

Burner fuel pump type BFP

Catalogue

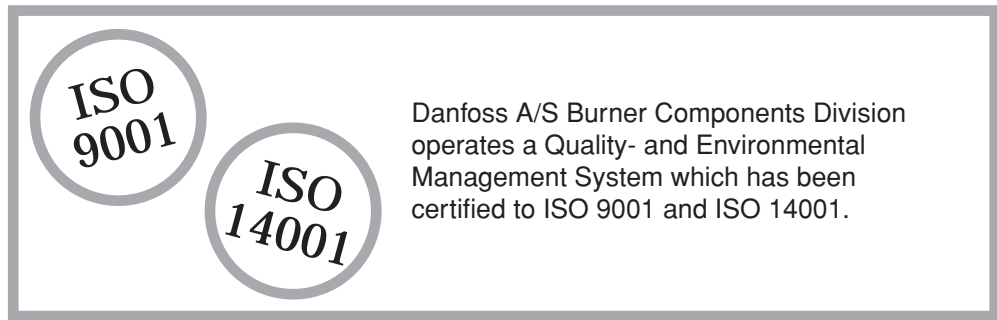
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Contents

Application	page 2
Type system	page 2
Build up	page 3
Function	page 4
Technical data	page 5
Nozzle capacity and operating torque	page 5
Dimensions	page 6
Connections	page 7
Accessories	page 8
Spare parts / Dimensions for bush and flange	page 8

Quality- and Environmental Management System



Application

BFP pumps are for burners with capacities up to 400 kW. The size and weight of the pumps makes them particularly suitable on small domestic burners where space is restricted. BFP pumps are of course also very suitable as replacement units for existing systems.

To meet different requirements as regards location on burners, space restrictions on boiler units, and port positions, the BFP series consists of different types and offers the possibility of building up variants of each type.

The BFP-system ensures easy and simple filter change during servicing. Because of the options available from the system, adjustment and measuring of nozzle pressure and suction pressure are easy.

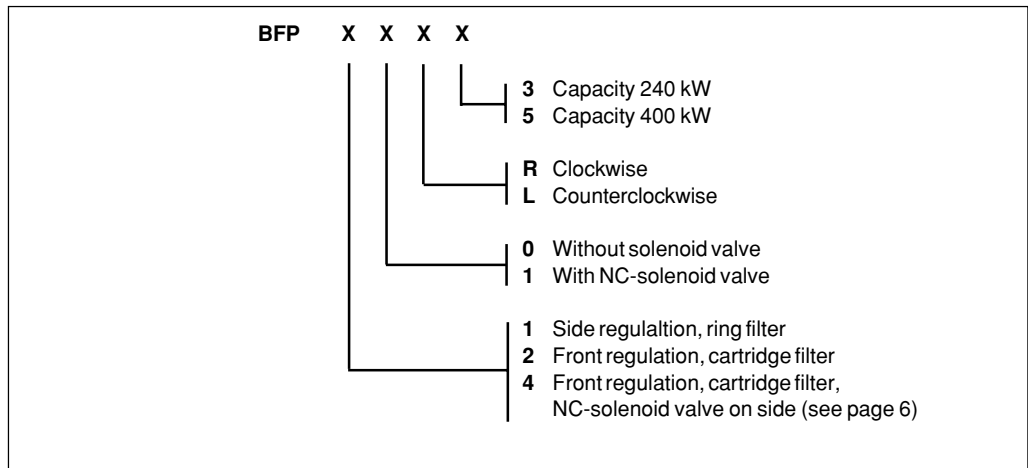
The BFP-pump are available in two different sizes with following nozzle capacity at 10 bar, 4.3 mm²/s and 2800 min⁻¹.

- Type 3 with an output up to 240 kW
- Type 5 with an output up to 400 kW

BFP pumps can be used on both 1-pipe and 2-pipe systems with either overlaying or underlying tank.

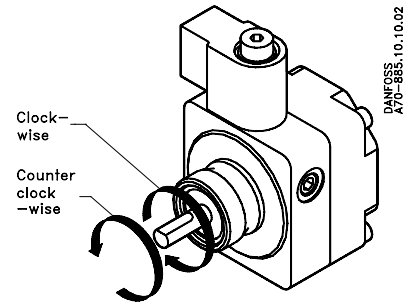
An explanation of the pump types is given below!

Type system



Note!
Clockwise and counterclockwise indication is always given when looking on the shaft end.

- This applies to:**
- Direction of rotation
 - Location of valve
 - Connections

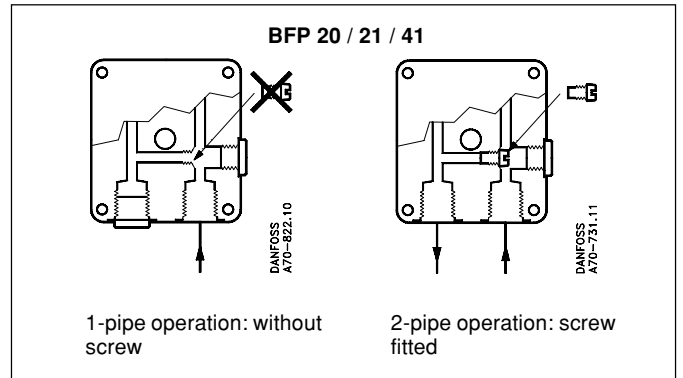
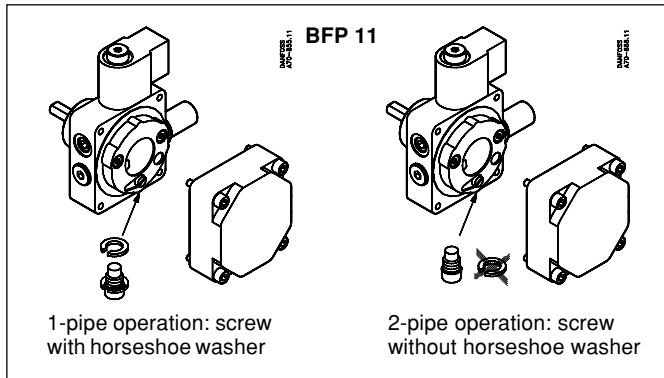


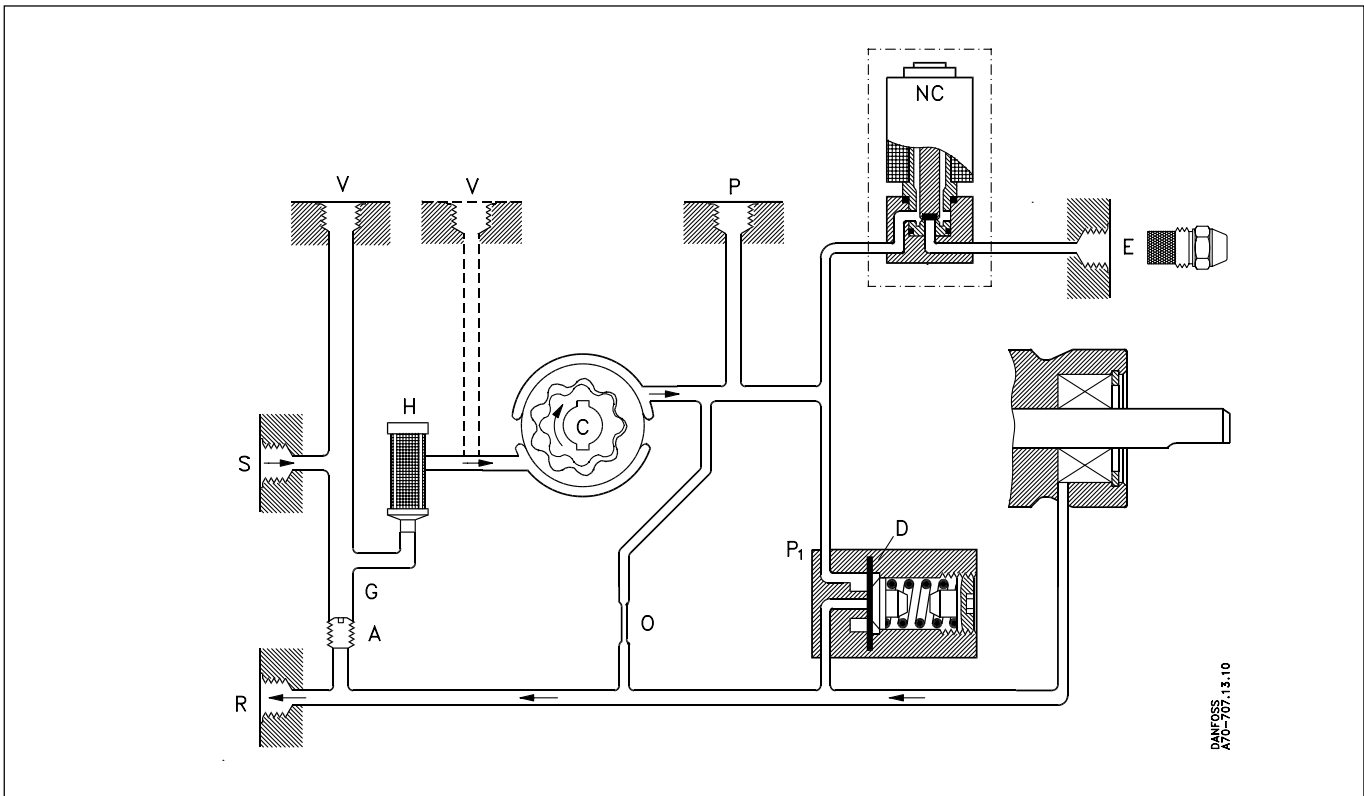
Build up

The pump is designed to give a wide choice of pump build-up, i.e. location of regulating system, solenoid valve location, port positions (see page 6).
The pump gear wheel set is our well known trochoide gear wheel. As with the BFP-types, they are now in a specially designed recess in the pump housing. This ensures optimal positioning of the gear wheel set and therefore minimum wear.
The regulating system is based on the diaphragm principle.

The shaft gland is our familiar carbon ring type which gives max. protection against leaking oil, both with dynamic and static load.
The pump pressure range depends on the pump type, see technical data.
The solenoid coils are supplied for plug connection.
The pump is equipped with a manual changeover screw for changing between 1-pipe and 2-pipe operation.

Conversion between 2- and 1-pipe operation





Function

When the oil pump is started, oil is sucked into the suction port (S), through the filter (H) to the inlet side of the gear set. The gear set then pumps the oil to the pressure side of the pump, simultaneously subjecting the oil to pressure. This pressure is controlled and kept constant by setting the regulating valve (P₁) by means of the diaphragm (D). The regulating valve (P₁) distributes the oil delivered by the gear set (C), between the nozzle port (E) and the return side (R) of the pump. The amount of oil used is determined by the set pressure on the regulating valve (P₁) and the size of the oil nozzle fitted on the oil nozzle line.

Pressure regulating valve P₁

The valve (P₁) functions in the following manner:

- When the oil opening pressure has been reached, flow to the return side is established.
- The diaphragm and spring maintain a constant pump pressure as set on the regulating valve.
- If the pump is overloaded, i.e. when trying to obtain more oil than the gear wheel set can supply under these conditions the oil pressure falls below the set value and the diaphragm valve (D) closes the return side (R).

This can be remedied by:

- Reducing the pump pressure.
- Reducing the output, i.e. changing to a smaller nozzle.
- Changing to a pump with a higher output.

Solenoid valve (NC)

When the shut-off valve (NC - normally closed) is energised, it opens for oil flow to the nozzle (E). Excess oil is led from the regulating valve to the return side (R) of the pump.

When the oil burner stops operating, the shut-off valve is de-energised and stops the oil supply to the nozzle.

BFP 20 does not have a built-in solenoid valve. In systems utilising this pump, a shut-off valve must be fitted in the nozzle line.

1 - 2-pipe systems

In 2-pipe systems, the oil is diverted back to the oil tank.

In 1-pipe systems, the 2-pipe screw (A) must be removed to allow the oil to recirculate through the return (G). The return port (R) must be blanked off.

On BFP 20, 21 and 41, the 2-pipe screw is removed through the vacuum port on the left side. On BFP 11, a horseshoe-formed washer must be fitted under the lower screw in the cover plate, see page 3.

Bleeding

In 2-pipe systems the pump is automatically bled. Air is led through the constriction (O) to the tank.

In 1-pipe systems where the return port is closed, bleeding must be through port P (P).

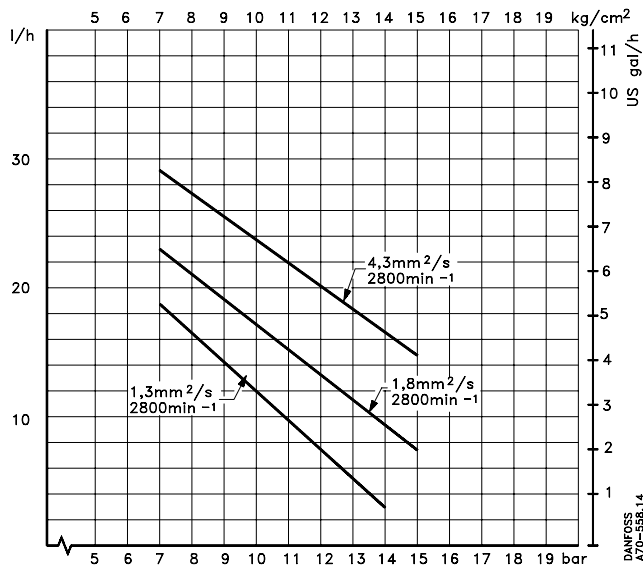
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Technical data

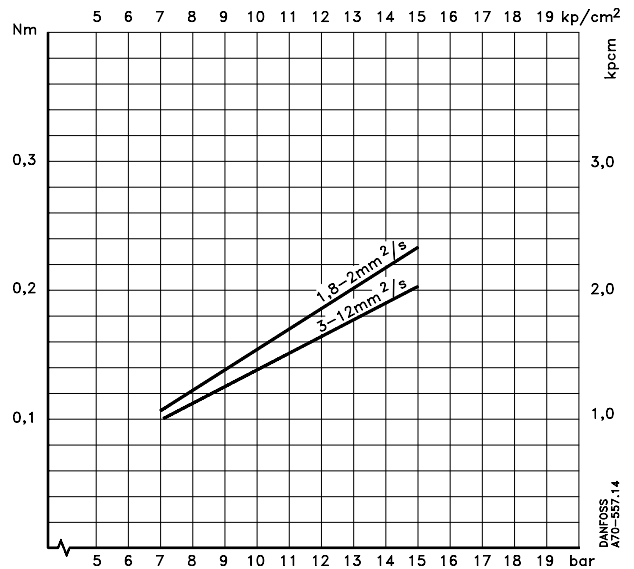
		BFP 20		BFP 11		BFP 21/41	
		3	5	3	5	3	5
Oil types: Viscosity measured in suction port		mm ² /s		1.3-12.0			
Cartridge filter	Filter area	cm ²		11		11	
	Mesh	µm		200		200	
Ring filter	Filter area	cm ²		13			
	Mesh	µm		200			
Gear wheel capacity *)		l/h		45	70	45	70
Max. starting torque		Nm		0.1	0.12	0.1	0.12
Pressure range diaphragm 1-pipe		bar		7-20		7-20	
Pressure range diaphragm 2-pipe		bar		7-20		7-20	
Factory setting		bar		10 ± 1			
Max. permissible pres. on suction/return side		bar		2.0			
Speed		min ⁻¹		Type 3: 2400-3600 min ⁻¹ Type 5: 1400-3600 min ⁻¹			
Power consumption *)		Max. watt		40	70	40	70
Ambient and transport temperature		°C		-20 to +70			
Media temperature		°C		0 to +70			
Coil operating range		V		187-264			
Coil consumption		Watt		9			
Rated voltage				220/240 V 50/60 Hz			
Coil, grade of enclosure				IP 40			
Shaft / Neck				EN 225			

*) 10 bar, 4.3 mm²/s and 2850 min⁻¹

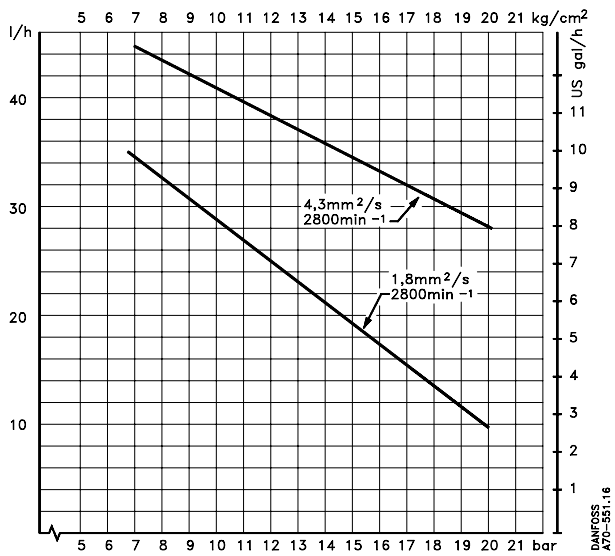
Nozzle capacity BFP type 3



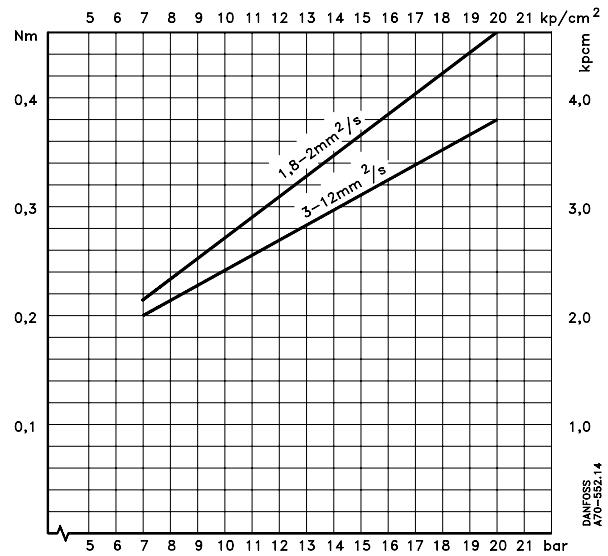
Operating torque BFP type 3



Nozzle capacity BFP type 5

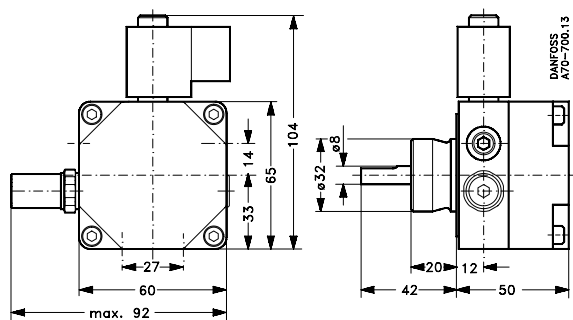


Operating torque BFP type 5

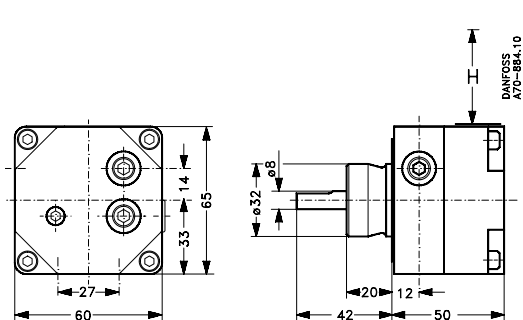


Dimensions

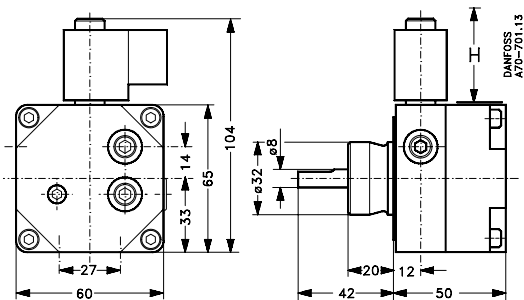
BFP 11 with side regulation



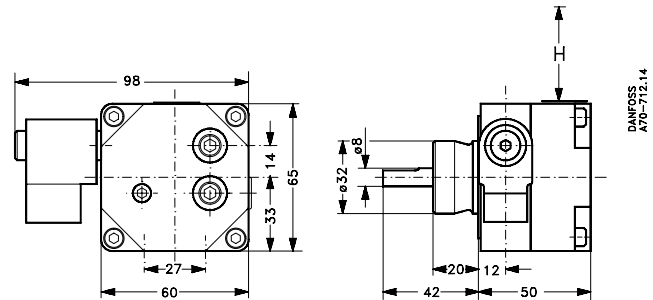
BFP 20



BFP 21 with front regulation



BFP 41 with front regulation and NC valve on the side



In order to change the cartridge filter a free height H of min. 45 mm is required.

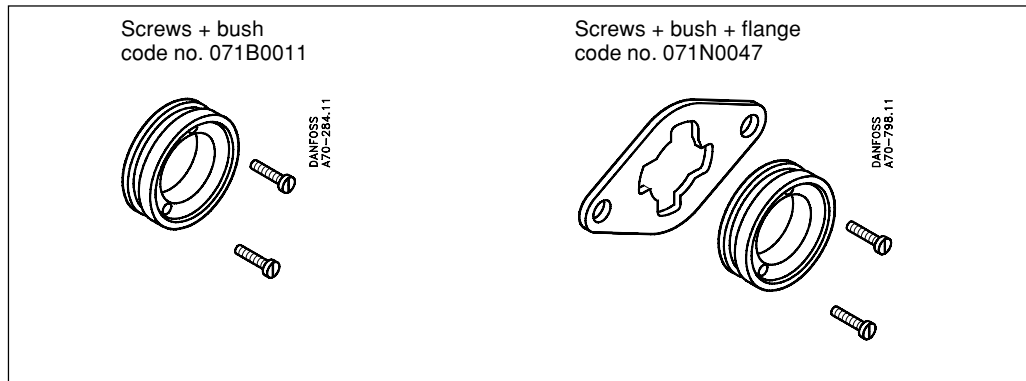
Connections

<p>BFP 11 with right side regulation</p>		<p>P₁ Pressure regulation S Suction line G 1/4 P Return line G 1/4 Nozzle connection left G 1/8 Pressure gauge connection right G 1/8 Vacuum meter connection G 1/8</p>
<p>BFP 11 R with left side regulation</p>		<p>P₁ Pressure regulation S Suction line G 1/4 P Return line G 1/4 Nozzle connection G 1/8 Pressure gauge connection G 1/8 Vacuum meter connection G 1/8</p>
<p>BFP 20 with front regulation</p>		<p>P₁ Pressure regulation S Suction line G 1/4 P Return line G 1/4 Nozzle connection left G 1/8 (alternative right) Pressure gauge connection in front G 1/8 (alternative left) Vacuum meter connection G 1/8 F Cartridge filter</p>
<p>BFP 21 with front regulation</p>		<p>P₁ Pressure regulation S Suction line G 1/4 P Return line G 1/4 Nozzle connection left G 1/8 (alternative right) Pressure gauge connection in front G 1/8 (alternative left) Vacuum meter connection G 1/8 F Cartridge filter</p>
<p>BFP 41 with front regulation</p>		<p>P₁ Pressure regulation S Suction line G 1/4 P Return line G 1/4 Nozzle connection left G 1/8 Pressure gauge connection in front G 1/8 Vacuum meter connection G 1/8 F Cartridge filter</p>

Note! With all connections it is possible to choose between using flat washers in connection with the recessed bearing surface or at the bottom of the port in question. This,

however does not apply to the vacuum measuring port on the housing side. Here, it is only possible to use the external surface on the housing.

Accessories



Spare parts

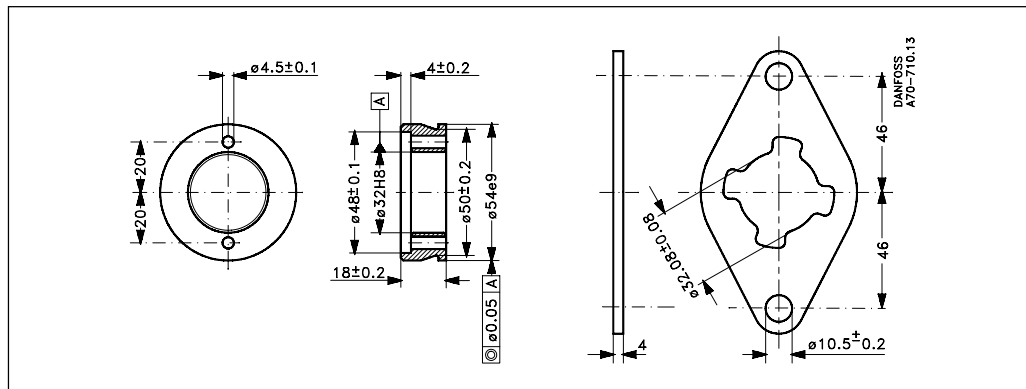
	Code number
Cable	See below
Coil 220/240 V a.c. 50/60 Hz + lockwasher + nut	071N0010
Coil 110/120 V a.c. 50/60 Hz + lockwasher + nut	071N0061
Coil 24 V a.c. 50/60 Hz + lockwasher + nut	071N0062
Filter set: filter + O-ring (25 pcs box)	071N0063
Cartridge filter + O-ring (25 pcs box)	071N0064
NC-valve + lockwasher + nut	071N0050
Filter plug (10-off pack)	071N0074
Changeover screw BFP 20, 21 and 41	071N0041
Changeover washer BFP 11	071N0046

Coil cables

Standard cables

Valve type	Code no.	Length in mm
NC	071G0200	500
NC	071G0202	280
NC	071G0204	710

Dimensions, bush and flange



Suction line lengths:

See OEM-catalogue BK.18.A2.02 insert 1.

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