

# TeknoFluida

Your Solutions Partner for  
Fluid Technology

## FLUSHING UNIT

TeknoFluida provides reliable flushing system for hydraulic, electrohydraulic, lubrication, and insulating oil (new and existing system).

### TFU 200/250/500 Series

Utilized for Following  
Applications:

Pulp and Paper  
Steel Work  
Cement  
Power Generation  
General Industries



# TeknoFluida

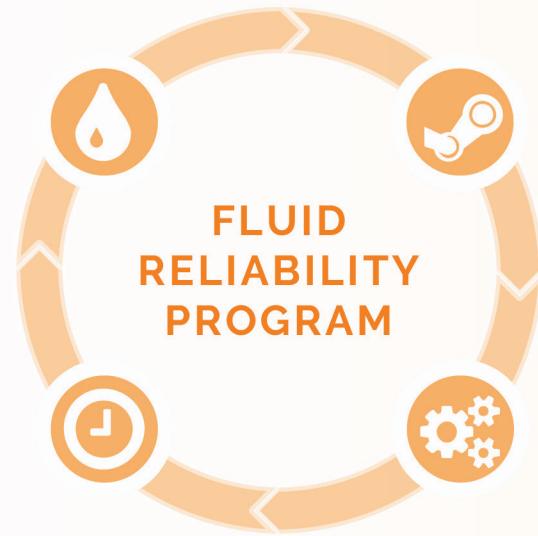
## Flushing Unit



### Technical Specification

Unit types	TFU-200	TFU-250	TFU-500
Flow rates	200 l/min	250 l/min	200 l/min
Permitted fluids**	Fluids compatibility: ⌘ Mineral oils ⌘ Synthetic oil / phosphate ester ⌘ Insulating oil (transformer oil) ⌘ Other fluids		
Sealing material	NBR or Viton		
Filtration rating	3 µm	6 µm	10 µm
Pump type	Gear pumps and vane pump		
Operating pressure	up to 60 bar		
Permitted pressure at suction port (with suction hose)	-0.2...+1 bar		
Operation viscosity range*	4...3000 mm <sup>2</sup> /sec (with heater)		
Fluid temperature range*	20...60 °C		
Ambient temperature range*	10 - 40 °C		
Storage temperature range*	10 - 50 °C		
Heater power	15 kW/43A		
Power consumption	30 kW/83A	37 kW/105A	59 kW/160A
Voltage source	380 VAC/50 Hz		
Accessories	Automatic Particle Counter (TFC-1500)		
Hoses material	NBR (other on request)		
Inlet port	G3/4"	G3/4"	G3/4"
Outlet port	G1 1/2"	G1 1/2"	G1 1/2"
Weight (empty)	~ 400 kg	~ 500 kg	~ 850 kg
Dimensions** (L x W x H)	1950 x 1810 x 1500	1950 x 1810 x 1500	1950 x 1810 x 1500

\*For other fluids, temperature, viscosities ranges and properties, please contact us



### Product Description

Flushing Unit removes heavy and fine solid particulates from existing system or new installed system. The solid contaminant has a decisive impact on the ageing behavior of power transformers and increasing in wear concentration in the lubricant. The Flushing Unit (TFU) can remove those contaminant in highest rating possible to keep the system ready to be utilized.

This system is a tremendous solution for the filtration of existing system which can not be adequately filtered with a common filtering process. With TFU system the destructive effects of contaminant in power transformers can be avoided.

An initial cleaning process during commissioning of the system is the first important rule to avoid an early damage on hydraulic systems. Flushing, as an initial cleaning process, provides a great effect on the cleanliness and performance of the system through removing particle contaminant.

We provide the best customized design of flushing unit, with first-class functionality and cost effectiveness for your application. The contaminants are monitored directly, utilizing online condition monitoring sensor installed on board.

### Advantages

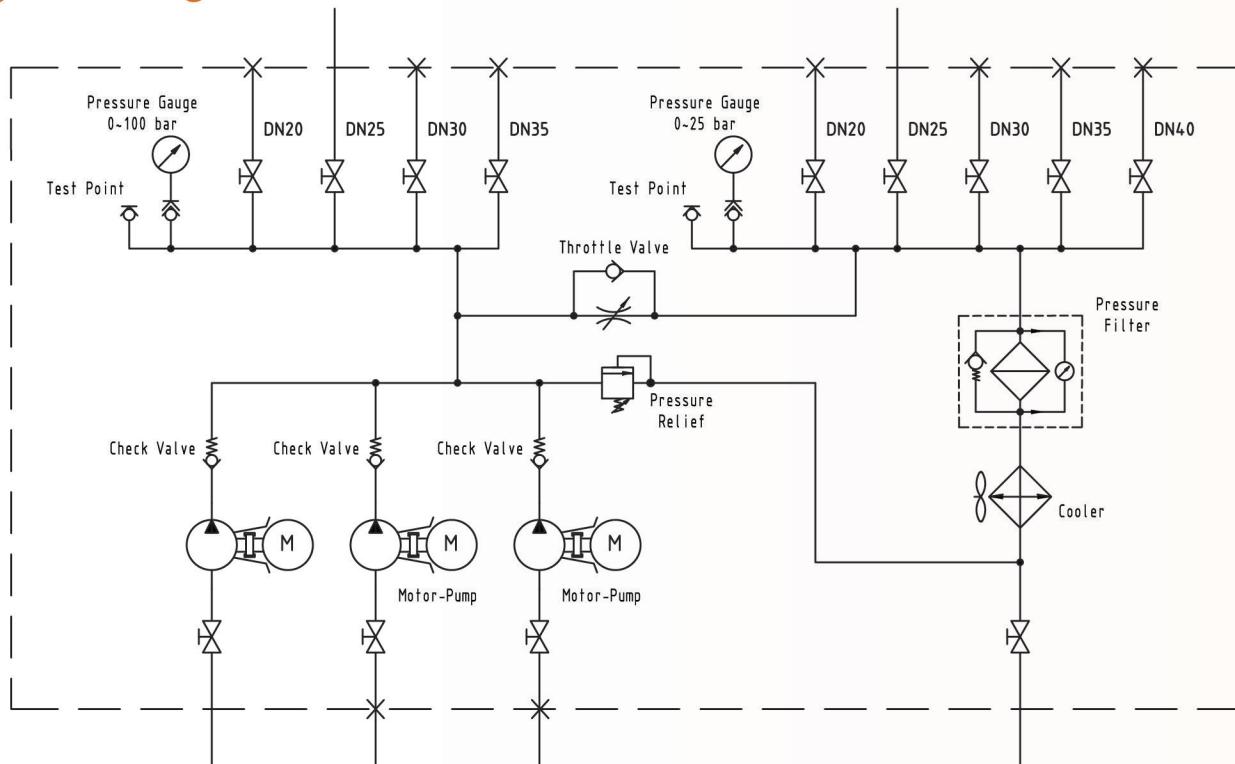
Flushing Unit process keep your existing or new system from heavy and fine solid particulates extremely low in order to obtain:

- ⌘ Optimum fluid lifetime
- ⌘ High quality protection of components
- ⌘ Desire machine operation
- ⌘ Minimize maintenance cost due to early failure

### Applications

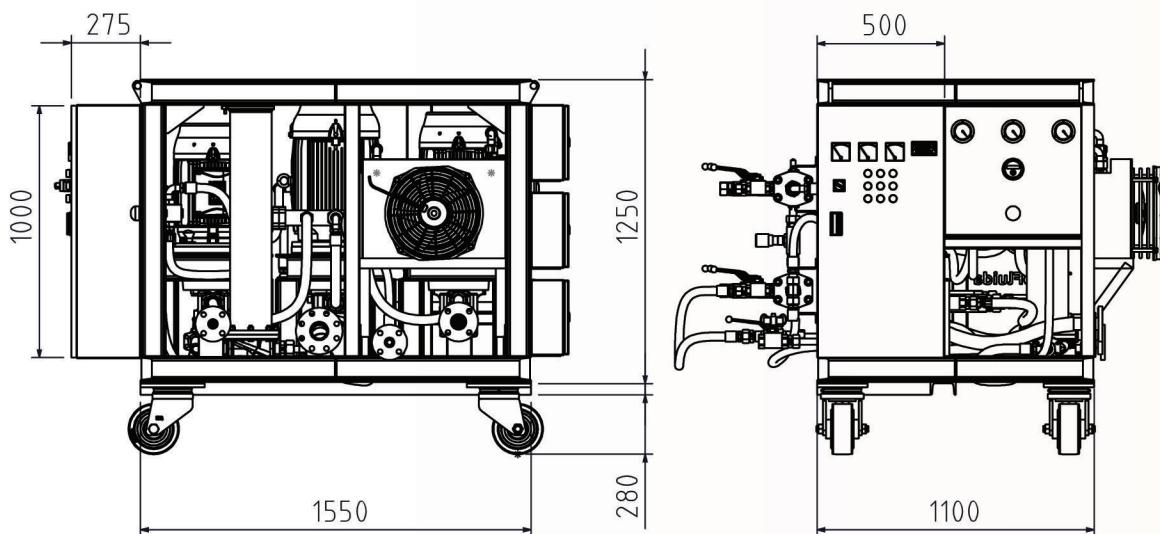
- ⌘ Industrial hydraulic and lubrication system
- ⌘ Steam turbine electro hydraulic control system
- ⌘ Insulating oil system
- ⌘ Slide bearing lubrication system

## System Diagram



## Working Principle

Dirty fluid is removed from surface system by higg flow of hot fluid via the suction hose and suction pipe utilizing the gear pump. The fluid then flows through the system and passing filter element. After the contaminated fluid being filtered, it can be pumped back through the pressure hose and pressure pipe which used to redo the cleaning process. A star-pleated filter element is mounted on a cylindrical support structure, whereby the filter rating is determined by the element type. The medium flows through the filter element from the outside to the inside. Solid particles are retained. The star pleat results in a larger effective filter surface. The process is a combination of high filtration efficiency and effective flushing mechanism.



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## Order Code

1	2	3	4	5	6	7	8
TFU	200	-	2X	/	20	-	10

### 1. Basic Model

S = stationary (with feet)

M = mobile with caster

### 2. Flow Rate\*

200 = 200 liter/min

250 = 250 liter/min

500 = 500 liter/min

### 3. Component Series

### 4. Pre-Filter

10 = 10 micron

20 = 20 micron

25 = 25 micron

### 5. Post Filter

3 = 3 micron

6 = 6 micron

10 = 10 micron

### 6. Sealing Material

N = NBR

F = FKM/Viton

### 7. Power Supply

01 = 3Phase; 380V; 50Hz

02 = 3Phase; 415V; 50Hz

### 8. Accesories

O = Standard without sensor

WP = Standard with automatic particle counter (TFC-1500)

SO = Special order

\*Other flow rate and information source please inform us



**TFC-1500**

## Filtering Result

In a hydraulic or lubrication system, filter main duty is to achieve a particle contamination to the required cleanliness level and keeping the level constantly during a long period. For identification of the solids contaminant in industrial hydraulic, the reading of particles quantity according to the ISO Code 4406. With the new definition of the test dust and number of particles, the standard ISO 4406 has been revised in 1987.

### Cleanliness Class According ISO 4406:1999

Filter Element	Cleanliness Class
2µm	13/11/08
3µm	14/12/09
6µm	16/13/10
10µm	17/15/11
16µm	20/17/12
25µm	23/19/13

This standard has been newly published as ISO 4406 in 1999. The new edition now uses a 3-digit code for particles > 4 µm(c), > 6 µm(c), and > 14 µm(c). The particle sizes > 6 µm(c) and > 14 µm(c) corresponds to approx. 0.9 µm referring to the obsolete. In the following, the achieved cleanliness class with MAHLE COMEX filter elements for all standardized ranges are stated. These values are based on long-term experiences with filter sizing and are considered as an approximate value.

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