Pedrollo CPm620

Pedrollo CPm620 Centrifugal Pump Instruction Manual

Model: CPm620 | 1.0 HP | 1PH

1. Product Overview

The Pedrollo CPm620 is a single-phase centrifugal pump designed for reliable and efficient transfer of clean water and non-chemically aggressive liquids. Its robust construction makes it suitable for a variety of domestic, civil, and agricultural applications, including water supply systems, pressure sets, irrigation, and liquid transfer.

Key features and application limits include:

- **Liquid Type:** Clean Water
- **Uses:** Civil, Industrial, Agriculture
- **Applications:** Water Supply Systems, Air Conditioning Systems, Pressure Systems, Cooling Systems, Irrigation Pumps, Liquids Transfer
- **Typology:** Surface Pump
- **Temperature of the liquid:** From -10 °C to +90 °C
- **Ambient Temperature:** From -10 °C to +40 °C
- **Manometric suction lift:** Up to 7 meters
- **Max. working pressure:** 10 bar

2. Safety Information

Read all instructions carefully before installation and operation. Failure to follow these instructions may result in serious injury, property damage, or pump malfunction.

- Always disconnect power before performing any installation, maintenance, or repair work.
- Ensure the electrical supply matches the pump's voltage and frequency requirements (110/220V, 60Hz).
- All electrical connections must be performed by a qualified electrician and comply with local codes.

- Install the pump in a well-ventilated area, protected from inclement weather, freezing temperatures, and direct sunlight.
- Do not pump flammable, corrosive, or explosive liquids. This pump is designed for clean water only.
- Keep children and unauthorized personnel away from the pump during operation.
- Ensure proper grounding to prevent electrical shock.

3. Setup and Installation

Proper installation is crucial for the pump's performance and longevity.

3.1 Location

Install the pump in an enclosed environment or at least sheltered from rain, snow, and direct sunlight. The ambient temperature should remain between -10 °C and +40 °C. Ensure adequate ventilation around the motor for cooling.

3.2 Mounting

Securely mount the pump on a solid, level foundation to minimize vibration and noise. Use appropriate bolts and washers. Ensure the pump is easily accessible for maintenance.

3.3 Piping Connections

- Use pipes of adequate diameter to minimize friction losses.
- Install a foot valve with a strainer at the end of the suction pipe to prevent debris from entering the pump and to maintain prime.
- Ensure all connections are airtight to prevent air leaks, which can cause loss of prime.
- Install isolation valves on both suction and discharge lines for easier maintenance.
- Support piping independently to avoid placing stress on the pump casing.

3.4 Electrical Connection

Connect the pump to a dedicated electrical circuit with appropriate overcurrent protection. Verify the voltage (110V or 220V) and frequency (60Hz) match the pump's requirements. Ensure proper grounding according to local electrical codes.

3.5 Priming the Pump

Before initial start-up, the pump casing and suction line must be completely filled with water. Open the priming plug (if available) or slowly fill the pump through the discharge port until water overflows. Close the plug securely before starting the pump.

4. Operating Instructions

Follow these steps for safe and effective pump operation.

4.1 Initial Start-up

- Ensure the pump is properly primed.
- Open the discharge valve fully.
- Turn on the power supply to the pump.
- Monitor the pump for unusual noises or vibrations. The pump should start smoothly and begin

pumping water.

4.2 Normal Operation

During operation, periodically check for:

- Consistent water flow and pressure.
- Absence of excessive noise or vibration.
- No leaks from connections or the pump casing.
- Motor temperature (should not be excessively hot to the touch).

4.3 Shut-down

- Close the discharge valve.
- Turn off the power supply to the pump.
- For extended periods of non-use or during freezing conditions, drain the pump and piping to prevent damage.

5. Maintenance

Regular maintenance ensures optimal performance and extends the pump's lifespan.

5.1 Routine Checks

- **Monthly:** Inspect for leaks, unusual noises, or vibrations. Check electrical connections for signs of wear or corrosion.
- **Annually:** Inspect the impeller for wear or blockages. Check the mechanical seal for leaks. Clean any debris from the motor's cooling fins.

5.2 Winterization

If the pump is exposed to freezing temperatures, it must be drained completely to prevent damage from ice expansion. Disconnect power, open drain plugs, and remove any remaining water from the casing and pipes. Store in a dry, frost-free location if possible.

5.3 Cleaning

Keep the exterior of the pump clean and free of dust and debris to ensure proper motor cooling.

6. Troubleshooting

This section addresses common issues you might encounter.

Problem	Possible Cause	Solution
Pump does not start	No power; Blown fuse/tripped breaker; Motor overload; Seized impeller	Check power supply; Reset breaker/replace fuse; Allow motor to cool; Inspect impeller for obstructions.
Pump runs but no water or low flow	Pump not primed; Air leak in suction line; Clogged foot valve/strainer; Impeller damage; Suction lift too high	Re-prime the pump; Check all suction connections for leaks; Clean foot valve/strainer; Inspect/replace impeller; Verify suction lift is within limits (max 7m).

Problem	Possible Cause	Solution
Excessive noise or vibration	Cavitation (air in water); Misalignment; Worn bearings; Debris in pump	Ensure pump is fully primed and suction line is airtight; Check mounting and alignment; Contact qualified technician for bearing inspection; Clear any debris.
Pump leaks	Loose connections; Damaged mechanical seal; Cracked casing	Tighten connections; Replace mechanical seal; Contact service for casing repair/replacement.

7. Specifications

Detailed technical specifications for the Pedrollo CPm620 Centrifugal Pump.

- **Brand:** Pedrollo
- **Model:** CPm620
- **Horsepower:** 1.0 HP
- **Voltage:** 110/220V
- **Frequency:** 60Hz
- **Material:** Stainless Steel (Material Type)
- **Pump Type:** Centrifugal
- **Maximum Suction Lift:** 7 Meters
- **Maximum Working Pressure:** 10 bar
- **Liquid Temperature Range:** -10 °C to +90 °C
- **Ambient Temperature Range:** -10 °C to +40 °C
- **Color:** Blue
- **UPC:** 722777873525

8. Performance Data

The following graph illustrates the characteristic curves and performance data for the Pedrollo CPm620 pump at 60 Hz with a rotational speed (n) of 3450 min^{-1} and a suction head (HS) of 0 meters. This data helps in understanding the pump's head (H) versus flow rate (Q) relationship under various operating conditions.

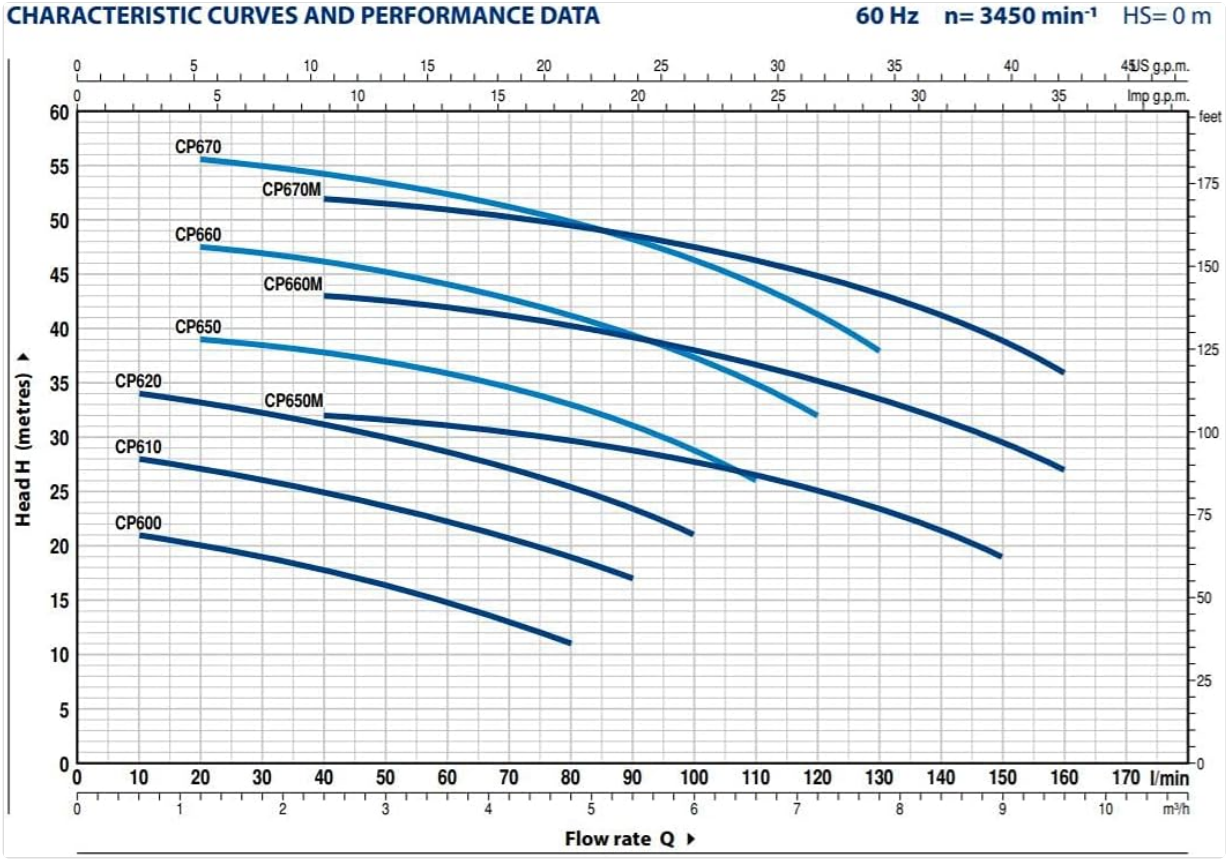
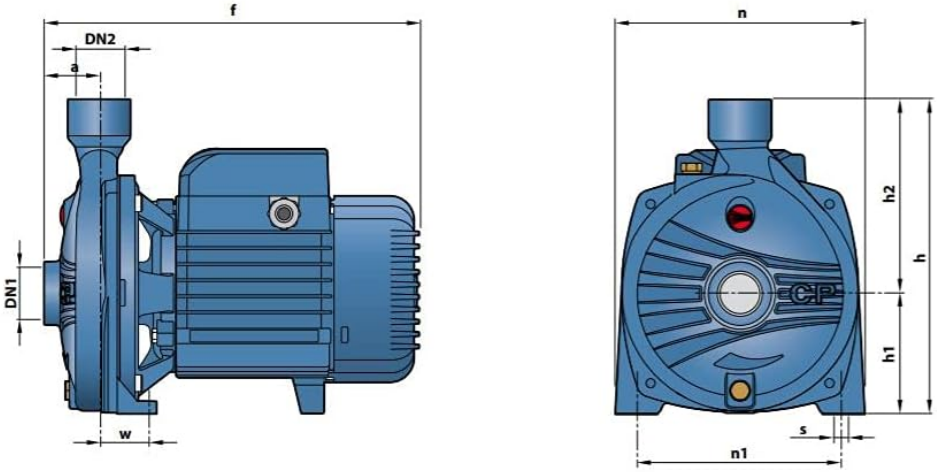


Image 1: Characteristic Curves and Performance Data for Pedrollo Centrifugal Pumps, including CPm620. The graph shows Head (H in meters) on the Y-axis against Flow rate (Q in l/min or m³/h) on the X-axis for different pump models.

9. Dimensions and Weight

Refer to the diagram and table below for the physical dimensions and weight of the Pedrollo CPm620 pump. All dimensions are in millimeters (mm) and weights in kilograms (kg).

DIMENSIONS AND WEIGHT



MODEL		PORTS		DIMENSIONS mm									kg	
Single-phase	Three-phase	DN1	DN2	a	f	h	h1	h2	n	n1	w	s	1~	3~
CPm 600	CP 600	1"	1"	42	258	205	82	123	165	135	41	10	7.0	7.7
CPm 610	CP 610												8.5	7.8
CPm 620	CP 620				286	240	92	148	190	160	38		11.0	10.9
CPm 650 - 650M	CP 650 - 650M	1¼"	1"	51	367	260	110	150	206	165	44.5	11	17.8	17.6
CPm 660 - 660M	CP 660 - 660M												18.9	17.9
CPm 670 - 670M	CP 670 - 670M				367/387								20.9	22.5

Image 2: Dimensional drawing of Pedrollo Centrifugal Pumps (side and front views) with a corresponding table listing dimensions (a, f, h, h1, h2, n, n1, w, s) and weight for various models, including CPm620.

For the CPm620 model (Single-phase), refer to the row labeled 'CPm 620' in the table within the image for specific dimensions and weight.

10. Warranty and Support

For warranty information, technical support, or service inquiries, please contact your authorized Pedrollo dealer or the point of purchase. Keep your purchase receipt and pump model information readily available when contacting support.

Always ensure that any repairs or servicing are carried out by qualified personnel using genuine Pedrollo spare parts to maintain warranty validity and ensure safe operation.