

Установка, техническое обслуживание и эксплуатация
Инструкция

Перистальтические насосы PV70 PVT70 PV80 PVT80

INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

PERISTALTIC PUMP PV 70 PVT 70 PV 80 PVT 80



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Girona (Spain)



Original Manual
01.700.30.007080EN_RevC
ED. 2011/02



EC DECLARATION OF CONFORMITY

(In accordance with Directive 2006/42/EC, annex II, part A)

We, the manufacturer:

c/ Telers, 54
17820 Banyoles (Girona) - Spain

Hereby declare that the products

PERISTALTIC PUMP

PV / PVT

Name

Type

are in conformity with the provisions of the Council Directives:

Machine Directive 2006/42/EC, and comply with the essential requirements of the said Directive and the harmonised standards:


UNE-EN ISO 12100-1/2:2004
UNE-EN 809/A1/AC:2001
UNE-EN ISO 13857:2008
UNE-EN 953:1997
UNE-EN ISO 13732-1:2007

Low-Voltage Directive 2006/95/CE (what repeal 73/23/EEC Directive), and conform to UNE-EN 60204-1:2006 and UNE-EN 60034-1:2004.

Electromagnetic Compatibility Directive 2004/108/CE (what repeal 89/336/EEC Directive), and conform to UNE-EN 60034-1:2004.

In conformity with **Regulation (CE) No. 1935/2004** on materials and objects intended to come into contact with foodstuffs (repealing 89/109/EEC), in accordance with which the materials in contact with the product do not transfer its constituents to the foodstuffs in quantities large enough to put human health at risk.

Banyoles, 2012


Marc Pons Bague Technical Manager

1. Safety

1.1. INSTRUCTIONS MANUAL

This manual contains information about the reception, installation, operation, assembly, disassembly and maintenance of the PV-70 / PVT-70 / PV-80 / PVT-80 pumps.

The information published in the instruction manual is based on updated information.

INOXPA reserves the right to modify this instruction manual without prior notice.

1.2. START-UP INSTRUCTIONS

This Instructions Manual contains essential and useful information for properly operating and maintaining your pump.

Read these instructions carefully before starting up the pump; become familiar with the operation and use of your pump and follow the instructions closely. These instructions should be kept in a safe location near the installation.

1.3. SAFETY

1.3.1. Warning symbols



Danger for persons in general



Danger of injury caused by rotating equipment parts.



Electrical danger



Danger! Caustic or corrosive agents.



Danger! Suspended loads



Danger to the correct operation of the equipment.



Commitment to safety at the workplace.



Protective goggles requirement.

1.4. GENERAL SAFETY INSTRUCTIONS



Read this Instructions Manual carefully before installing the pump and starting it up. Contact INOXPA in case of doubt.

1.4.1. During installation



The *Technical Specifications* of Chapter 8 should always be observed.

Never start up the pump before it has been connected to the piping.

Do not start up the pump if the casing and belt protections have not been mounted.

Check that the motor specifications meet the requirements, especially when working under conditions that involve the risk of explosion.



During the installation, all the electric work should be carried out by authorised personnel.

1.4.2. During operation



The *Technical Specifications* of Chapter 8 should always be observed. Under no circumstances can the limit values specified be exceeded.

NEVER touch the pump or the pipes during operation when the pump is being used to decant hot fluids or when it is being cleaned.



The pump contains moving parts. Never place your fingers inside the pump while the pump is in operation.



NEVER operate the pump with the suction and delivery valves closed.

NEVER spray the electrical motor directly with water. The standard protection for the motor is IP-55: Protection against dust and sprayed water.

1.4.3. During maintenance



The *Technical Specifications* of Chapter 8 should always be observed.

NEVER dismantle the pump before the pipes have been emptied. Note that the pumped fluid may be dangerous or very hot. Consult the regulations in effect in each country for these cases.

Do not leave parts loose on the floor.



ALWAYS disconnect the pump from the power supply before starting maintenance work. Remove the fuses and disconnect the cables from the motor terminals.

All electrical work should be carried out by authorised personnel.

1.4.4. Compliance with the instructions

Any non-fulfilment of the instructions may result in a risk for the operators, the environment and the machine, and may result in the loss of your right to claim damages.

This non-fulfilment may result in the following risks:

- Failure of important functions of the machines/plant.
- Failure of specific maintenance and repair procedures.
- Possibility of electric, mechanical and chemical risks.
- Will place the environment in danger due to the release of substances.

1.4.5. Guarantee

Any warranty provided shall immediately be cancelled and void *ipso jure*, and INOXPA shall be compensated for any product liability claim from third parties, if:

- the service and maintenance work was not carried out in accordance with the service instructions, or the repair work has not been carried out by our personnel or it has been conducted without our written authorization;
- our equipment has been changed without prior written authorization;
- the parts or lubricants used are not original INOXPA parts and products;
- the materials were used incorrectly or negligently, or not in accordance with these instructions and their intended use;
- pump parts were damaged by excessive pressure owing to the lack of a safety valve.

The General Delivery Terms already provided also apply.



No change can be made to the equipment without prior discussion with the manufacturer. For your safety, please use original spare parts and accessories. The use of other parts will exempt the manufacturer from any liability.

The service terms can only be changed with prior written authorisation from INOXPA.

Please do not hesitate to contact us in case of doubts or if more complete explanations are required on specific data (adjustments, assembly, disassembly, etc.).

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3. General Information

3.1. DESCRIPTION

The peristaltic pump is part of the range of positive displacement volumetric pumps. Its operating principle is based on pressure from rollers which repeatedly squeeze the hose. The oscillation between compression and decompression of the hose creates a fall in the pressure and thus the continuous suction of the fluid, converting it into a syphon pump. The impulse is turned into a continuous flow, whose rate is directly proportionate to the oscillation speed. The fluid inside the pipe is pumped in its integral state, without suffering the slightest damage.

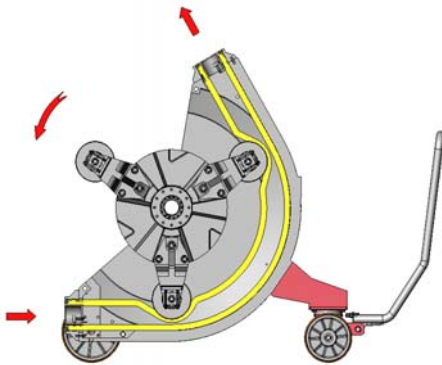
Its main features are:

- Self-suction up to 8m.
- Can be run dry.
- Totally sealed, without mechanical sealing devices or gaskets.
- Excellent dosing accuracy $\pm 1\%$.
- Flow rate independent from pressure.
- Reversible pumping direction
- Easy to clean.
- Low noise.
- Easy, low-cost maintenance.
- Gentle pumping of fluids.
- Resistance to abrasion.

This equipment is suitable for use in food processing applications.

3.2. OPERATING PRINCIPLE

The operation of the pump can be seen in the following figure:



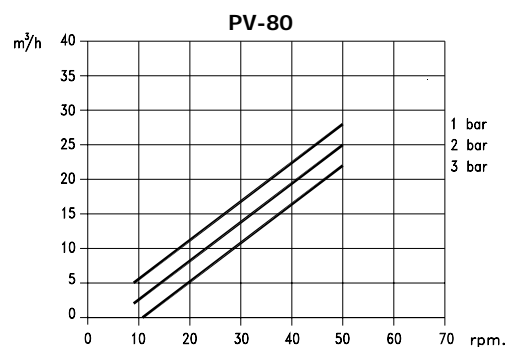
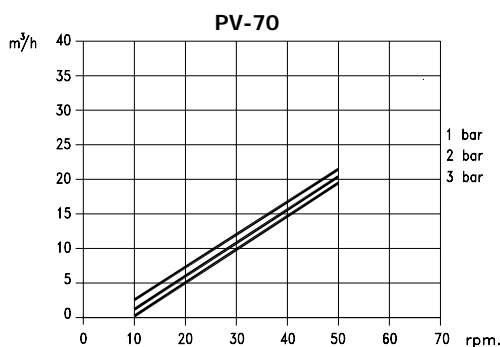
As illustrated in the diagram, the pump unit has a simple, robust design, with very few moving parts.

Both ends of the hose are attached to the body of the pump by means of a strong clamp. There are three pressure rollers inside the casing. These rotate concentrically with an iron-cast disc. At least one of them is always compressing the flexible hose, thus generating the pumping action.

3.3. APPLICATION

- Filtering
- Decanting.
- Bottling.
- Devatting.
- Pumping over.

3.3.1. Range of application



Each pump has performance limits. The pump was selected for certain pumping conditions at the time the order was placed. INOXPA shall not be liable for any damage resulting from the incompleteness of the information provided by the purchaser (nature of the fluid, RPM, etc.).

4. Installation

4.1. PUMP RECEPTION

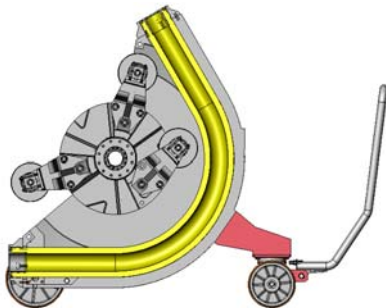
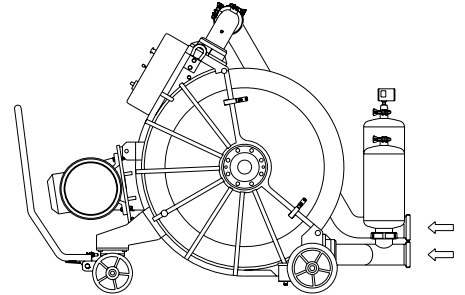


INOXPA cannot be held responsible for the damage sustained by the equipment during transport or unpacking. Visually check that the packaging is not damaged.

The pump will be accompanied by the following documents:

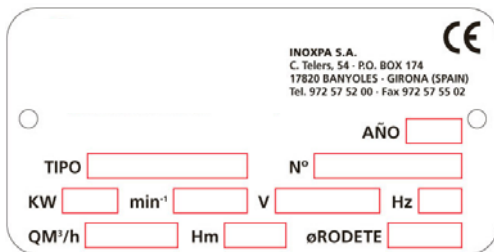
- Dispatch notes.
- Pump Instructions and Service Manual.
- Motor Instructions and Service Manual (*)
- (*) when the pump is supplied with a motor by INOXPA.

Unpack the pump and check the following:



- The pump suction and delivery connections, removing the remains of any packaging materials.
- Check that the pump and the motor have not suffered any damage.
- If the equipment is not in good condition and/or any part is missing, the carrier should draw up a report accordingly as soon as possible.
- Check that the pump contains one of the three rollers rotated and that none of them are pressing on the tube, or have damaged it during transport. Before starting up the pump, this roller should be assembled correctly.

4.1.1. Pump identification



Serial number

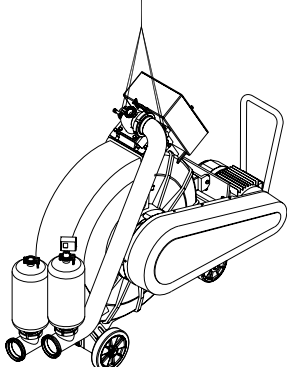
Pump plate

4.2. TRANSPORT AND STORAGE



PV-70 / PVT-70 / PV-80 / PVT-80 pumps are too heavy to be stored manually.

Lift the pump as shown below:



- Always use the two eyebolts to lift the pump.
- Secure the slings so that they cannot slip.

4.3. LOCATION

- Place the pump as close as possible to the suction tank, and if possible below the fluid level.
- Place the pump so as to allow sufficient space around it to access the pump and the motor. (See chapter 8. *Technical specifications* for dimensions and weights).
- Stand the pump on a flat, level surface.



Install the pump so as to allow sufficient ventilation.

If the pump is installed outdoors, it should be protected by a roof. Its location should enable easy access for any inspection or maintenance operations.

4.4. PIPES

- As a general rule, the suction and delivery pipes should be fitted in straight sections, with the least possible number of bends and accessories, in order to minimise head loss caused by friction.
- Ensure that pump input and output fittings are properly aligned with the piping and of a similar diameter to the pump connections.
- Place the pump as close as possible to the suction tank, if possible below the fluid level, or even below the tank, to achieve the maximum static suction head.
- Place pipe supports as close as possible to the pump's suction inlet and delivery outlet.

4.5. SHUT-OFF VALVES

The pump can be isolated for maintenance purposes. Thus, shut-off valves should be fitted to the pump's suction and delivery connections.

These valves should ALWAYS be open when the pump is operating.

4.6. ELECTRICAL INSTALLATION



The connection of the electrical motors must be performed by qualified personnel. Take all necessary measures to prevent damage to connections and cables.



The electrical equipment, terminals and components of the control systems may still contain electric current when switched off. Contact with them may be dangerous for operators or cause irreversible damage to the equipment.

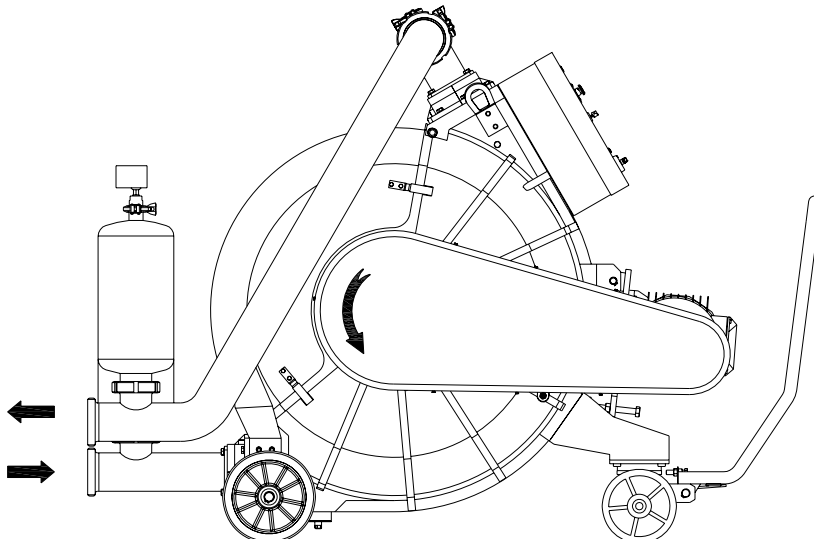
Before opening the pump, make sure that the electrical circuit is switched off.

Connect up the motor following the manufacturer's instructions.

Check the direction of rotation. The pump is fully reversible.

The rotation direction determines which is the suction and which is the delivery pipe on the pump. The diaphragm pressure transmitter or the pressure transducer always must be placed on the outlet pipe so that it works.

A diagram of the switchboard is supplied on a separate sheet.



5. Start-up



Before starting the pump, thoroughly read the instructions provided in Chapter 4. [Installation](#).

5.1. START-UP



Read Chapter 8 [Technical Specification](#) thoroughly. INOXPA cannot be held responsible for the incorrect use of the equipment.



NEVER touch the pump or the pipes when hot fluid is being pumped.

5.1.1. Checks before starting up the pump

- Check that the tube and rollers are correctly mounted and greased. The grease with which the INOXPA pump is supplied ex-works is silicone-based food grease. All pumps are supplied with a tin of grease for pump maintenance.
- Fully open the shut-off valves on the suction and delivery pipes.
- Check that the motor's direction of rotation is correct.
- Check that the optional electrical components are connected to the control panel and check that it is working.



The hose and rollers should always be greased.

Check that the rollers are mounted correctly, given that in order to avoid damage to the flexible tube, the pump is dispatched with either one, or two, of these dismantled. See chapter 7, [Maintenance](#).



Do not start up the pump if the casing and belt protections have not been mounted. The pump is fitted with a safety system that impedes its putting into operation if the protective casing has been stripped.

5.1.2. Checks when starting up the pump

- Check that the pump is not making any unusual noises.
- Check the flow pressure.
- Check that there are no leaks in the pump's seals.
- Check that the pressure switch is set at approximately 3 bars.



A shut-off valve on the suction pipe must not be used to regulate flow. Shut-off valves must be fully open during operation.



Check the motor's power consumption to avoid electric overload.

6. Operating Problems

The following table provides solutions to problems that might arise during pump operation. The pump is assumed to have been properly installed and correctly selected for the application. Please contact INOXPA if technical assistance is required.

Operating Problems	Probable causes
Overheating.	1, 2, 3, 4, 5, 6.
Fall in capacity / pressure.	7, 8, 9, 10, 11, 12, 13, 14, 15, 16.
Vibrations in the pump and pipes.	6, 12, 17, 18.
Short lifetime of the tube.	1, 2, 3, 6, 19, 20, 21, 22.
Stretching of the tube inside the pump.	2, 23, 24, 25.
The pump will not start up.	26, 27, 28.

Probable causes	Solutions
1 Use of non-original lubricant.	Use special INOXPA lubricant.
2 Insufficient amount of grease.	Grease correctly.
3 Fluid temperature too high.	Reduce the pump temperature.
4 Poor suction.	Check that there are no obstructions.
5 Tube is squeezed excessively.	Check that the shaft of the rollers is assembled in the correct position.
6 Pump speed is too high.	Reduce the pump speed.
7 Suction or delivery valve closed.	Open the valves.
8 Tube is insufficiently squeezed.	Check that the shaft of the rollers is assembled in the correct position.
9 Rupture of the hose (the product leaks into the machinery).	Change the hose.
10 Partial obstruction of the suction pipe.	Clean the pipes.
11 Lack of product in the suction tank.	Fill the tank.
12 Suction tube section too narrow.	Increase section / reduce pump pressure.
13 Suction length too long.	Shorten the suction pipe.
14 Product viscosity is too high.	Reduce viscosity. Increase the tube section. Check that the pump is appropriate.
15 Air is entering through the suction joints.	Tighten the flange seals and accessories.
16 Strong pulsations during suction.	Install a stilling basin. Re-analyse the application (speed, etc.)
17 The pipes are not anchored correctly.	Fix the pipes in place.
18 Strong pulsations in the pump.	Install delivery and/or suction pulsation dampers.
19 Chemical corrosion.	Check the compatibility of the tube both with the fluid being pumped and the cleaning product.
20 Operating pressure too high.	Reduce the pump speed. Increase the tube section.
21 Abnormally high temperature.	Check that the shaft of the rollers is assembled in the correct position.
22 Cavitation.	Re-analyse suction conditions.
23 High suction pressure (>3 bar).	Reduce suction pressure.
24 The hose is filled with sediment.	Clean the hose.
25 Clamps insufficiently tightened.	Tighten clamps.
26 Operating equipment torque insufficient.	Increase operating power.
27 Frequency converter torque insufficient.	Increase torque. Check that there is sufficient power supply. Do not operate below a frequency of 12Hz. The motor will start up at less than 12Hz.
28 Blocked pump.	Check that there are no blockages in the pump.



If the problems persist, stop using the pump immediately. Contact the pump manufacturer or their representative.

7. Maintenance

7.1. GENERAL INFORMATION

Like any other machine, this pump requires maintenance. The instructions contained in this manual cover the identification and replacement of spare parts. The instructions have been prepared for maintenance personnel and for those responsible for the supply of spare parts.



Please read Chapter 8. *Technical Specifications* carefully.

All replaced material should be duly eliminated/recycled according to the directives in effect in the area.



ALWAYS disconnect the pump from the power supply before undertaking maintenance work.

7.1.1. Checking the hose.

The flexible hose must be greased regularly (i.e. approximately every 100 hours) with the silicone-based food grease that is supplied with the pump.

Check the tube regularly for signs of significant wear. The hose has an approximate service life of 1,000 hours if the pump has been working under normal operating conditions and has been properly greased. If significant wear is noted, replace the hose in accordance with the instructions in Chapter 7, in the section on Assembling and Dismantling the Pump.

The pump is fitted with a safety system so that whenever a small, auxiliary tank is full due to flexible hose breakage, the pump will stop operating automatically.

7.2. CLEANING



The use of aggressive cleaning products such as caustic soda and nitric acid may cause burns to the skin.

Use rubber gloves during the cleaning process.



Always use protective goggles.

7.2.1. Automatic CIP (cleaning-in-place)

If the pump is installed in a system with a CIP process, it is not necessary to dismantle the pump.

If there is no automatic cleaning process, dismantle the pump as indicated in the *Assembly and Dismantling* section.

Cleaning solutions for CIP processes.

Only use clear water (chlorine-free) to mix with the cleaning agents:

a) Alkaline solution: 1% by weight of caustic soda (NaOH) at 70°C (150°F)

1 Kg NaOH + 100 l. of water = cleaning solution

o

2.2 l. NaOH at 33% + 100 l. of water = cleaning solution

b) Acid solution: 0.5% by weight of nitric acid (HNO₃) at 70°C (150°F)

0.7 litres HNO₃ at 53% + 100 l. of water = cleaning



Check the concentration of the cleaning solutions to avoid deterioration of the pump seals and hose.

To remove any remains of cleaning products, ALWAYS perform a final rinse with clean water on completion of the cleaning process.

7.2.2. Automatic SIP (sterilization-in-place)

The process of sterilization with steam is applied to all the equipment including the pump.



Do NOT start the pump during the process of sterilization with steam.

The parts/materials suffer no damage if the indications specified in this manual are observed.

No cold liquid can enter the pump till the temperature of the pump is lower than 60°C (140°F).

A flow by-pass is recommended to be used in order to assure the flow of sterile product after the pump.

Maximum conditions during the SIP process with steam or overheated water

- | | | |
|----|-------------------|--|
| a) | Max. temperature: | 140°C / 284°F |
| b) | Max. time: | 30 min |
| c) | Cooling: | Sterile air or inert gas |
| d) | Materials: | EPDM / PTFE (recommended)
FPM / NBR (not recommended) |

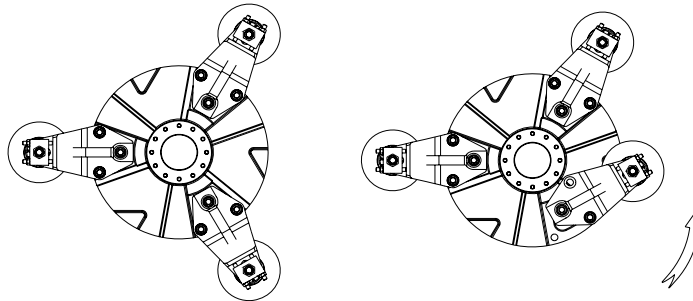
7.3. STORAGE

The pump must be completely emptied of fluid before storage. If possible, avoid exposing the components of the pump to excessively damp environments.



Spare hoses should be stored in a dry place protected from direct sunlight.

If the pump is not used for extended periods of time, one of the three rollers turned and set by two of the three screws should be mounted using the same roller bracket holes. Then turn the roller disc so that neither of the other two rollers does not exert pressure on the flexible hose and damage it (see illustrations below).



Dismantle a roller when the pump is not used for extended periods of time so that a roller does not press on the hose and damage it.

7.4. DISASSEMBLY / ASSEMBLY OF THE PUMP

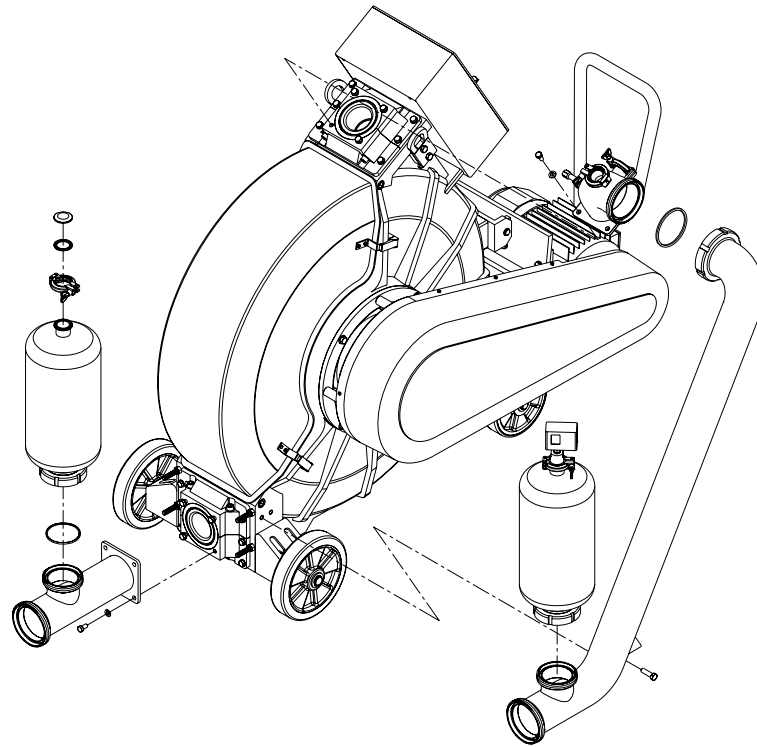
7.4.1. Inlet/outlet pipes and stabiliser tanks

⇐ Disassembly

Remove the screws (52A) that fasten the pump inlet and outlet pipes (98, 98A, 98B) to the stilling basins. Loosen the nuts from the adapter to separate the stilling basins. Loosen nuts (54A) and screws (52D) in order to enable the dismantling of the two parts from the basin (01A) and the o-ring (80A).

⇒ Assembly

First fit the parts that go to make up the stilling basin. Fit the o-ring (80A) into the groove and secure both parts of the basin (01A) with the hexagonal screws (52D), washers (53A) and nuts (54A). Place the cap (85) and/or pressure switch on the delivery pipe. If so required by your application, mount the two basins onto the inlet and outlet pipes (98, 98B) with the nut adapters and seal adapters (91). Place these subassemblies on the main pump assembly and secure them with hexagonal screws (52A) and washers (53F). Moreover, at the bottom, the screws (52E) need to be secured to the outlet pipe (98B).



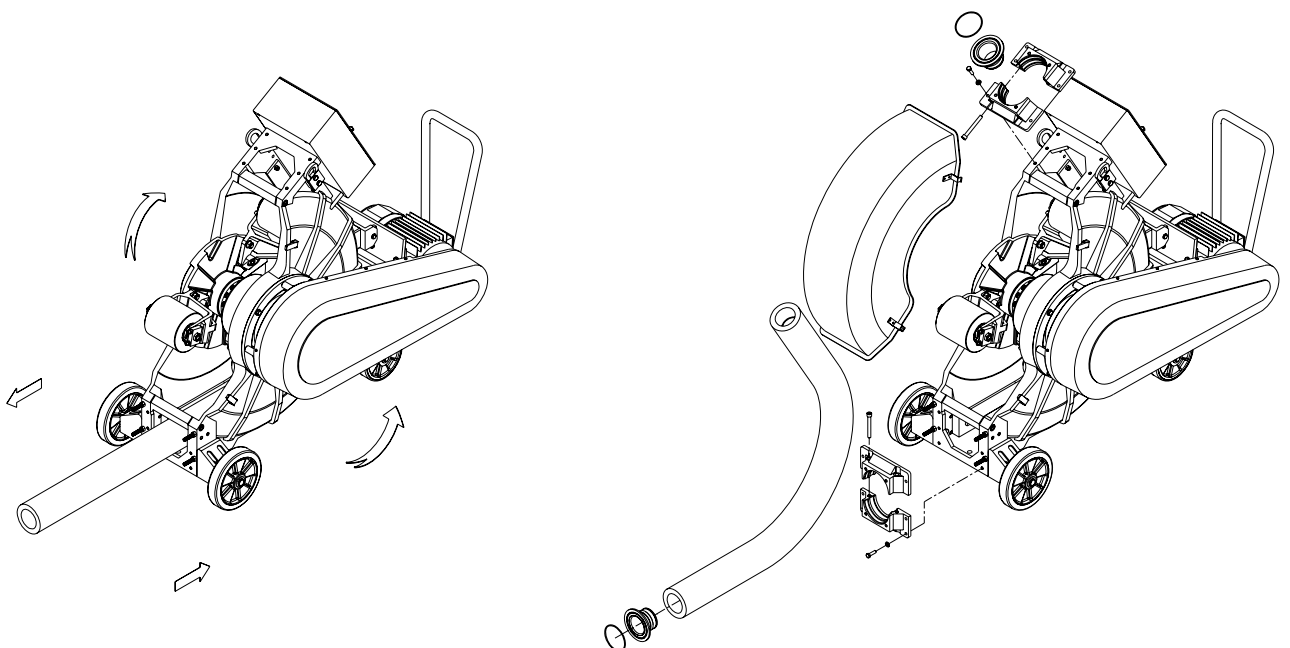
7.4.2. Changing the hose

← Disassembly

First follow the settling basin disassembly procedure as indicated. First, remove the pump cover (03). Loosen allen screws (51C) and remove screws (52C) to enable the dismantling of the flange (33A) and hose adapter (33). Follow the same procedure with both connections. To remove the flexible hose (22), start up the motor in the anti-clockwise direction with the speed at the lowest setting, and remove the hose from the lower connection as illustrated below.

⇒ Assembly

Before fitting the hose, check that the rollers and the inside of the pump housing (01) are greased, and grease them if required. Fit the new hose until it comes into contact with the roller as illustrated below. Start up the motor in the anti-clockwise direction, as seen from the belt side, and as the rollers turn they will gradually move the flexible hose (22) into place. When the hose is fully inside the housing, stop the motor. Fit the o-ring (80) onto the hose adapter (33), and then fit the latter to the end of the hose. Next, fit the hose (22) to the pump housing (01) with the flange (33A) and screws (51C, 52C). Follow the same procedure with both connections.



7.4.3. Changing belts and pulleys

Disassembly

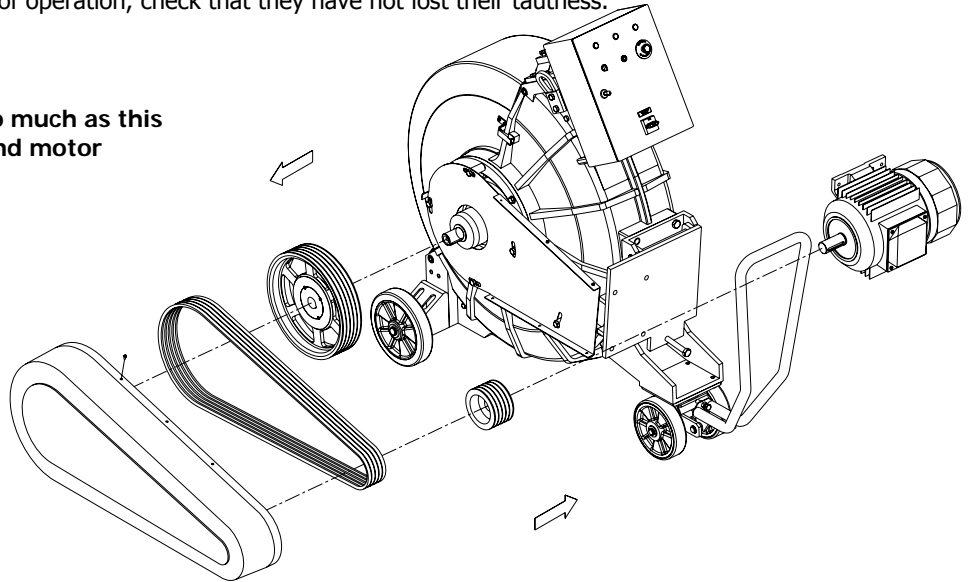
Remove the belt protection (48) by taking out the screws (50). Loosen the belts (105) by loosening the screw (52M) enough for the belts to be removed. Remove the belts (105) and take out the pulleys (104). The pulleys are cone-hubbed with two securing holes and one removal hole.

Assembly

Fit the pulleys (104) into the drive shafts and align them. Fit the five belts (105) and tighten them by screwing the hexagonal screw (52M) as required. After a few hours of operation, check that they have not lost their tautness.



Do not tighten the belts too much as this may damage the reducer and motor bearings.



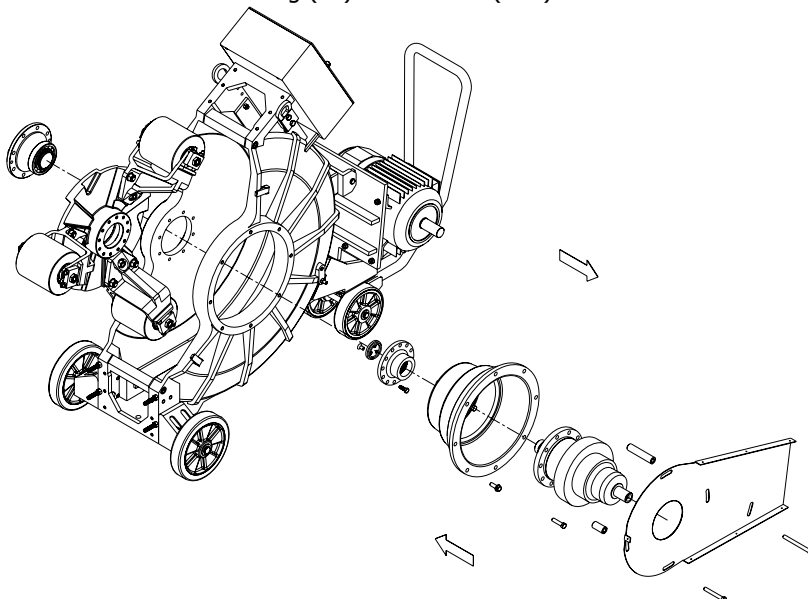
7.4.4. Reducer and roller disc

Disassembly

First dismantle as indicated in the belts and pulleys section. Then remove the screws (52J, 52K) and the belt protection plate will come out (48A), as well as the long (17B) and short (17A) spacers. Remove the pump cover (03). Secure the roller disc (06A) with some slings. Remove the roller disc shaft (05) with its bearing (70) by taking out the screws (52G). Loosen the screws (52B) to take out the roller disc (06A) with the rollers still assembled (02). Remove the screws (52G) and take out the reducer bracket (06) with the reducer still assembled (93). Finally, loosen the countersunk screws in the front reducer washer and remove the flange that is attached to the reducer shaft; remove the nuts (54B) and the screws (52I) to take out the reducer (93).

Assembly

Fit the reducer (93) to the reducer bracket (06) with the screws (52I) and nuts (54B). Fit the flange to the grooved shaft of the reducer (93) and secure it with the washer and countersunk nuts. Fit this group to the pump housing (01) with screws (52G). Fit the roller disc (06A) into the reducer flange alignment and secure it by means of screws (52B), while the disc is held in place. Fit the bearing (70) onto the roller disc shaft (05) and secure it with the elastic ring (66). Place the roller disc shaft (05) into the roller disc (06A) and secure it to the housing (01) with screws (52G).



7.4.5. Rollers



Before dismantling the rollers, measure distance A indicated in the following illustration and respect it when refitting the rollers.

⇐ Disassembly

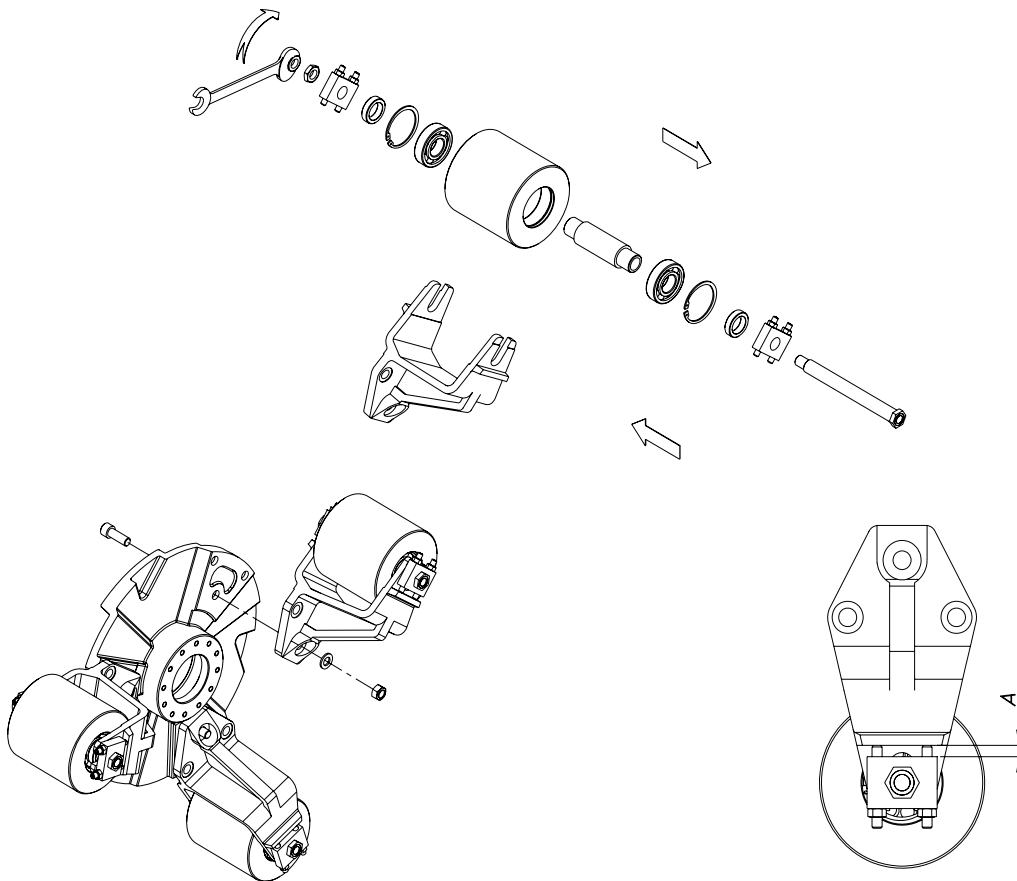
Remove the pump cover (03). Remove the screws (51A) and the roller nuts (54C). Loosen the two nuts (45), which will enable the removal of the adjustment plates (110), roller stop bushing (17) and the roller shaft screw (25). Remove the elastic rings (66A), and give a few light blows with a plastic mallet at the tip of the shaft screw (25) in order to remove one of the bearings (70) leaving the other inside the roller (02). Finally, remove with the bearing (70) that is still in the roller with an extractor.

⇒ Assembly

Fit the two bearings (70) onto the roller shaft (05A) and insert it in the roller (02). Fit the two elastic rings (66A) and roller stop bushings (17). Position the adjustment plates (110) and insert the roller shaft screw (25). Fit a nut (45) on the shaft and fit the whole sub-assembly onto the roller bracket (06B) until the adjustment plate (110) pins (55) reach the stop position, then secure the whole sub-assembly with the nut (45), and secure again with another nut (45).



Dismantle a roller when the pump is not used for extended periods of time so that a roller does not press on the hose and damage it. See section 7.3 in this Chapter.



7.4.6. Hopper (optional)

The hopper of the puma takes two gears that must be greased regularly for have a correct operation through grease nipple (83).



Lubricate the gears of the hopper.



Do not take off the grid to avoid personal damages.

8. Technical Specifications

8.1. TECHNICAL SPECIFICATIONS

Operating temperature range	-10°C to +80°C 14°F to +176°F
Noise level	60-80 dB(A)
Suction / delivery connections	DIN 11851 (standard)



Use special protection when the noise level in the operation area exceeds 85 dB(A).

Pump with two-speed motor

Pump type	Flow rate [m ³ /h]	Max. pressure [bar]	Speed [r.p.m.]	Power [kW]
PV-70	10 – 20	3	25 - 50	6.4 / 4.4
PV-80	15 – 30			8 / 6.2
PVT-70	4 – 20	2,5		6.4 / 4.4
PVT-80	5 – 30			8 / 6.2

Pump with motor and in-built frequency selector

Pump type	Flow rate [m ³ /h]	Max. pressure [bar]	Speed [r.p.m.]	Power [kW]
PV-70	5 – 20	3	9 - 50	5.5
PV-80	7 – 30			7.5
PVT-70	4 – 20	2,5		5.5
PVT-80	5 – 30			7.5

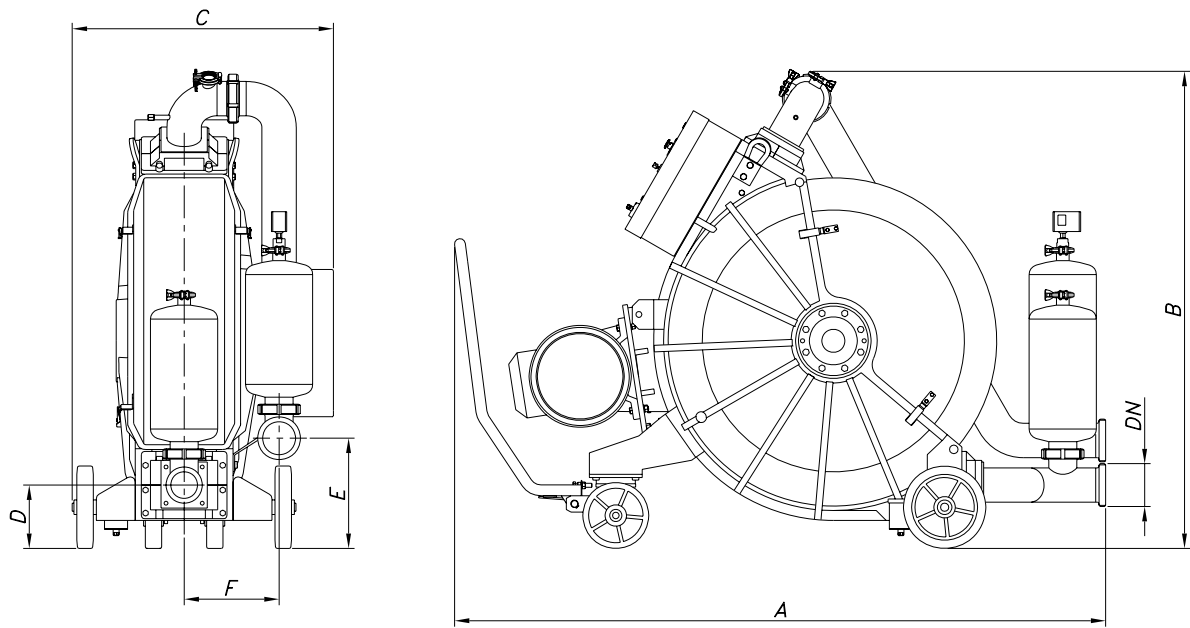
Materials

Parts in contact with the product	AISI 304
Flexible hose.....	NR-A (standard)

8.2. WEIGHTS

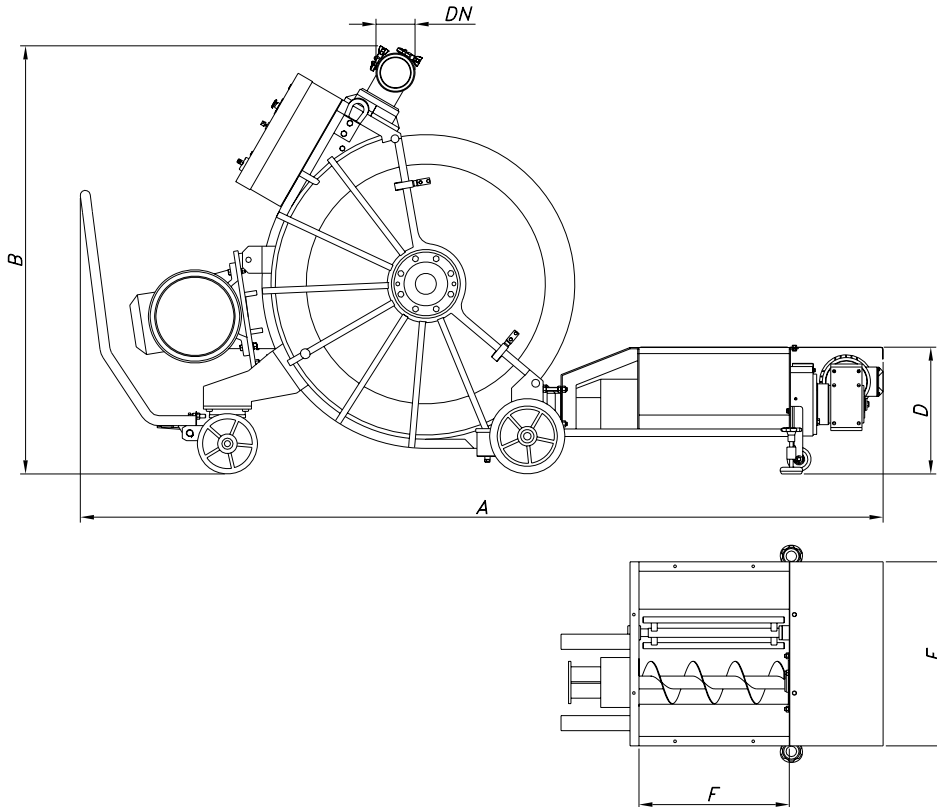
Pump type	Pump weight with motor	
	[Kg]	[lbs]
PV-70	575	1268
PV-80	720	1587
PVT-70	660	1455
PVT-80	815	1800

8.3. PV PUMP DIMENSIONS WITH PULSATION DAMPENING TANKS



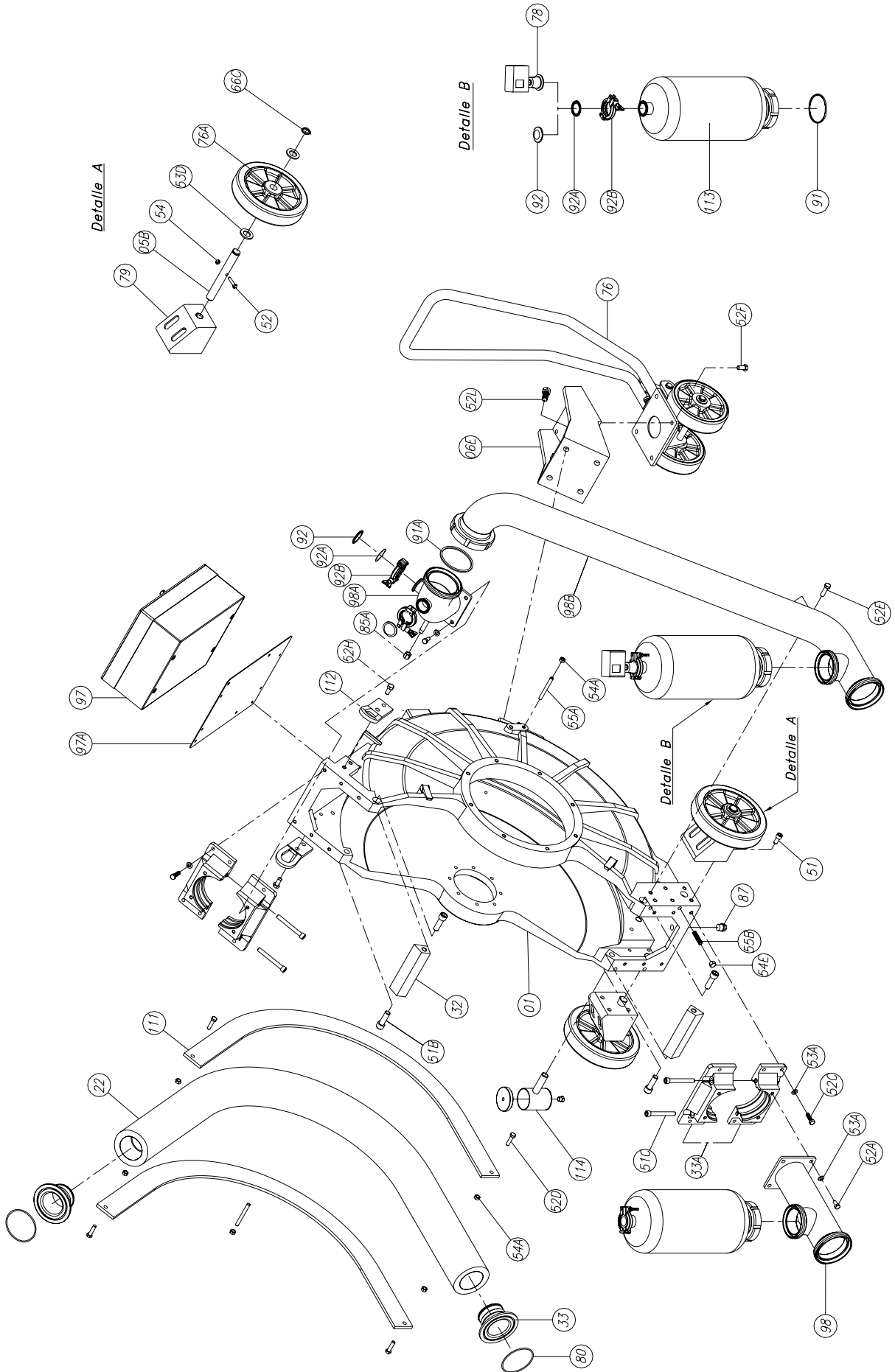
TYPE	DN	A	B	C	D	E	F
PV-70	80	1870	1290	760	180	365	255
PV-80	100	2000	1450	800	195	325	290

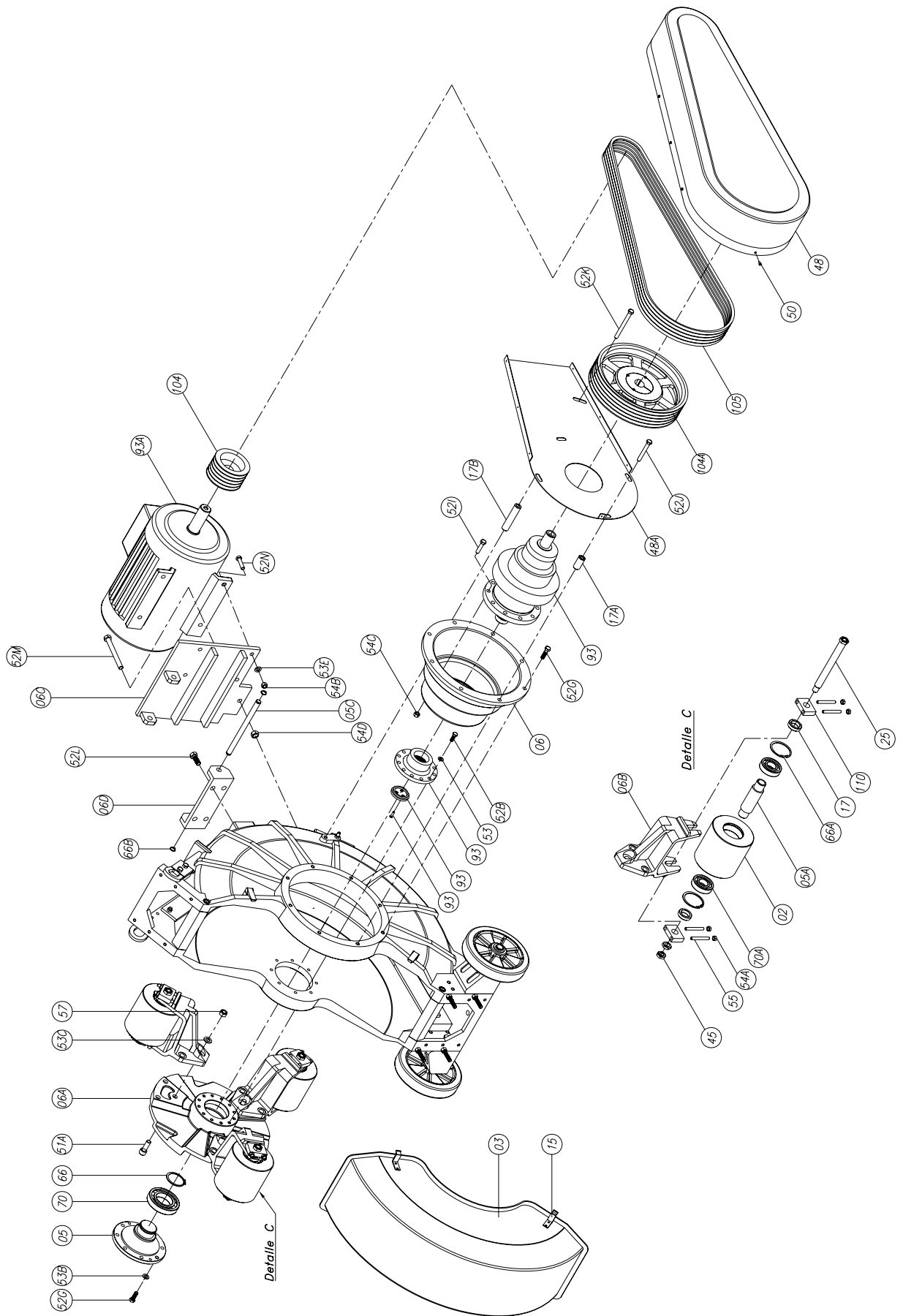
8.4. PVT PUMP DIMENSIONS WITH HOPPER



TYPE	DN	A	B	D	E	F
PVT-70	80	2650	1290	405	610	500
PVT-80	100	2700	1450	420		

8.5. PV-70 I PV-80 PUMP EXPLODED VIEW





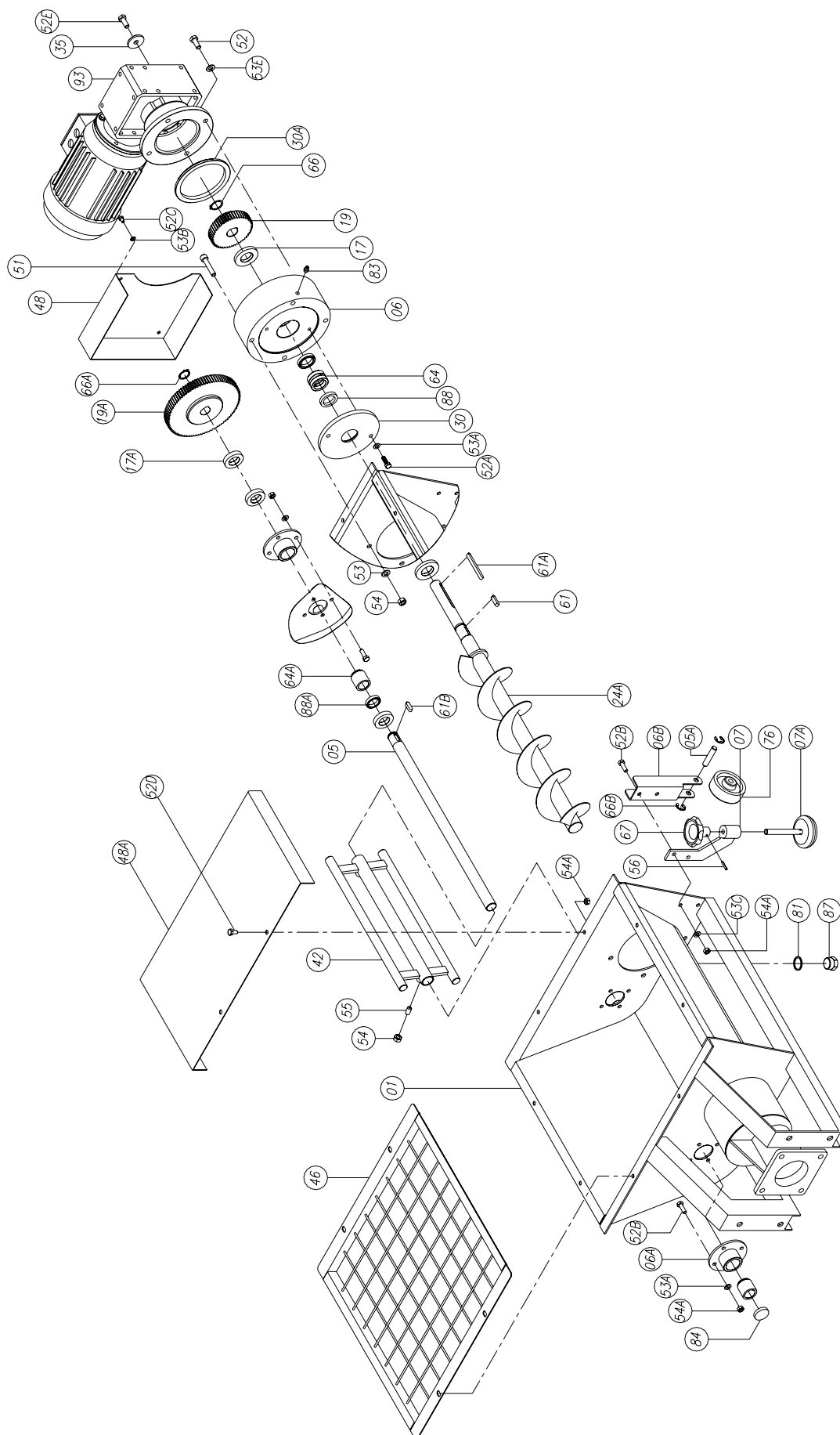
8.6. PV-70 I PV-80 PUMP PARTS LIST

Position	Description	Quantity	Material
01	Pump housing	1	GG-25
02	Roller	3	GG-25
03	Body cap	1	Polyester
05	Roller disc shaft	1	GG-25
05A	Roller shaft	3	F-114
05B	Shaft wheel	2	F-114
05C	Shaft drive support	1	F-114
06	Reducer support	1	GG-25
06A	Roller disc	1	GG-25
06B	Roller support	3	GGG-42/12
06C	Drive support	1	F-112
06D	Drive plate support	1	F-112
06E	Rotary wheel support	1	F-112
15	Seal cover hook	4	AISI 304
17	Roller stop bushing	6	F-114
17A	Pulley protector short spacer	4	F-114
17B	Pulley protector long spacer	1	F-114
22	Flexible hose	* 1	NR-A
25	Roller shaft screw	3	F-124
32	Housing reinforcement	2	F-112
33	Hose adapter	2	AISI 304
33A	Flange	2	GG-25
45	Roller securing nut	6	F-124
48	Belt protection	1	Poliéster
48A	Belt plate protection	1	F-112
50	Screw	7	A2
51	Allen screw	8	A2
51A	Allen screw	9	8.8
51B	Allen screw	4	8.8
51C	Allen screw	4	8.8
52	Hexagonal screw	2	A2
52A	Hexagonal screw	8	A2
52B	Hexagonal screw	12	8.8
52C	Hexagonal screw	12	A2
52D	Hexagonal screw	4	A2
52E	Hexagonal screw	2	A2
52F	Hexagonal screw	4	8.8
52G	Hexagonal screw	12	A2
52H	Hexagonal screw	4	A2
52I	Hexagonal screw	10	8.8
52J	Hexagonal screw	4	8.8
52K	Hexagonal screw	1	8.8
52L	Hexagonal screw	8	A2
52M	Hexagonal screw	1	8.8
52N	Hexagonal screw	4	8.8
53	Flat washer	12	8.8

(*) Recommended spare parts

Position	Description	Quantity	Material	
53A	Grower washer	20	A2	
53B	Grower washer	8	A2	
53C	Flat washer	9	8.8	
53D	Flat washer	4	A2	
53E	Grower washer	4	8.8	
54	Hexagonal nut	2	A2	
54A	Hexagonal nut	8	A2	
54B	Hexagonal nut	4	8.8	
54C	Hexagonal nut	10	8.8	
54D	Hexagonal nut	1	8.8	
54E	Hexagonal nut	8	A2	
55	Allen pin	12	A2	
55A	Guide stop rod	2	A2	
55B	Pin	4	A2	
57	Self-locking nut	9	8.8	
66	Elastic ring	1	Steel	
66A	Elastic ring	6	Steel	
66B	Elastic ring	2	Steel	
66c	Elastic ring	2	Steel	
70	Ball bearing	*	1	Steel
70A	Ball bearing	*	6	Steel
76	Rotary wheel and handle assembly	1	-	
76A	Fixed wheel	2	-	
78	Clamp pressure sensor	1	-	
79	Wheel support	2	F-1	
80	O-ring	*	2	EPDM
85A	Nut cap	1	A2	
87	Drain stopper	1	A2	
91	Adapter seal	*	2	EPDM
91A	Adapter seal	*	1	EPDM
92	Clamp blind ferrule	3	AISI 304	
92A	Clamp joint	4	EPDM	
92B	Clamp	4	AISI 304	
93	Reducer	1	-	
93A	Motor	1	-	
97	Switchboard	1	-	
98	Inlet pipe assembly	1	AISI 304	
98A	Outlet assembly	1	AISI 304	
98B	Outlet pipe assembly	1	AISI 304	
104	Pulley	1	-	
104A	Pulley	1	-	
105	Belt	*	5	-
110	Roller adjustment plate	6	F-114	
111	Tube guide	2	F-1	
112	Eyebolt	2	F-1	
113	Pulsation dampening tank	2	AISI 304	
114	Tube breakage probe assembly	1	-	

8.7. PVT-70 I PVT-80 HOPPER EXPLODED VIEW



8.8. PVT-70 I PVT-80 HOPPER PARTS LIST

Position	Description	Quantity	Material
01	Hopper	1	AISI 304
05	Blade shaft	1	AISI 304
05A	Shaft wheel	2	AISI 304
06	Support	1	Aluminium
06A	Guide	2	AISI 304
06B	Wheel support	2	AISI 304
07	Foot support	2	AISI 304
07A	Non-vibratory foot	2	AISI 304
17	Rotating washer	2	PTFE
17A	Flat washer	3	PTFE
19	Reduction gear	1	F-114
19A	Blade pinion	1	F-114
24A	Rotating auger	1	AISI 304
30	Support guide plate	1	AISI 304
30A	Reducer guide ring	1	F-114
35	Shaft stop washer	1	AISI 304
42	Blade	1	AISI 304
46	Grid	1	AISI 304
48	Shield	1	AISI 304
48A	Drive protection	1	AISI 304
51	Allen screw	4	A2
52	Hexagonal screw	3	A2
52A	Hexagonal screw	2	A2
52B	Hexagonal screw	12	A2
52C	Hexagonal screw	2	A2
52D	Hexagonal screw	4	A2
52E	Hexagonal screw	1	A2
53	Flat washer	4	A2
53A	Flat washer	10	A2
53B	Flat washer	2	A2
53C	Grower washer	4	A2
53E	Flat washer	3	A2
54	Hexagonal nut	6	A2
54A	Hexagonal nut	16	A2
55	Pin	2	A2
56	Flexible pin	2	F-143
61	Key	1	F-114
61A	Key	1	F-114
61B	Key	1	F-114
64	Rotating guide bushing	1	Bronze
64A	Blade guide bushing	2	PTFE
66	Elastic ring	1	Steel
66A	Elastic ring	1	Steel
66B	Anillo autoblocante	4	Acero
67	Tightening knob	2	Plastic
76	Fixed wheel	2	Nylon
81	Stopper gasket	1	PTFE + glass
83	Grease nipple	1	A2
84	Valve stopper	1	NBR
87	Stopper	1	A4
88	Lock	2	NBR
88A	Lock	1	NBR
93	Gearbox drive	1	-

(*) Recommended spare parts

Насосы для виноделия — Перистальтические насосы PV PVD PVT PVDT

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Замечания

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