



**DIPLOMATIC
HYDRAULICS**

95 110/102 ED



FST

SUCTION FILTER WITH SEALED FLANGE MOUNTING

SERIES 10

Q max (see performance ratings table)

OPERATING PRINCIPLE

Hexagonal head tie rod starting the exclusion valve

Filter element

Check valve to allow replacement of the filter element without emptying the tank

- FST filters are designed for sealed flange mounting. They are assembled directly on to the hydraulic power unit.
- They are aimed at protecting the pump from any possible gross contamination present inside the tank.
- The filter element is made of a metallic strainer with a 90 µm filtration degree, which grants a good pump protection without compromising the correct fluid flow. It can be easily replaced without emptying the tank. See par. 6 for its identification code.
- The filters are designed with a SAE flange port with the exception of the smallest size, which uses a BSP threaded port.
- All the FST filters are designed to incorporate an electric or visual clogging indicator, to be ordered separately (see par. 5).

TECHNICAL SPECIFICATIONS

Filter code	Port dimensions		Mass [kg]	Rated flow (indic.) [l/min]	Rated filtration degree [µm]
	BSP	SAE flange			
FST-TB114	1 1/4"	-	1.6	70	90
FST-FS212	-	2 1/2"	3.0	100	
FST-FS300	-	3"	13.0	200	
FST-FS400	-	4"	16.0	300	

NOTE 1: The flow rates stated in the table correspond to a 0.02 bar pressure drop measured with mineral oil of viscosity 36 cSt at 50°C.
As for a different viscosity range, see NOTE 2 - par. 2.2.

Collapsing differential pressure of the filter element	bar	1.0
Ambient temperature range	°C	-25 ÷ +50
Fluid temperature range	°C	-25 ÷ +110
Fluid viscosity range	cSt	2.8 ÷ 380

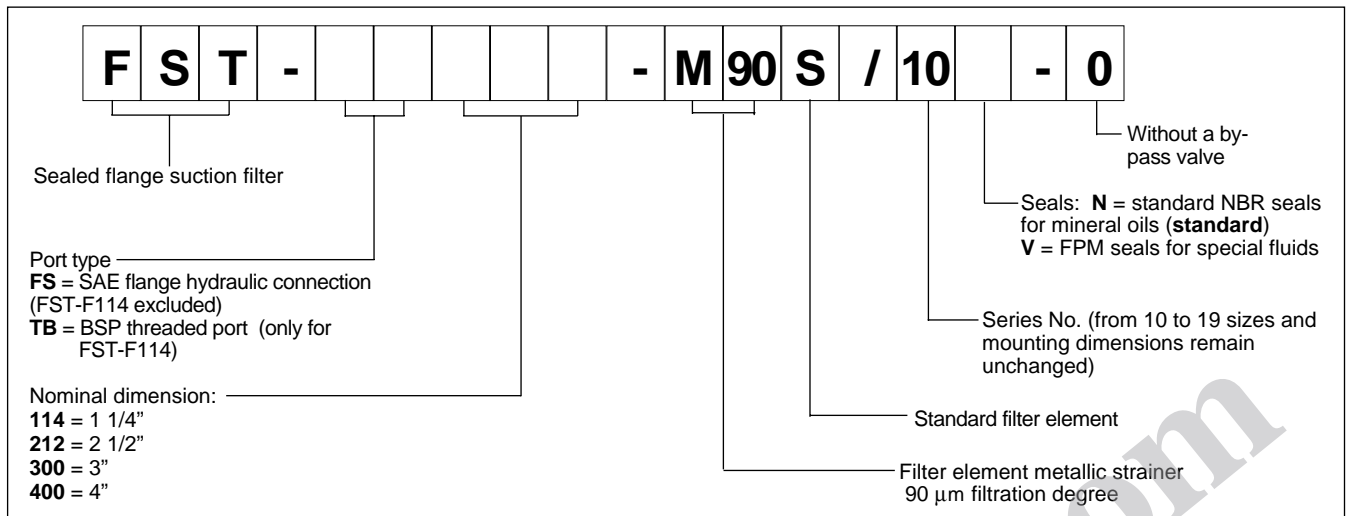
HYDRAULIC SYMBOL

Filter with indicator VS type

Filter with indicator ES type

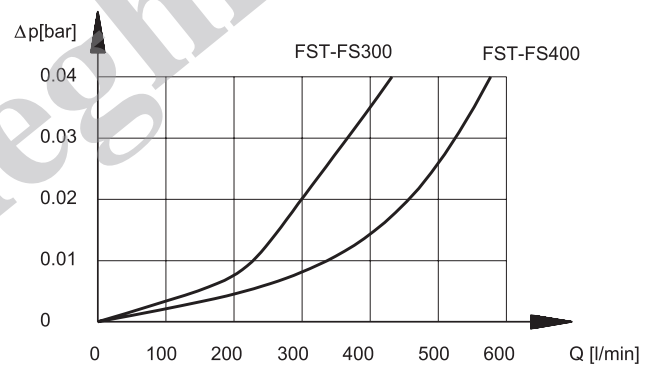
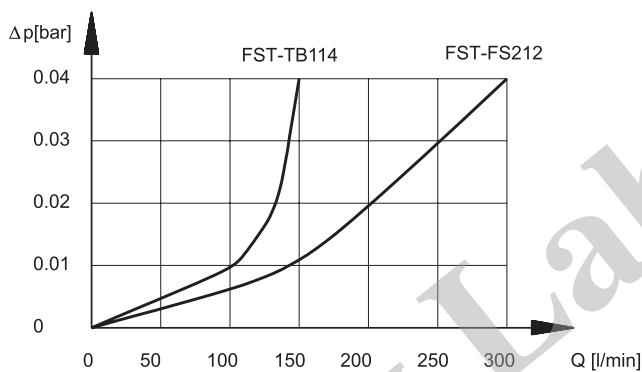


1 - IDENTIFICATION CODE

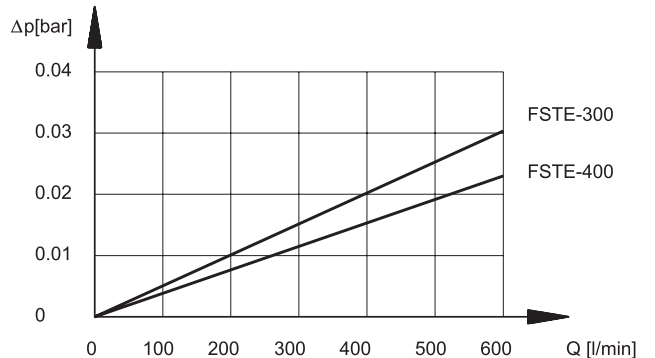
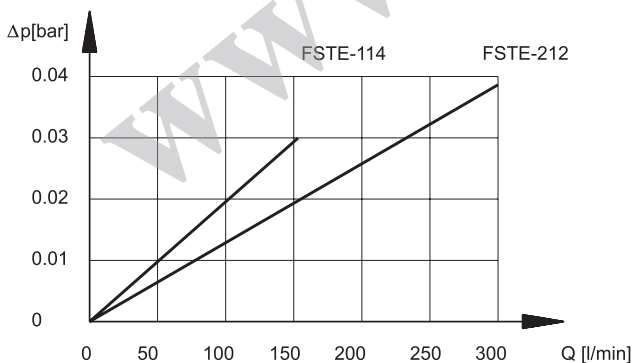


2 - CHARACTERISTIC CURVES (values measured with viscosity of 36 cSt at 50°C)

2.1 - Pressure drops through the filter body



2.2 - Pressure drops through the FSTE filter element



NOTE 2: The filter size has to be selected so that with the nominal flow rate the pressure drop is lower than 0.02 bar.

The total pressure drop through the filter is given by adding the body pressure drop values to those of the filter element.

As for fluids whose viscosity degree at a specific operating pressure is different from 36 cSt, the filter total pressure drop has to be changed according to the following ratio:

$$\text{total } \Delta p \text{ value} = \text{body } \Delta p \text{ value} + (\text{real } \Delta p \text{ value of the filter element} \times \text{real viscosity value (cSt)} / 36)$$

$$\text{real } \Delta p \text{ value of the filter element} = \text{value obtainable through the diagrams in par. 2.2}$$

Such ratio is valid for a viscosity value up to 200 cSt.

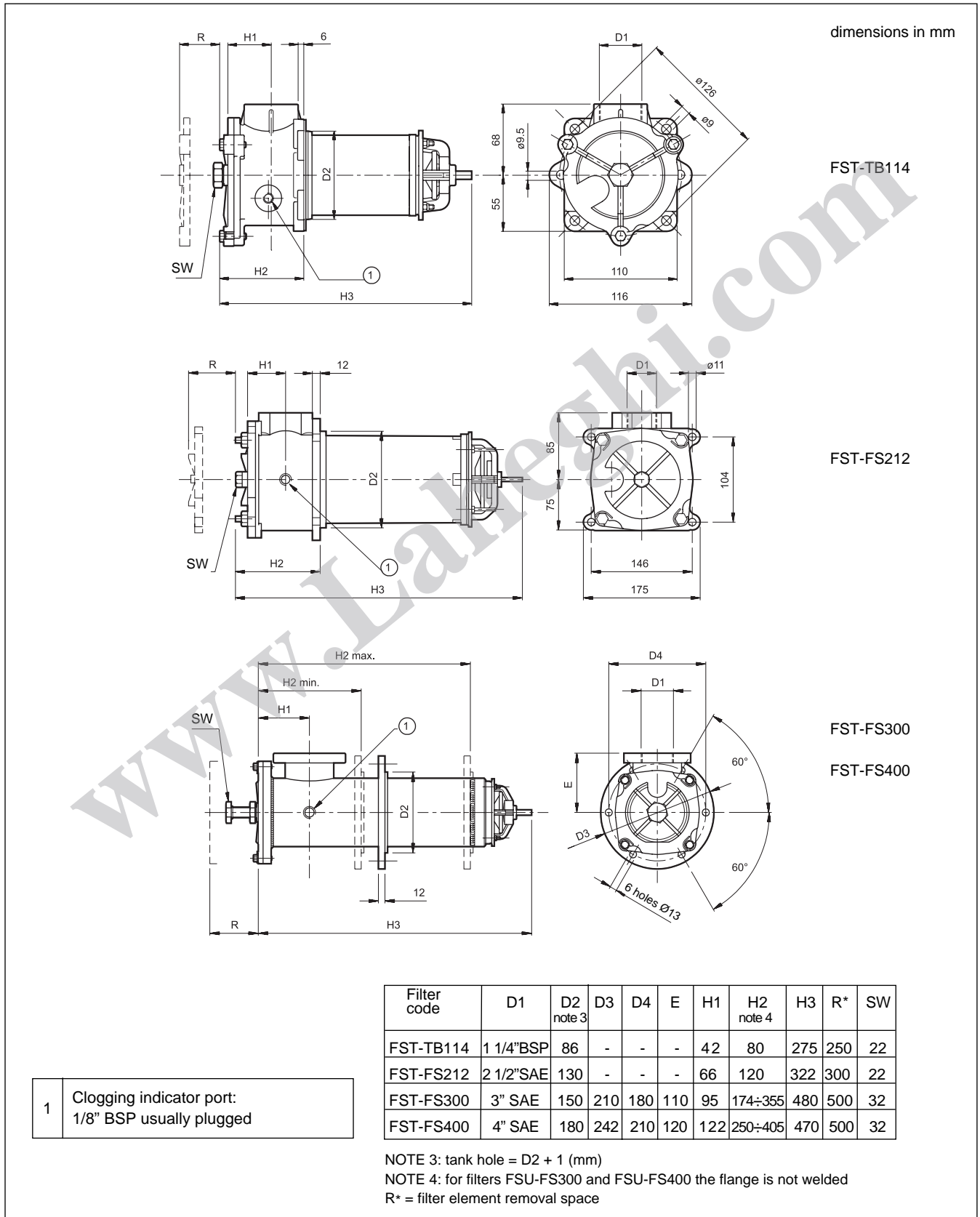
For a higher viscosity please consult our technical department.



3 -HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids type HL and HLP according to ISO 6743/4.
For use with other types of fluids such as HFA, HFB, HFC, HFD, please consult our technical department.

4 - OVERALL AND MOUNTING DIMENSIONS



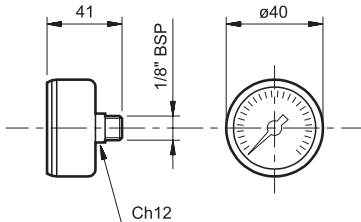


5 - CLOGGING INDICATORS

The filters are designed to incorporate clogging indicators, which have to be ordered separately.

5.1 - Visual indicator for suction filters

Identification code: VS/10

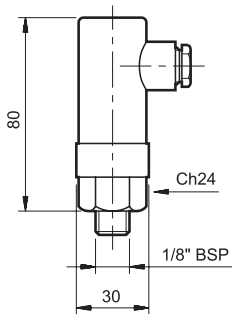


This indicator is a vacuum gauge sensitive to the suction depression. The indicator is supplied with a 0 ÷ -1 relative bar graduated scale and with a three-colour reading scale, which informs you about the clogging condition of the filter element:

- GREEN: efficient filter element (0 ÷ - 0.15 bar)
- YELLOW: the filter element is wearing out (- 0.15 ÷ - 0.25 bar)
- RED: the filter element has to be replaced (> - 0.25 bar)

5.2 - Electric indicator for suction filters

Identification code: ES/10



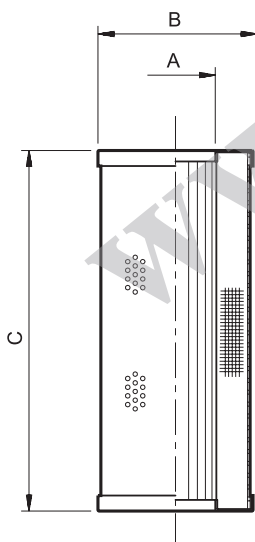
This indicator is a vacuum gauge sensitive to the suction depression, which operates by switching an electric contact when the filter element has reached the clogging limit.

With an efficient filter, the contact is normally closed.

TECHNICAL SPECIFICATIONS

Operating pressure	bar	- 0.3
Max. functioning voltage	V	220 50/60 Hz
Max. load on the contacts	resistive	0.5
	inductive	0.25
Max. commutable power	VA	100
Class of protection according to IEC 144 Atmospheric agents		IP65

6 - FILTERING ELEMENTS



FILTER ELEMENT IDENTIFICATION CODE

F S T E - [] [] - M 90 S / 10

Filter element for a FST filter

Nominal dimension
114 = 1 1/4" **300** = 3"
212 = 2 1/2" **400** = 4"

Filter element metallic strainer
 90 µm filtration degree

Series No. (from 10 to 19 sizes and mounting dimensions remain unchanged)

Standard filter element

Filter element code	ØA	ØB	C	Average filter surface [cm ²]
FSTE - 114	29.5	70	163	1600
FSTE - 212	65	99	198	1845
FSTE - 300	65	99	375	3545
FSTE - 400	93	136	375	5065



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