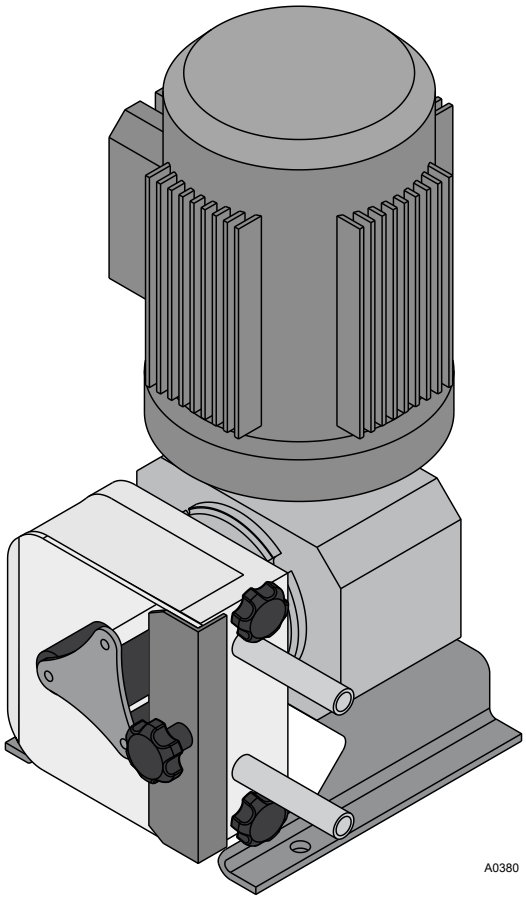
Assembly and operating instructions

DULCO®flex DFAa

Hose Pump



Please carefully read these operating instructions before use! · Do not discard!
The operator shall be liable for any damage caused by installation or operating errors!
Technical changes reserved.

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1 Introduction

These operating instructions provide information on the technical data and functions of the DULCO®flex DFAa series hose pump.

General non-discriminatory approach

In order to make it easier to read, this document uses the male form in grammatical structures but with an implied neutral sense. It is aimed equally at both men and women. We kindly ask female readers for their understanding in this simplification of the text.

1.1 Explanation of the safety information

Introduction

These operating instructions provide information on the technical data and functions of the product. These operating instructions provide detailed safety information and are provided as clear step-by-step instructions.

The safety information and notes are categorised according to the following scheme. A number of different symbols are used to denote different situations. The symbols shown here serve only as examples.

DANGER!

Nature and source of the danger

Consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger

Danger!

– Denotes an immediate threatening danger. If this is disregarded, it will result in fatal or very serious injuries.

WARNING!

Nature and source of the danger

Possible consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger

Warning!

– Denotes a possibly hazardous situation. If this is disregarded, it could result in fatal or very serious injuries.

CAUTION!

Nature and source of the danger

Possible consequence: Slight or minor injuries, material damage.

Measure to be taken to avoid this danger

Caution!

– Denotes a possibly hazardous situation. If this is disregarded, it could result in slight or minor injuries. May also be used as a warning about material damage.

NOTICE!

Nature and source of the danger

Damage to the product or its surroundings

Measure to be taken to avoid this danger

Note!

– Denotes a possibly damaging situation. If this is disregarded, the product or an object in its vicinity could be damaged.

Type of information

Hints on use and additional information

Source of the information, additional measures

Information!

– *Denotes hints on use and other useful information. It does not indicate a hazardous or damaging situation.*

1.2 Users' qualifications

WARNING!

Danger of injury with inadequately qualified personnel!

The operator of the plant / device is responsible for ensuring that the qualifications are fulfilled.

If inadequately qualified personnel work on the unit or loiter in the hazard zone of the unit, this could result in dangers that could cause serious injuries and material damage.

– All work on the unit should therefore only be conducted by qualified personnel.
– Unqualified personnel should be kept away from the hazard zone

Training	Definition
Instructed personnel	An instructed person is deemed to be a person who has been instructed and, if required, trained in the tasks assigned to him/her and possible dangers that could result from improper behaviour, as well as having been instructed in the required protective equipment and protective measures.
Trained user	A trained user is a person who fulfils the requirements made of an instructed person and who has also received additional training specific to the system from ProMinent or another authorised distribution partner.
Trained qualified personnel	A qualified employee is deemed to be a person who is able to assess the tasks assigned to him and recognize possible hazards based on his/her training, knowledge and experience, as well as knowledge of pertinent regulations. The assessment of a person's technical training can also be based on several years of work in the relevant field.
Electrician	Electricians are deemed to be people, who are able to complete work on electrical systems and recognize and avoid possible hazards independently based on his/her technical training and experience, as well as knowledge of pertinent standards and regulations. Electricians should be specifically trained for the working environment in which the are employed and know the relevant standards and regulations. Electricians must comply with the provisions of the applicable statutory directives on accident prevention.
Customer Service department	Customer Service department refers to service technicians, who have received proven training and have been authorised by ProMinent to work on the system.

Note for the system operator

The pertinent accident prevention regulations, as well as all other generally acknowledged safety regulations, must be adhered to!

1.3 ID Code

Device identification / Identcode

1.3.1 Identcode DULCO®flex DFAa 003

Identcode								
DFAa	DULCO®flex DFAa 003							
		Type						
	003	DFAa 003, with 3.2 mm hose, wall thickness 2.4 mm (1.66 ml/revolution)						
			Drive					
		000	Pump without drive					
			Step-down gears / 3 x 230 / 400 VAC					
		A10	0.09 kW, 14 rpm, 1.4 l/h, 2 bar					
		A11	0.12 kW, 35 rpm, 3.5 l/h, 2 bar					
		A12	0.12 kW, 70 rpm, 7.0 l/h, 2 bar					
		A13	0.18 kW, 93 rpm, 9.3 l/h, 2 bar					
		A14	0.18 kW, 140 rpm, 13.9 l/h, 2 bar					
			Manual adjustment gears / 3 x 230 / 400 VAC					
		A21	0.15 kW, 10.9-57 rpm, 1.1-5.7 l/h, 2 bar					
		A22	0.15 kW, 34-176 rpm, 3.4-17.5 l/h, 2 bar					
			Adjustment gears with integrated frequency converter / 1x 230 VAC					
		A31	0.18 kW, 13-130 rpm, 1.3-12.9 l/h, 2 bar					
			Adjustment gears (external frequency converter required) / 3 x 230 / 400 VAC					
		A41	0.18 kW, 0-93 rpm, 0-9.3 l/h, 2 bar					
				Hose material				
			A	Norpren A60G				
			B	Norpren A60F (food grade)				
			C	Solva				
			D	Silicone				
					Base plate			
				0	Base plate, lacquered steel			
				1	Base plate, stainless steel			
						Batch control		
					0	without batch control		
					R	with batch control		
							Special version of motor	
						0	Standard (3 phase) 3x230/400 VAC	

Identcode										
DFAa	DULCO®flex DFAa 003									
						D	Single phase motor, 0.12 kW (not suitable for A21-A41) 1x230 VAC			
						E	Single phase motor, 0.18 kW (not suitable for A21-A41) 1x230 VAC			
								Pump head		
							0	Standard with one pump head		
							C	Double head version		
									Certification	
									01	CE mark

1.3.2 Identcode DULCO®flex DFAa 008

Identcode				
DFAa	DULCO®flex DFAa 008			
		Type		
	008	DFAa 008, with 8 mm hose, wall thickness 2.4 mm (10 ml/revolution)		
			Drive	
		000	Pump without drive	
			Step-down gears / 3 x 230 / 400 VAC	
		B10	0.09 kW, 14 rpm, 8.4 l/h, 2 bar	
		B11	0.12 kW, 35 rpm, 21 l/h, 2 bar	
		B12	0.12 kW, 70 rpm, 42 l/h, 2 bar	
		B13	0.18 kW, 93 rpm, 55.8 l/h, 2 bar	
		B14	0.18 kW, 140 rpm, 84 l/h, 2 bar	
			Manual adjustment gears / 3 x 230 / 400 VAC	
		B21	0.15 kW, 10.9-57 rpm, 6.5-34.2 l/h, 2 bar	
		B22	0,25 kW, 34-176 rpm, 20.4 - 105 l/h, 2 bar	
			Adjustment gears with integrated frequency converter / 1x 230 VAC	
		B31	0.18 kW, 13-130 rpm, 7.8-78 l/h, 2 bar	
			Adjustment gears (external frequency converter required) / 3 x 230 / 400 VAC	
		B41	0.18 kW, 0-93 rpm, 0-55.8 l/h, 2 bar	
				Hose material
			A	Norpren A60G
			B	Norpren A60F (food grade)
			C	Solva

Identcode										
DFAa	DULCO®flex DFAa 008									
			D	Silicone						
						Base plate				
					0	Base plate, lacquered steel				
					1	Base plate, stainless steel				
							Batch control			
						0	without batch control			
						R	with batch control			
								Special version of motor		
							0	Standard (3 phase) 3x230/400 VAC		
							D	Single phase motor, 0.12 kW (not suitable for B21-B41) 1x230 VAC		
							E	Single phase motor, 0.18 kW (not suitable for B21-B41) 1x230 VAC		
									Pump head	
								0	Standard with one pump head	
								C	Double head version	
										Certification
									01	CE mark

2 Safety and responsibility

2.1 General safety information

WARNING!

Live parts

Possible consequence: Fatal or very serious injuries

- Measure: The device must be disconnected from the power supply before it is opened
- Isolate damaged, faulty or manipulated devices from the mains in order to de-energise.

WARNING!

Emergency stop switch

Possible consequence: Fatal or very serious injuries

An emergency stop switch is to be connected for the entire plant. This should enable the entire plant to be shut down in the event on an emergency in such a way that the overall plant can be brought into a safe condition.

WARNING!

Unauthorised access

Possible consequence: Fatal or very serious injuries

- Measure: Ensure that there can be no unauthorised access to the unit

WARNING!

Hazardous media / contamination of persons and equipment

Possible consequence: Fatal or very serious injuries. material damage

- Ensure that the pump hoses are resistance against the media being conveyed
- Always observe the the safety data sheets for the media to be conveyed. The system operator must ensure that these safety data sheets are available and that they are kept up-to-date
- The safety data sheets for the media being conveyed are always decisive for initiating counter measures in the event of leakage to the media being conveyed
- Observe the general restrictions in relation to viscosity limits, chemical resistance and density
- Always switch the pump off before exchanging the pump hose

WARNING!

Correct and proper use

Possible consequence: Fatal or very serious injuries

- The unit is not intended to convey or regulate gaseous or solid media
- Do not exceed the rated pressure, speed or temperature for the pump
- The unit may only be used in accordance with the technical data and specifications provided in these operating instructions and in the operating instructions for the individual components
- The system is not designed for use in areas at risk from explosion
- Only switch the pump on if it has been properly fastened to the floor
- Only switch the pump on if it the front cover has been attached.

WARNING!

Operational lifetime of the pump hoses

Possible consequence: Fatal or very serious injuries

The operational lifetime of the pump hoses cannot be precisely specified. For this reason, the possibility of fracture and consequential leakage of liquids must be accounted for. If the hose rupture alarm (optional) is fitted, then the pump can be stopped and / or an electrical valve can be actuated.

In addition, you must avoid particles from untight hoses being introduced into the media being conveyeed. This can be achieved e.g. by means of filtration, a hose rupture alarm or other means suitable for the respective process.

CAUTION!

CIP cleaning

In the event of CIP cleaning, it is necessary to obtain information from the manufacturer about correct installation of the pump (a special installation is required), as well as regarding the compatibility of the cleaning agents with the pump hoses of the pump and the other hydraulic connections.

Cleaning should be undertaken at the recommended maximum temperature.

CAUTION!

Direction of rotation / flow direction

Possible consequence: Material damage right through to destruction of the unit

– The pump's direction of rotation in relation to the desired flow direction must be checked prior to every start.

CAUTION!

Environmental influences

Possible consequence: Material damage right through to destruction of the unit

– The device is not suitable for outdoor operation
– Take suitable measures to protect the device from environmental influences such as:
  – UV rays
  – Moisture
  – Frost, etc.

3 Functional description

Brief functional description

The package contents supplied with the DULCO®flex DFAa is selectable via the identcode.

The DULCO®flex DFAa is a displacement pump. The feed chemical is transported by the rotor squeezing the hose in the direction of flow. No valves are needed for this. This ensures gentle handling of the metered media.

The DULCO®flex DFAa has been designed for safe and uncomplicated operation, as well as straightforward maintenance.

The DULCO®flex DFAa can be used for many different media. However, this pump type is often the optimal solution for abrasive, shear-sensitive and viscose media.

Typical areas of use include processes where only a low discharge pressure is required (max. 2 bar).

3.1 Construction

Main modules:

- Drive Unit
- Housing
- Base frame

The pump housing is closed off with a screwed front cover in order to avoid the risk of injury.

The motor serves to drive the rotor. Rollers at the ends of the rotor serve to press the pump hose against the pump housing.

The rotary movement of the rotors alternately press and relax the rollers in relation to the pump hose. This serves to suck the media in and convey it into the metering line.

3.2 Overview of the device

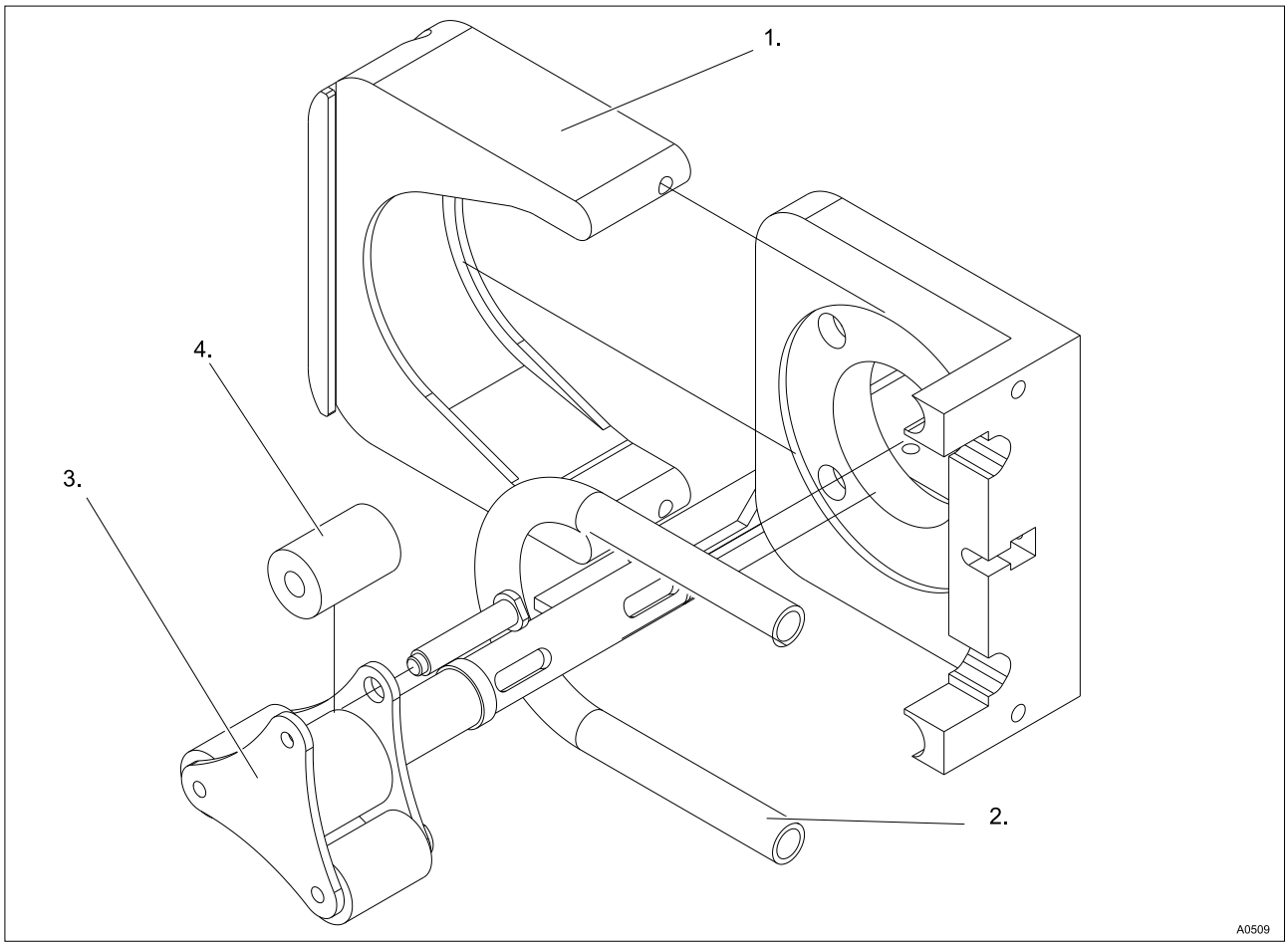

Fig. 1: Diagram of functional principle

1. Housing
2. Hose
3. Rotor
4. Rollers

4 Transport, storage, assembly and Installation

- **User qualification, transport and storage:** instructed persons, see *Chapter 1.2 “Users' qualifications” on page 6*
- **User qualification, assembly:** trained qualified personnel, see *Chapter 1.2 “Users' qualifications” on page 6*
- **User qualification, electrical installation:** Qualified electrician, see *Chapter 1.2 “Users' qualifications” on page 6*

WARNING!

Safety data sheet

Possible consequence: Fatal or very serious injuries

Always observe the corresponding data sheets for the media when carrying out any tasks which involve contact with the media that is to be conveyed.

4.1 Transport

Transport

- The pump is protected by means of cardboard packaging
- The packaging materials can be recycled
- For environmental conditions for storage and transportation see *Chapter 4.3.1 “Ambient conditions” on page 16*

4.2 Storage

Storage

- The pump hose should be removed from the housing during the duration of storage
- For storage durations longer than 60 days, the coupling surfaces (terminals, reducing adaptors, motors) are to be protected with suitable antioxidant agents
- For environmental conditions for storage and transportation see *Chapter 4.3.1 “Ambient conditions” on page 16*

4.3 Assembly

CAUTION!

Possible consequence: Slight or minor injuries, material damage.

Carry out the assembly work before the electrical installation is undertaken!

Observe the permissible environmental conditions!

4.3.1 Ambient conditions

NOTICE!

Ambient conditions

Possible consequence: Property damage and increased wear and tear

Assembly is to be carried out in the following order. If the pump has to be installed outdoors, then it is to be equipped with protection against sunlight and weather influences.

When positioning the pump, ensure that sufficient room for access is provided for all types of maintenance work.

There are limit values for temperature and pressure, depending on the type of hose selected. These limit values are described in the following section:

Limit values for hose temperature and pressure

Material Hose	min. temp. (°C) Feed chemical	max. temp. (°C) Feed chemical	min. temp. (°C) Environment	max. pressure (bar)
Solva	-	-	-40	2
Silicone	-	-	-40	2
Tygon	-10	70	-40	2
NORPREN	-40	120	-40	2

Also observe the general safety information, see *Chapter 2.1 "General safety information" on page 10*

4.3.2 Alignment of the suction side

The pump is to be positioned as near as possible to the liquid container, so that the suction side is kept as short and straight as possible.

The suction line must be absolutely airtight and made of a suitable material, so that it is not squeezed together under vacuum.

The diameter must correspond to the rated diameter of the pump hose. A larger diameter is recommended in the event of viscose liquids.

The pump is self-priming and does not require an admission valve. The pump is reversible and the suction connection can therefore comprise of one of two options. Normally the option is selected which is best suited to the physical conditions of the installation.

4.3.3 Alignment of the discharge side

The discharge line is to be kept as straight and short as possible, in order to avoid performance reduction.

The diameter must correspond to the rated diameter of the pump hose. A larger diameter is recommended in the event of viscose liquids.

4.3.4 Performance curves

NOTICE!

Maximum pressure under continuous operation

The dotted line indicates the limit for maximum pressure under continuous operation

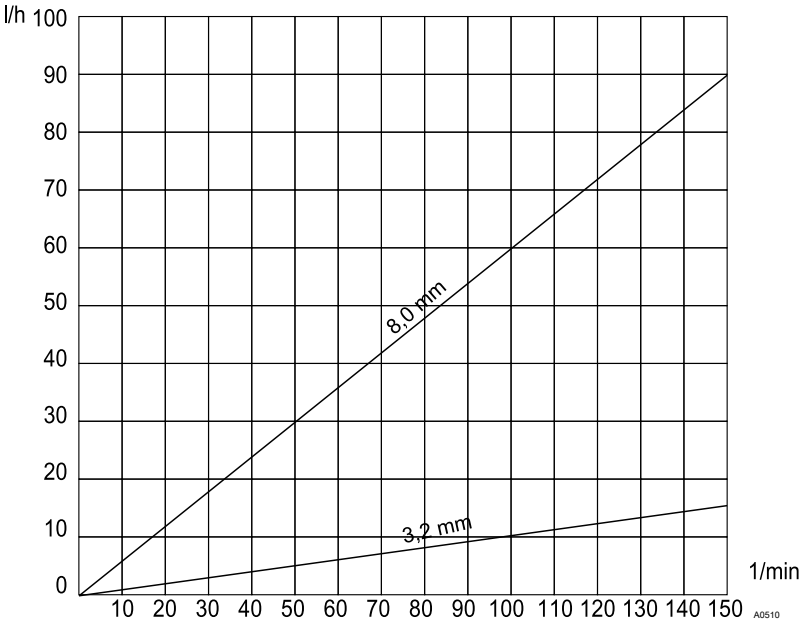

Fig. 2: DFAa 003 (3.2 mm) / DFAa 008 (8.0 mm)

5 Commissioning

- **User qualification, commissioning:** trained user, see *Chapter 1.2 “Users' qualifications” on page 6*

5.1 Testing prior to commissioning the pump

The following tests are to be carried out:

- Ensure that the pump has not been damaged during transportation or storage. Immediately report any damage to the supplier
- Check that the mains voltage is suitable for the motor
- Ensure that the hose is suitable for the fluid to be conveyed and that it is not damaged
- Make sure that the temperature of the liquid does not exceed the recommended temperature range
- Only switch the pump on if it the front cover has been properly attached
- Check that the rollers are correctly fitted and fastened
- Check that the hose and rollers are sufficiently lubricated
- Check that the thermal overload protection (not included in the delivery scope) corresponds to the value specified on the motor type plate
- Check whether the direction of rotation is correctly adjusted
- Check that the optional electrical components are connected and are working properly
- Install a manometer in the pressure line if the back-pressure value is unknown
- Check the operating instructions in order to ensure that the flow values, pressures and power consumption of the motor do not exceed the rated values
- Install a pressure relief valve in the pressure line in order to protect the pump in the event that a valve is unintentionally closed off or the line is blocked in another way.

6 Operation of the peristaltic pump

- **User qualification, operation:** instructed persons, see *Chapter 1.2 “Users' qualifications” on page 6*

The peristaltic pump is to be fully integrated into the customer's designated plant and is then controlled by this plant. It is not possible to operate the pump directly.

7 Maintenance, repair, malfunctions, disposal and spare parts

- **User qualification, maintenance and disposal:** instructed persons, see *Chapter 1.2 “Users' qualifications” on page 6*
- **User qualification, repair and malfunctions:** trained user, see *Chapter 1.2 “Users' qualifications” on page 6*

7.1 Maintenance

CAUTION!

Disconnect the pump from the mains

Possible consequence: Personal injury

You may only carry out work on the pump after it has previously been switched off and disconnected from the mains.

Lubrication

- Check that the rollers and the hose are sufficiently lubricated
  - Check every 200 operating hours
- Check whether the oil level is correct for the step-down gears
  - Exchange the oil at regular intervals in accordance with the step-down gear maintenance manual.

7.2 Exchanging the pump hoses

Exchanging the pump hoses - dismantling

1. Close off all valves, in order to prevent leakage of the feed chemical
2. Dismantle the pump hoses from both the discharge and suction sides
3. Remove the front cover
4. Dismantle the pump housing
5. Remove the pump hose to be exchanged

Exchanging the pump hoses - installation

1. Clean the interior surfaces of the pump housing
2. Lubricate the internal surfaces of the pump housing at the contact surfaces to the pump hose
3. Check the rollers. Ensure that the roller surfaces are not damaged
4. Lay the pump hose into the pump
5. Reassemble the pump housing again
6. Attach the front cover to the pump housing together with the integrated hose clip. In doing so, hold the pump hose so that it is lightly prestressed.
7. Tighten the knurled thumb screw for the integrated hose clip just enough that the pump hose is sufficiently compressed and so that it doesn't come loose during operation

8. Mount the pump hoses from both the discharge and suction sides
9. Open all of the valves

7.3 Troubleshooting

Problem	Possible cause	Solution
Increased pump temperature	Pump hose has no lubricant	Lubricate pump hose
	Increased product temperature	Reduce product temperature
	Insufficient or poor suction conditions	Check suction line for blockages
	Pump speed too high	Reduce pump speed
Reduced flow or pressure	Valves on discharge and or suction side completely or partially closed	Open valves
	Pump hose insufficiently compressed	Check roller fastening
	Pump hose rupture (the product leaks out into the housing)	Exchange pump hose
	Partial blockage of the suction line	Clean pipe
	Insufficient product quantity in storage container	Fill storage container or exchange pump
	Insufficient diameter on the suction side	Increase the diameter on the suction side, as far as possible
	Suction line too long	Shorten the suction line, as far as possible
	High viscosity of medium	Reduce viscosity, as far as possible
	Air introduction in the suction connections	Check connections and accessories for air tightness
Vibration in the pump	Pump speed too high	Reduce pump speed
	Pump base plate loose	Fasten base plate
Short operational lifetime of the hoses	Chemical stress	Check the compatibility of the hose with the liquid being conveyed, the cleaning fluid and the lubricant
	High pump speed	Reduce pump speed
	High conveying temperature	Reduce product temperature
	High operating pressure	Reduce operating pressure
	Pump cavitations	Check the suction conditions
Pump hose pulled into the pump housing	High inlet pressure (> 3 bar)	Reduce inlet pressure
	Pump hose filled with deposits	Clean or replace the pump hose

Problem	Possible cause	Solution
	Front cover with integrated hose clip insufficiently tightened up	Tighten up the holder
The pump does not start up	Insufficient motor performance	Check motor and replace if necessary
	Insufficient output from frequency converter	The frequency converter must match the motor
		Check voltage. Start occurs at minimum 10 Hz
	Blockage in the pump	Check if the suction or discharge side is blocked. Rectify blockage

7.4 Disposal of Used Parts

WARNING!

Danger due to feed chemicals

Possible consequence: Fatal or serious injuries

In the event that damage to the pump hose causes the pump to be contaminated with feed chemicals, then it is to be decontaminated with suitable agents (refer to the feed chemical safety data sheets).

NOTICE!

If no Declaration of Decontamination is affixed to the delivery, acceptance of the devices will be refused.

(also available as download from: www.prominent.com)

A signed "Declaration of Decontamination" is required by law and in order to protect our staff, before you order can be processed.

Please ensure that this is attached to the outside of the package. Otherwise we are unable to accept your delivery.

NOTICE!

Regulations governing disposal of used parts

– Note the current national regulations and legal standards which apply in your country

The pump hose is to be removed and disposed of on-site before sending the pump to ProMinent Dosiertechnik GmbH, Heidelberg / Germany.

ProMinent Dosiertechnik, Heidelberg/Germany is prepared to take back clean used parts.

7.5 Spare parts

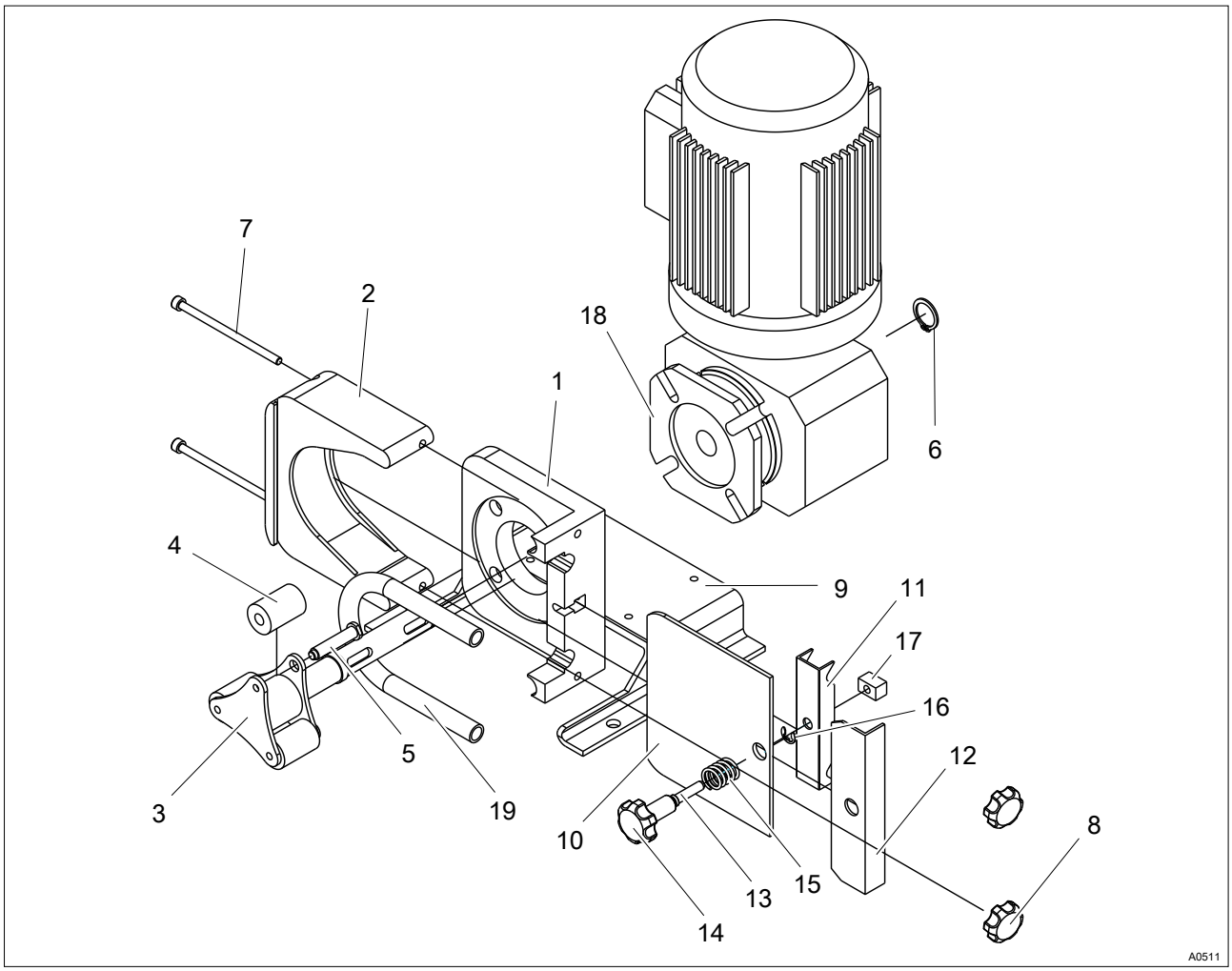

Fig. 3: Spare parts exploded view DFAa 003/008

DFAa 003 refer to Fig. 3				
Pos.	**Description**	**Quantity**	**Reference**	**Part number**
1	Mount pump housing	1	115.00.01	
2	Pump housing	1	115.00.02	
3	Rotor with steel shaft	1	115.00.03	
	Rotor with stainless steel shaft	1	115.00.04	
4	Roller for pump hose with 2.4 mm wall thickness / Plastic A	3	115.00.05	
	Roller for pump hose with 2.4 mm wall thickness / Plastic B	3	115.00.06	
5	Shaft for roller	3	115.00.09	
6	Safety ring for rotor shaft	1	115.00.10	
7	Pump housing screws	2	115.00.11	
	Stainless steel pump housing screws	2	115.00.12	

DFAa 003 refer to Fig. 3				
Pos.	**Description**	**Quantity**	**Reference**	**Part number**
8	Pump housing nuts	2	115.00.13	
9	Base plate	1	115.00.14	
	Base plate, stainless steel	1	115.00.15	
10	Front cover, polycarbonate	1	115.00.16	
11	Pump hose clamping pad	1	115.00.17	
	Stainless steel pump hose clamping pad	1	115.00.18	
12	Front cover fascia, steel	1	115.00.19	
	Front cover fascia, stainless steel	1	115.00.20	
13	Adjustment screw, steel	1	115.00.21	
	Adjustment screw, stainless steel	1	115.00.22	
14	Adjustment screw grip, plastic	1	115.00.23	
15	Coil spring	1	115.00.24	
16	Safety ring adjustment screw	1	115.00.25	
17	Thread insert	1	115.00.26	
	Thread insert, stainless steel	1	115.00.27	
18	Drive	1		
19	Pump hose silicone	1		1037107
	Pump hose Norprene A-60-F	1		1037144
	Pump hose Solva	1		1037145

DFAa 008 refer to Fig. 3				
Pos.	**Description**	**Quantity**	**Reference**	**Part number**
1	Mount pump housing	1	115.00.01	
2	Pump housing	1	115.00.02	
3	Rotor with steel shaft	1	115.00.03	
	Rotor with stainless steel shaft	1	115.00.04	
4	Roller for pump hose with 2.4 mm wall thickness / Plastic A	3	115.00.05	
	Roller for pump hose with 2.4 mm wall thickness / Plastic B	3	115.00.06	
5	Shaft for roller	3	115.00.09	
6	Safety ring for rotor shaft	1	115.00.10	
7	Pump housing screws	2	115.00.11	

DFAa 008 refer to Fig. 3				
Pos.	**Description**	**Quantity**	**Reference**	**Part number**
	Stainless steel pump housing screws	2	115.00.12	
8	Pump housing nuts	2	115.00.13	
9	Base plate	1	115.00.14	
	Base plate, stainless steel	1	115.00.15	
10	Front cover, polycarbonate	1	115.00.16	
11	Pump hose clamping pad	1	115.00.17	
	Stainless steel pump hose clamping pad	1	115.00.18	
12	Front cover fascia, steel	1	115.00.19	
	Front cover fascia, stainless steel	1	115.00.20	
13	Adjustment screw, steel	1	115.00.21	
	Adjustment screw, stainless steel	1	115.00.22	
14	Adjustment screw grip, plastic	1	115.00.23	
15	Coil spring	1	115.00.24	
16	Safety ring adjustment screw	1	115.00.25	
17	Thread insert	1	115.00.26	
	Thread insert, stainless steel	1	115.00.27	
18	Drive	1		
19	Pump hose silicone	1		1037146
	Pump hose Norprene A-60-G	1		1037147
	Pump hose Norprene A-60-F	1		1037148
	Pump hose Solva	1		1037149

Lubricant				
Pos.	**Description**	**Quantity**	**Reference**	**Part number**
1	0.5 kg silicone grease	1		1037255
2	1.0 kg silicone grease	1		1037256

8 DFAa technical data

Type DFAa	Feed rate in ml/rev-olution	P max. in bar	Flow rate at max. pressure in l/h	Rollers/ shoes Shoes	Hose interior ⌀ in mm	Solids max. ⌀ in mm	Weight without drive in kg	Con-nector
003	1,66	2	17,5	Rollers	3,2	-	2	-
008	10	2	105	Rollers	8	-	2	-

8.1 Dimensions DFAa 003/008

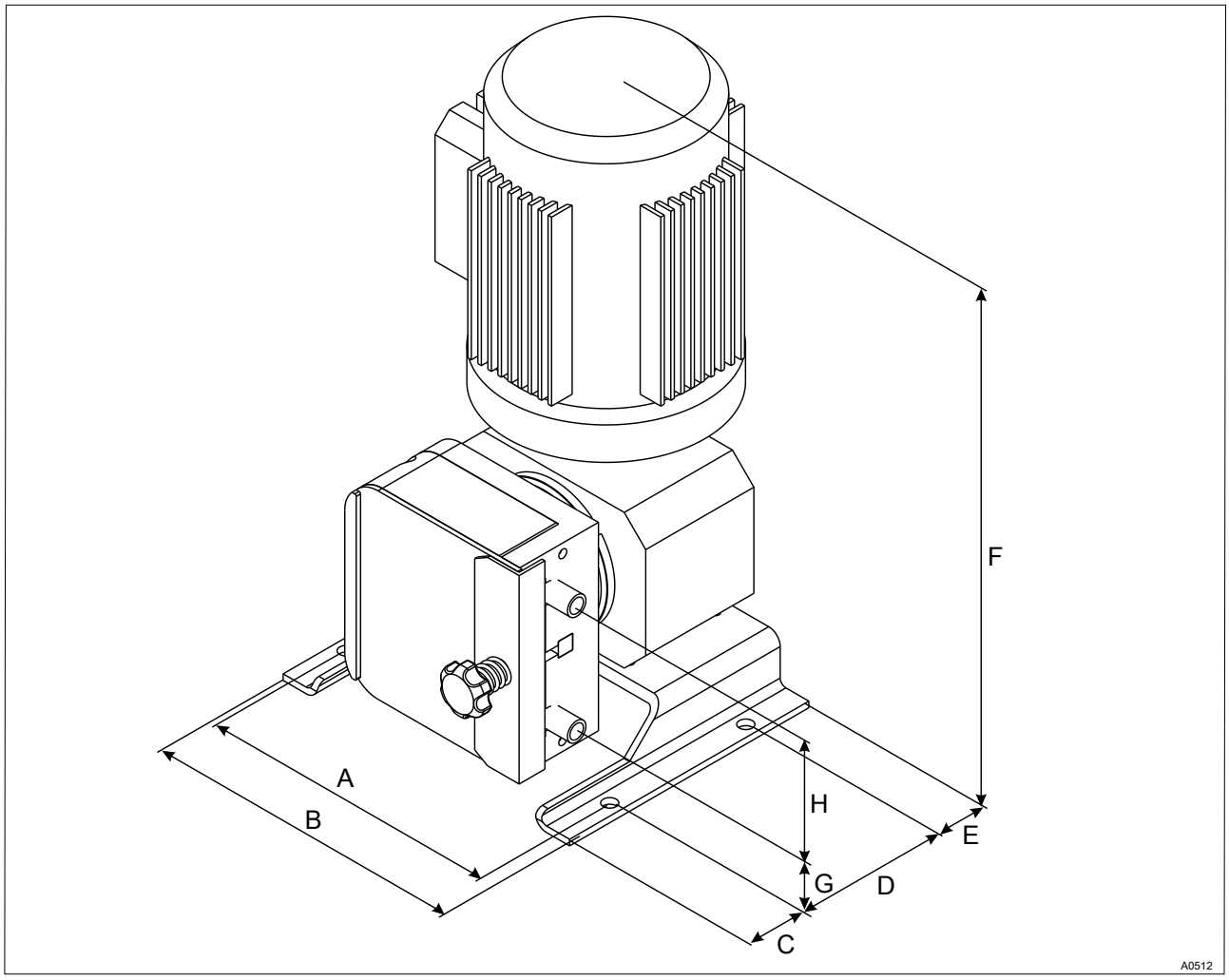

Fig. 4: Dimensions DFAa 003/008

A 180 mm
B 200 mm
C 36 mm
D 95 mm
E 36 mm
G 47 mm
H 76 mm

Drive	Position *"F"* in mm
A10/B10	323
A11/B11	323
A12/B12	323
A13/B13	325
A14/B14	325
A21/B21	439
A22/B22	457
A31/B31	355
A41/B41	340
The drive version is specified by means of an Identcode, please refer to *Chapter 1.3 "ID Code" on page 7*	

9 DFAa technical appendices

9.1 Declaration of Conformity

- Original -

EC Declaration of Conformity

We hereby declare,

ProMinent Dosiertechnik GmbH
Im Schuhmachergewann 5 - 11
DE - 69123 Heidelberg

that the following designated product complies with the pertinent fundamental safety and health requirements of the EC Directive in terms of its design and construction and in terms of the version marketed by us.
This declaration loses its validity in the event of a modification to the product not agreed with us.

Description of the product:	***Peristaltic pump DULCOflex***
Product type:	***DFAa..., DFBa..., DFCa..., DFDa...***
Serial no.:	***refer to nameplate on the device***
Pertinent EC Directives:	***EC Machinery Directive (2006/42/EC)*** ***EC EMC Directive (2004/108/EC)*** ***The protection targets laid out in the low-voltage regulations 2006/95/EG have, as shown in appendix I, Nr. 1.5.1 of the machine regulations 2006/42/EG been adhered to***
Applied harmonised standards in particular:	***EN ISO 12100-1, EN ISO 12100-2, EN 809, EN 60204-1, EN 60034-1, EN 60034-5, EN 60034-7, EN 61000-6-1, EN 61000-6-2***
Technical manuals were prepared by authorized documentation personnel:	***Norbert Berger*** ***Im Schuhmachergewann 5-11*** ***DE-69123 Heidelberg***
Date / Manufacturer - Signature :	*16.03.2010*
Details of the signatory:	*Joachim Schall, Head of Research and Development*

Fig. 5: EC Declaration of Conformity

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