

## Data sheet

# Oil Pump type BFP 20/21 - size 3 and 5

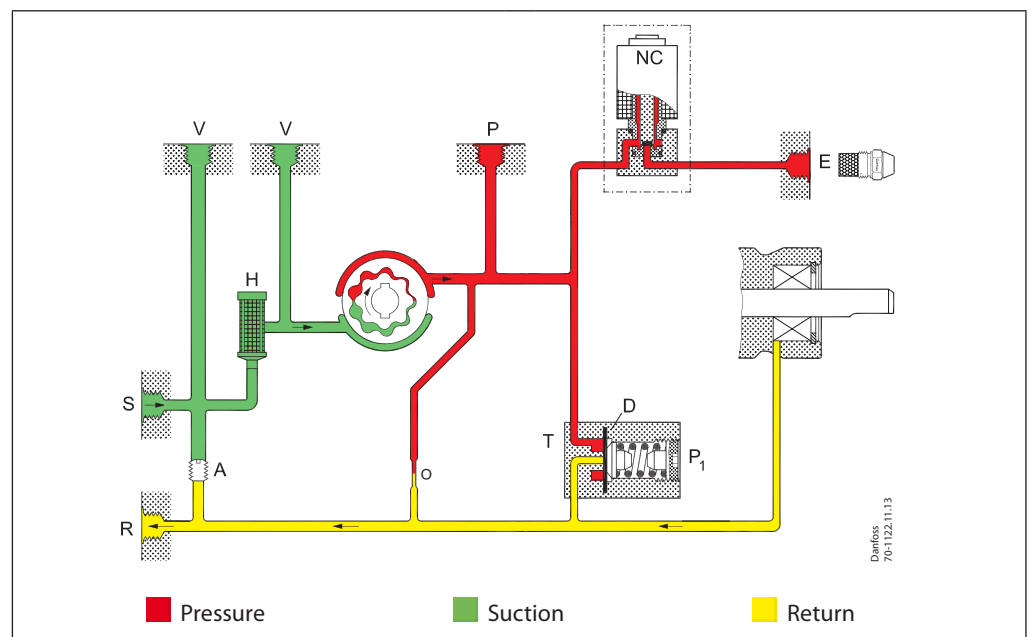
## Application

BFP 20/21 sizes 3 and 5 oil pumps are designed for small/medium-sized domestic oil burners up to 42 l/h.

## Features

- Light oil and kerosene
- 1 or 2-pipe operation
- 1-stage
- Built-in pressure regulator
- Solenoid valve cut-off (BFP 21)
- Cartridge filter

## Function



From the suction inlet (S) oil is drawn through the filter (H) to the gear set, where the pressure is increased. When voltage is applied to the NC-valve, it opens and releases oil to the nozzle outlet.

By means of the diaphragm (D) in the pressure regulator (T), the pressure is kept constant at the value set on adjustment screw (P1).

In 2-pipe systems the excess oil is led back to the return outlet (R) and the tank.

In 1-pipe systems with plugged return outlet (R) and screw (A) removed, the oil is returned internally to the gear set (see details in figure).

### Cut-off function, solenoid valve (BFP 21)

When the burner stops, the voltage to the NC-valve is cut off and the oil flow to the nozzle outlet is cut off immediately.

BFP 20 has no solenoid valve. In systems using this pump, a separate cut-off valve must be fitted in the nozzle line.

### Bleeding

In 2-pipe systems the pump is self-priming, i.e. bleeding is performed via the constriction (O) to the return outlet (R).

In 1-pipe systems with plugged return outlet (R), bleeding must be performed through the nozzle outlet (E) or the pressure gauge port (P).

### Warranty

For pumps used outside the stated technical data and used with oil containing abrasive particles Danfoss cannot give any warranty.

### Note!

Do not mount the pump with the solenoid valve pointing downwards.

The solenoid valve must be replaced after 250.000 operations or 10 years (approved life expectancy).

# Identification

BFP	2	1	L	5	L	
						R: right hand nozzle outlet L: left hand nozzle outlet
						3: capacity 24 l/h 5: capacity 42 l/h
						R: clockwise rotation L: counter-clockwise rotation
						0: without solenoid valve 1: with one solenoid valve
						2: cartridge filter, pressure adjustment on front

Nozzle capacity at 4.3 cSt., 10 bar, 2800 min<sup>-1</sup>

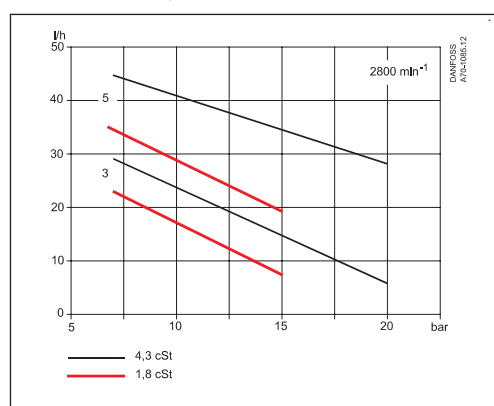
# Technical data

BFP 20/21	3	5
Oil types	Standard fuel gas oil and fuel gas oil acc. to DIN V 51603-6 EL A Bio-10 (max. 10% FAME)	
Viscosity range (measured in suction inlet) <sup>1)</sup>	(1.3) 1.8 to 12.0 cSt. (mm <sup>2</sup> /s)	
Filter area / mesh	11 cm <sup>2</sup> /200 µm	
Pressure range <sup>2)</sup>	7 to 20 bar	
Default setting	10 ±1 bar	
Max. pressure in suction inlet/return outlet	2 bar	
Speed	2400 to 3450 min <sup>-1</sup>	1400 to 3450 min <sup>-1</sup>
Max. starting torque	0.1 Nm	0.12 Nm
Ambient/transport temperature	-20 to +70° C	
Temperature of medium	0 to +70° C	
Coil power consumption	9 W	
Rated voltage (other voltages on request)	230 V, 50/60 Hz	
Coil enclosure	IP 40	
Shaft/neck	EN 225	

<sup>1)</sup> Special pumps for Kerosene

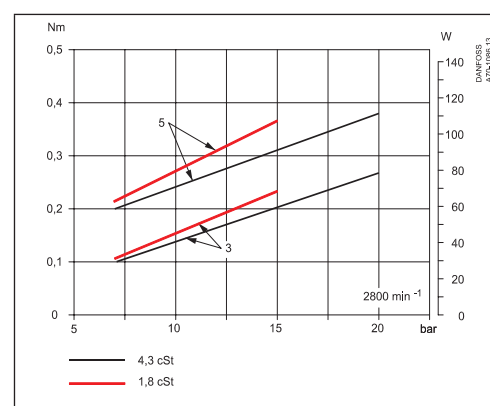
<sup>2)</sup> Max. 12 bar at 1.3 cSt., max. 15 bar at 1.8 cSt.

## Nozzle capacity



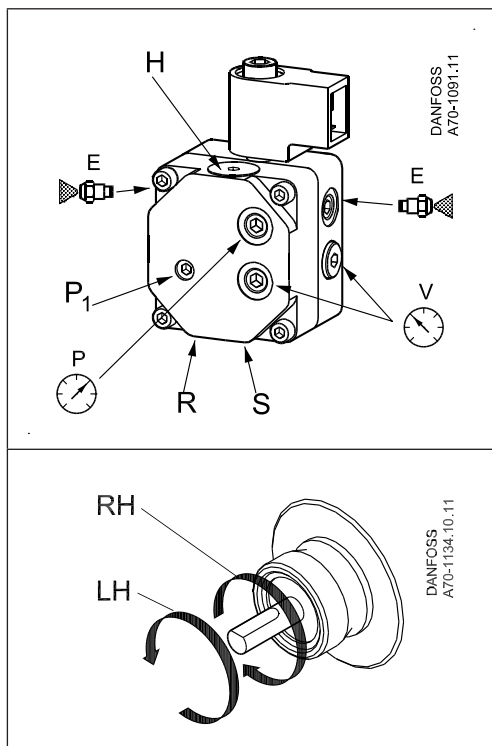
## Operating torque

## Power consumption



## Connections

Example shows BFP 21 L5L

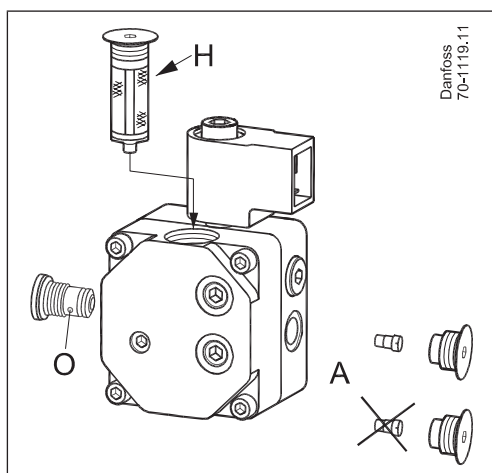


- P<sub>1</sub>:** Pressure adjustment
- S:** Suction inlet G1/4
- R:** Return outlet G1/4
- E:** Nozzle outlet G 1/8
- P:** Pressure gauge port G 1/8
- V:** Vacuum gauge port G 1/8
- H:** Filter

*Note! Shaft rotation, location of nozzle outlet and other connections are seen from shaft end.*

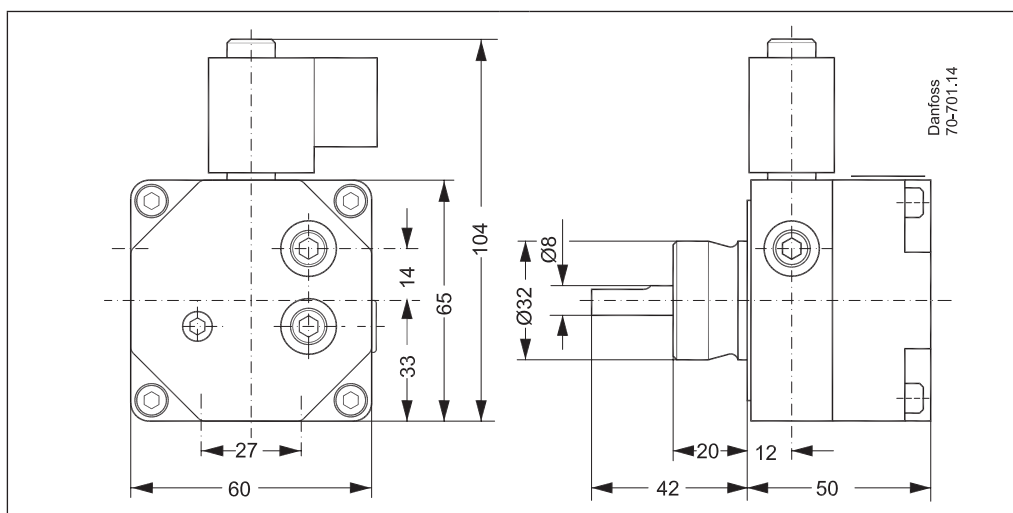
- RH:** R-rotation
- LH:** L-rotation

## Change-over and Filter Replacement



- H:** Filter
- A:** 2-pipe operation, with screw  
1-pipe operation, without screw

## Dimensions





Additional documentation on burner components is available on <http://heating.danfoss.com/>

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