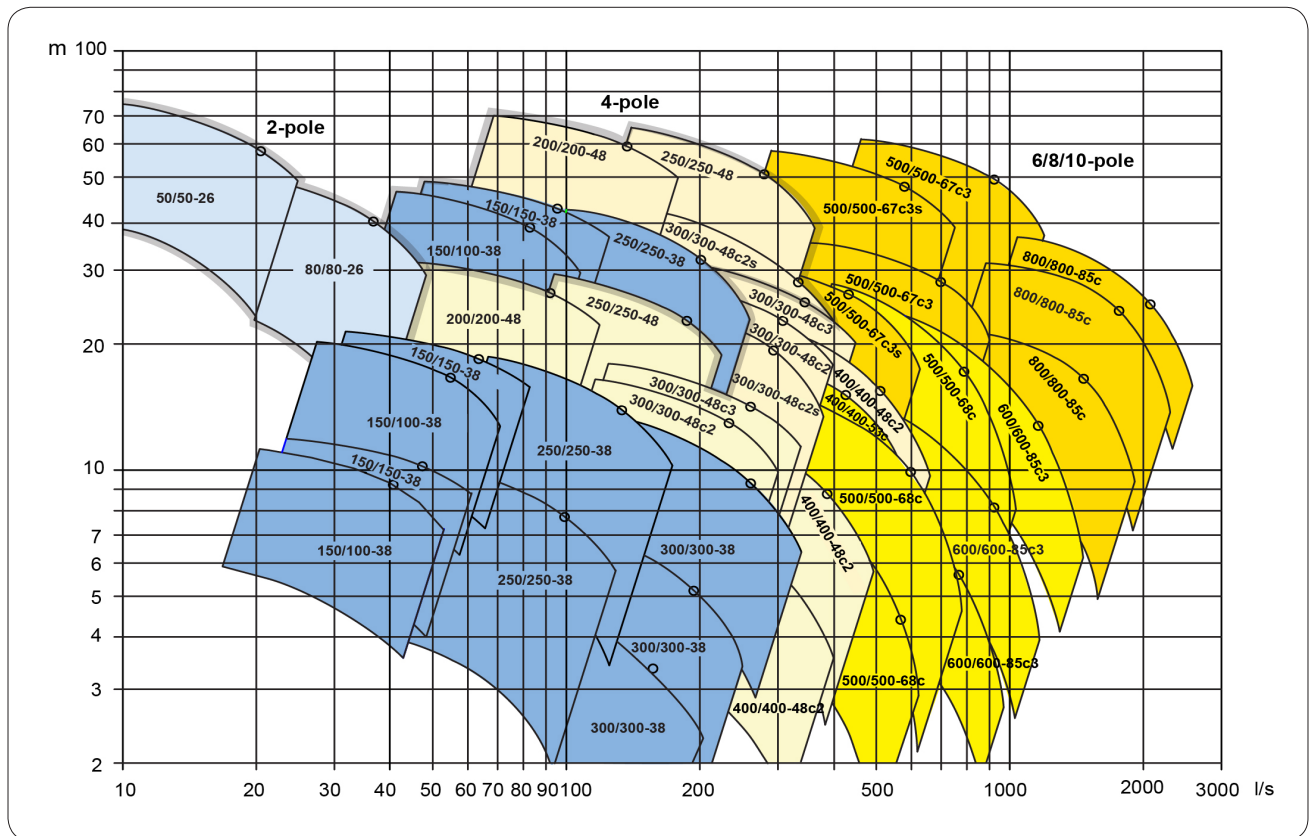
Properties

Flow	1-9000m ³ /h
Head	2-80 m
Temperature	Max. 80°C
Pressure rating	PN4, PN6 and PN10
Flanges	ISO 7005 PN10/PN16
Lubrication	Grease or oil

Your benefits

- High Reliability
- Large Solids Passage
- High Efficiency
- Easy to Service
- Clean Environment for Servicing





Type designations

FR 150/100-38

FR	Pump series
150	Inlet dia. (mm)
100	Outlet dia. (mm)
-38	Impeller dia. (cm)

Material

Sulzer material	ABS material
Grey cast iron A48 CL 30 B	EN-GJL-200
Carbon steel C45E+QT	C45E
Duplex steel EN 1.4460	1.4460 (Wrought)
Duplex steel A890 3A	SS 2324 (Cast)
Mart. stainless steel EN 1.4057	1.4057 (Wrought)

Material codes

Material code	01	03*	05*
Pump casing	Grey cast iron A48 CL 30 B	Grey cast iron A48 CL 30 B	Grey cast iron A48 CL 30 B
Impeller	Grey cast iron A48 CL 30 B	Duplex steel A890 3A	Duplex steel A890 3A
Wear disc/wear ring	Grey cast iron A48 CL 30 B	Grey cast iron A48 CL 30 B	Duplex steel A890 3A
Lantern/cover	Grey cast iron A48 CL 30 B	Grey cast iron A48 CL 30 B	Grey cast iron A48 CL 30 B
Shaft sleeve 5R, 5F and 6F	Duplex steel EN 1.4460	Duplex steel EN 1.4460	Duplex steel EN 1.4460
Shaft extension for bear. assy. 3R, 4R	Mart. stainless steel EN 1.4057	-	-
Shaft for bear. assy. 3R, 4R, 5R	Carbon steel C45E+QT	Carbon steel C45E+QT	Carbon steel C45E+QT
Shaft for bear. assy. 5F and 6F	Duplex steel EN 1.4460	Duplex steel EN 1.4460	Duplex steel EN 1.4460

*) Only for size -48 and larger.



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