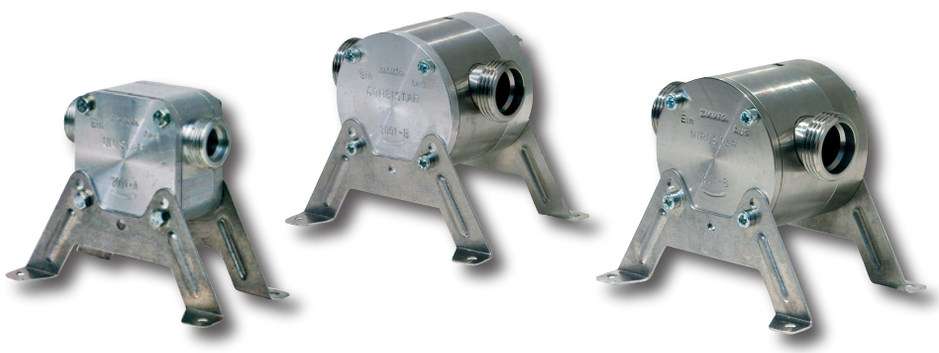
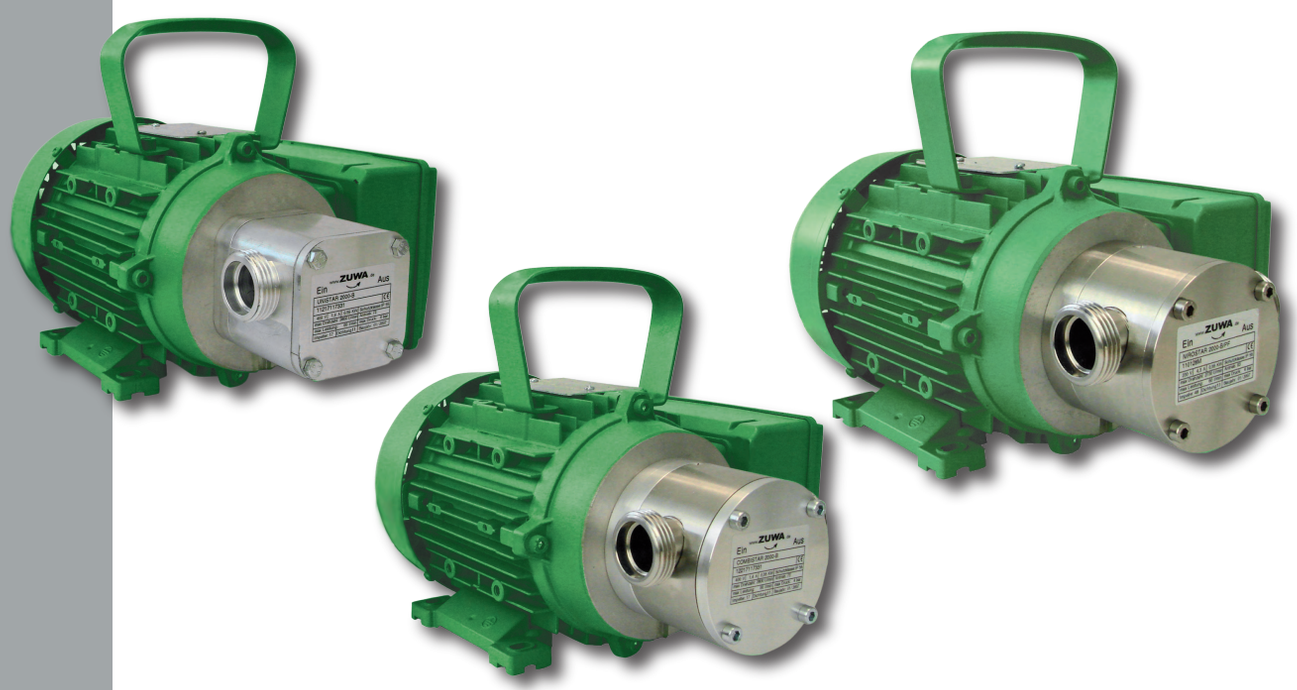
ZUWA

Impeller Pumps

one Design — three Types





UNISTAR • COMBISTAR • NIROSTAR

ZUWA Flexible Impeller Pumps

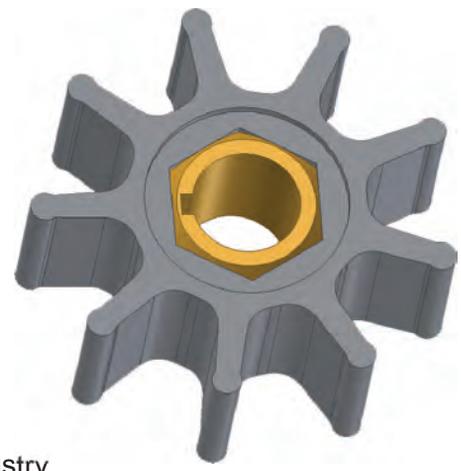
ZUWA-Zumpe GmbH is a family owned and run company with more than 60 years of experience in pump manufacturing. We are in constant communication with our customers both locally and abroad and are able to provide them with information regarding all questions concerning pumps. Taking our customers requirements into consideration and continually improving our products enables us to provide and guarantee first class service and quality for all our products.

With our in-house production we are able to meet the specific requirements of our customers, enabling us to design and purpose build pumps and specific pump applications. Our experienced staff provides an efficient and reliable service to our customers.

Applications and Function

Applications

- Galvanising
- Workshop, machine shop
- Biotechnology
- Heating and sanitary
- Agriculture and horticulture
- Water and sewage treatment
- Boating, marine engineering
- Food and beverage industry
- Chemical, pharmceutical and cosmetics industry



impeller wheel type A
in full-scale: 56 mm

Features Impeller Pumps

Features

High capacity

- flow rate 3 - 730 L/min
- dry self-priming up to a suction head of max. 3 metres (pump filled with liquid up to 7 metres)
- no filling required prior to operation
- containers can be drained almost completely

Versatile

- variable speed range from 150 up to 3.000 rpm
- impeller, seal and housing materials can be selected according to application and requirement

Gentle

- pulsation-free transport
- smaller amounts of air bubbles can be handled

Sturdy

- suitable for liquids containing solids
- suitable also for highly viscous liquids like oil or honey (up to 20.000 mPas)
- approved liquid temperature max. 90°C
- short dry run of up to one minute is tolerated

Reliable

- tested and rated for continuous duty
- long-life

Easy Maintenance

- low operating costs
- quick and easy assembly and disassembly
- replacement parts individually available

ZUWA Impeller Pumps

Three Pump Types

- UNISTAR: A multi-purpose pump designed for transferring clean or contaminated liquids. Not suitable for handling abrasive or corrosive fluids.
- COMBISTAR: This pump is particularly suitable for all fluids that may also contain abrasive particles. It is an economic alternative to the NIROSTAR series for transferring abrasive or slightly corrosive fluids.
- NIROSTAR: A high quality stainless steel pump with numerous applications in industrial plants and production facilities, the appropriate choice for transferring corrosive fluids.

Pumps with drive

ZUWA Impeller Pumps are available with electric motors of various specifications. The pump housing can either be directly flanged to the motor or is connected via a special adapter housing.

Frequency converter

A useful option for impeller pumps is the combination of the electric drive with a frequency converter. This allows for speed regulation enabling exact control of the flow rate. The rotation of the impeller can also be reversed if required.

directly flanged

with adapter housing only for types A and B

with frequency converter

Pumps without drive units

All our pumps are also available without electric motors, enabling the pump to be connected to any type of alternative drive unit.
There are various drive options:

- electric drill or screw driver
- V-belt pulley
- gearbox
- hydraulic motor
- pneumatic drive

pump head

with electric drill

with V-belt pulley

Optional Features

Dry Run Protection

Dry run protection

For impeller pumps of the series 2000-A and 2000-B a dry run protection is available.
To protect the impeller a sensor switch interrupts the power supply before overheating. A reset button restarts the pump after eliminating the fault.
Easy retrofitting of existing pumps.

Pressure Switch

Pressure switch New

The pressure switch shuts off the pump when reaching a preset pressure level.
As soon as the pressure drops again by 30% the pump automatically starts anew.

- switching pressure: adjustable from 1-10 bar
- connection: ¼”
- switch housing: stainless steel

Flow Control

Flow control New

With flow control the flow rate of a pump can be controlled and adjusted within a specified range.
A flow indicator is integrated in the housing.

- flow rate: 8 - 30 L/min or 10 - 40 L/min
- connection: 2 x 1" male thread
- max. operating pressure: 10 bar
- material: brass (approved for drinking water)

Materials

	pump housing	pump cover*	pump shaft	rotary shaft seal	rotating mech. seal	impeller			
						NBR	EPDM	FKM	CR
UNISTAR 2000-A	AlMgSi1	AlMgSi1	NIRO 1.4401	✓	✗	✓	✶	✶	✶
UNISTAR 2000-B				✓	✗	✓	✶	✶	✶
UNISTAR 2001-A			NIRO 1.4571	✓	✗	✓	✶	✶	✶
UNISTAR 2001-B				✓	✗	✓	✶	✶	✶
COMBISTAR 2000-A	NIRO 1.4571		NIRO 1.4401	✓	✗	✓	✶	✶	✶
COMBISTAR 2000-B				✓	✗	✓	✶	✶	✶
COMBISTAR 2001-A			NIRO 1.4571	✓	✗	✓	✶	✶	✶
COMBISTAR 2001-B				✓	✗	✓	✶	✶	✶
NIROSTAR 2000-A		NIRO 1.4571	NIRO 1.4571	✓	✗	✓	✶	✶	✶
NIROSTAR 2000-B				✓	✗	✓	✶	✶	✶
NIROSTAR 2001-A			NIRO 1.4571	✓	✗	✓	✶	✶	✶
NIROSTAR 2001-B				✓	✗	✓	✶	✶	✶
NIROSTAR 2000-C	NIRO 1.4401		✗	✗	✓	✓	✶	✗	✶
NIROSTAR 2000-D	NIRO 1.4301	NIRO 1.4301	✗	✗	✓	✓	✶	✗	✶
NIROSTAR 2000-E			✗	✗	✓	✓	✶	✗	✶
NIROSTAR 2000-F			✗	✗	✓	✓	✶	✗	✶

✔ = standard ✗ = not available ✶ = upon request

* for UNISTAR and COMBISTAR: to protect the aluminium pump covers the pump chamber is sealed with stainless steel plates (1.4404).

Material Specifications of Flexible Impeller Blades

- **NBR** /Acrylonitrile-Butadiene-Caoutchouc (Perbunan®, Buna-N®):
  For diesel, mineral oil and grease.
  High impact resilience and good mechanical resistance,
  best choice for high pressure applications.
- **EPDM** /Ethane-Propylene-Dien-Caoutchouc (Keltan®, Buna Ep®):
  For high temperature, for acids and bases.
  High elasticity and very good mechanical resistance.
- **CR** /Chloroprene-Caoutchouk (Neoprene®, Bayprene®):
  Preferably used for applications in the food industry.
  Flame resistant, good resistance to aging and tear.
- **FKM** oder **FPM** /Fluoric-Caoutchouc (Viton®, Fluorel®):
  For high temperatures.
  Very good chemical resistance, less mechanical resistance.

UNISTAR

A multi-purpose pump designed for transferring clean or contaminated fluids without abrasive particles (suitable for all non-corrosive and non-abrasive fluids).

UNISTAR 2000-A
UNISTAR 2000-B

maximum flow rate:
UNISTAR 2000-A: 30 litres/min (1800 litres/h)
UNISTAR 2000-B: 60 litres/min (3600 litres/h)

UNISTAR 2001-A
UNISTAR 2001-B

maximum flow rate:
UNISTAR 2001-A: 30 litres/min (1800 litres/h)
UNISTAR 2001-B: 60 litres/min (3600 litres/h)

Suitable for*:
water
contaminated water
seawater
diesel, biodiesel
vegetable oils
heating and engine oils
detergents
antifreeze
heat transfer medium
*providing pump material is not affected

Applications:
filling solar loops
irrigation
rainwater harvesting
domestic water supply
de-watering basements
transferring fluids
draining waste oil
sewerage disposal
fuelling vehicles
car wash
draining pond/pool

COMBISTAR

This pump is particularly suitable for all fluids that may also contain abrasive particles. It is an economic alternative to the NIROSTAR series for transferring abrasive or slightly corrosive liquids.

Suitable for*:
grinding emulsions
coolant
lime water
diluted soluble oil
galvanising sludge
contaminated oil
descaler
*providing pump material is not affected

Applications:
cleaning of equipment
dispose of oil
whitewashing cowsheds
draining tanks
cleaning containers
galvanising tanks

COMBISTAR 2000-A
COMBISTAR 2000-B

maximum flow rate:
COMBISTAR 2000-A: 30 litres/min (1800 litres/h)
COMBISTAR 2000-B: 60 litres/min (3600 litres/h)

COMBISTAR 2001-A
COMBISTAR 2001-B

maximum flow rate:
COMBISTAR 2001-A: 30 litres/min (1800 litres/h)
COMBISTAR 2001-B: 60 litres/min (3600 litres/h)

NIROSTAR

A high quality stainless steel pump with numerous applications in industrial plants and production facilities, the appropriate choice for transferring corrosive fluids. Often used in food and beverage industry.

with motor adapter and star handles upon request for types A and B

directly flanged

NIROSTAR 2000-A
NIROSTAR 2000-B

maximum flow rate:
NIROSTAR 2000-A: 30 litres/min (1800 litres/h)
NIROSTAR 2000-B: 60 litres/min (3600 litres/h)

NIROSTAR 2001-A
NIROSTAR 2001-B

maximum flow rate:
NIROSTAR 2001-A: 30 litres/min (1800 litres/h)
NIROSTAR 2001-B: 60 litres/min (3600 litres/h)

Quick Release Star Handles for Easy Maintenance

The quick release star handles, available for all NIROSTAR pumps shown on this page, allow for easy opening of the pump by hand without using tools. For this operation it is not necessary to remove the pump from its installed position. This provides an easy access for cleaning, inspection and maintenance.

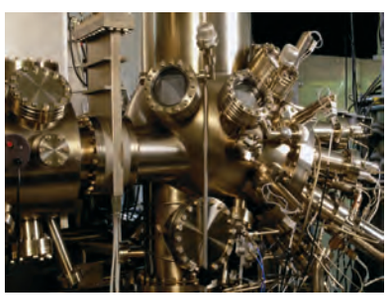
NIROSTAR

Suitable for*:
food
beverage
mash
chemicals
acids
bases
liquid fertilizers
dyes
glues
vegetable oils
surface treatment
*providing pump material is not affected

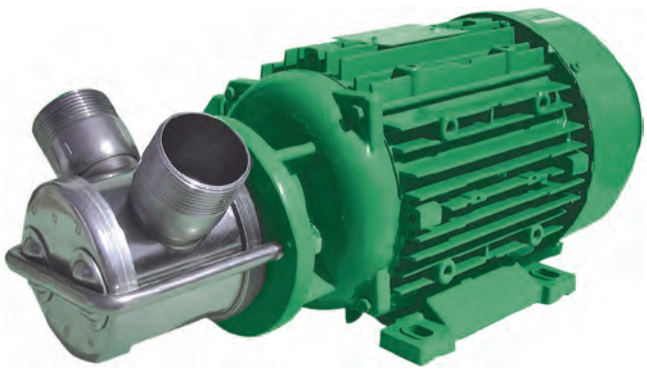
Applications:
fluid transfer
filtration
metering, dosing
filling
draining

NIROSTAR 2000-C

maximum flow rate:
NIROSTAR 2000-C: 96 litres/min (5760 litres/h)



NIROSTAR



NIROSTAR 2000-D

maximum flow rate:
NIROSTAR 2000-D: 166 litres/min (9960 litres/h)

Suitable for*:
food
beverage
mash
chemicals
acids
bases
liquid fertilizers
dyes
glues
vegetable oils
surface treatment
*providing pump material is not affected

NIROSTAR 2001-D
NIROSTAR 2001-E
NIROSTAR 2001-F

maximum flow rate:
NIROSTAR 2001-D: 115 litres/min (6900 litres/h)
NIROSTAR 2001-E: 375 litres/min (22.500 litres/h)
NIROSTAR 2001-F: 730 litres/min (43.800 litres/h)

Please note that illustrations in this brochure may depict optional accessories that are not included in standard equipment.
All information subject to change without notice. Not responsible for typographical errors.

NIROSTAR

NIROSTAR 2000-E

Applications:
medium transfer
filtration
metering, dosing
filling
draining

maximum flow rate:
NIROSTAR 2000-E: 375 litres/min (22.500 litres/h)

NIROSTAR 2000-F

maximum flow rate:
NIROSTAR 2000-F: 730 litres/min (43.800 litres/h)

NIROSTAR with Frequency Converter

NIROSTAR 2000-C with frequency converter (frequency converter optional for all NIROSTAR-pumps)

Features:
Bypass valve for flow regulation
Electronic flow meter stainless steel, particularly suitable for food and acids, different sizes from ¾ “ up to 3“ port diameter
Frequency converter with 15 m cable and remote control for speed regulation and reverse of rotational direction

NIROSTAR with Gearbox Motor

NIROSTAR 2000-F with gearbox motor

Features:
single-, two-speed or variably adjustable gearbox motor

NIROSTAR with Hydraulic Motor

NIROSTAR 2001-E with hydraulic motor

Features:
hydraulic motor for connection to hydraulic systems of commercial vehicles

Drum Pump for Battery Drive

Extremely lightweight and efficient pump for mobile applications with battery drive, 12 or 24 Volt. Designed for continuous operation.

Features:
dry self-priming impeller pump, three-pin connector plug, On/Off switch with thermal motor protection, 2” drum connection (optional), weight only 3.1 kg

drum and battery not included

connector plug and On/Off-switch

Flat Suction Kit

Effective aid for flooded basements. Available also with oil resistant hose for oil contaminated fluids.

Applications:
- dewatering basements
- drain flat roofs
- de-sludge ponds

Features:
dry self-priming impeller pump UNISTAR 2000-B, spiral hose, flat suction mat, euro container with cover, pump control (optional)

Watering Cart

Low noise watering and fertilizing of large areas with 12/24 V battery drive.

Features:
UNISTAR 2000-A, ZUMATIC Pump Control switching the pump on and off automatically, 100 litre tank

battery not included

pump with pump control

Solarcheck Mobilcenter and Solar Filling Pump

Solarcheck Mobilcenter

Solar filling pump

Solar filling unit for heating contractors
flushing, venting and filling heat transfer medium into thermal solar systems in just one procedure

Features:
dry self-priming impeller pump, 30 litre tank, temperature resistant hose, hose holder, pneumatic wheels for easy handling

various extensions:

- multifunction valve for mixing heat transfer medium easily onsite
- accessory kit for filling ground collectors of heat pumps
- filter kit for water heating installations
- remote control for pump

Pump kit with handle, filter and manual drain valve - small and economic solution- for filling and flushing solar loops

Mobile Pump Unit

For easy transport of impeller pump and liquid.

Applications:
filling
draining
transfer of fluids

Features:
UNISTAR, COMBISTAR or NIROSTAR,
30 litre tank,
large pneumatic wheels

hose not included

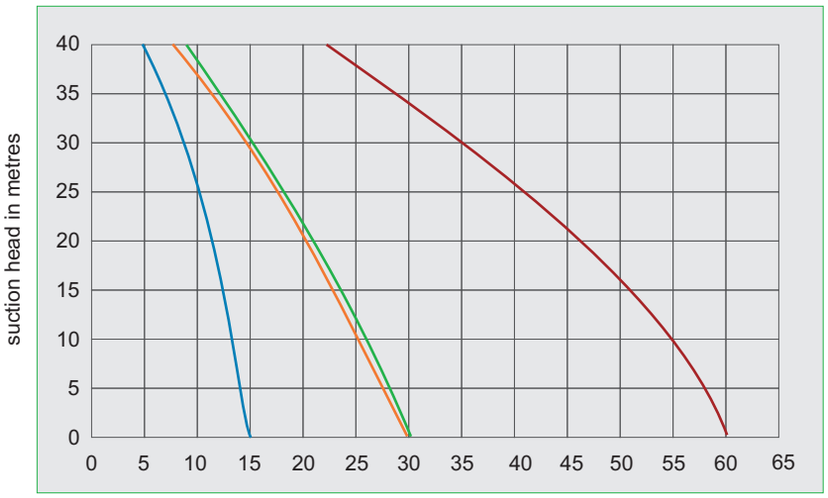
Technical Details

			UNISTAR 2001-A	UNISTAR 2001-B	UNISTAR 2000-A	UNISTAR 2000-B	COMBISTAR 2001-A	COMBISTAR 2001-B	COMBISTAR 2000-A	COMBISTAR 2000-B	NIROSTAR 2001-A	NIROSTAR 2001-B	NIROSTAR 2000-A	NIROSTAR 2000-B	NIROSTAR 2000-C	NIROSTAR 2001-D	NIROSTAR 2000-D	NIROSTAR 2001-E	NIROSTAR 2000-E	NIROSTAR 2001-F	NIROSTAR 2000-F
litres/minute max.			30	60	30	60	30	60	30	60	30	60	30	60	96	115	166	375	375	730	730
pressure in bar max.			4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	2	2	2	2
connections in/out*			¾”	1”	¾”	1”	¾”	1”	¾”	1”	¾”	1”	¾”	1”	1¼”	1½”	1½”	2”	2”	2½”	2½”
motors	230 V	2800 rpm	without motor		✓	✓	without motor		✓	✓	without motor		✓	✓	✗	without motor	✗	without motor	✗	without motor	✗
		1400 rpm													✓						
		900 rpm			✗	✗			✗	✗			✗	✗			✓				
	400 V	2800 rpm			✓	✓			✓	✓			✓	✓	✗		✗		✗		✗
		1400 rpm													✓		✓				
		900 rpm																	✓		
		700 rpm			✗	✗			✗	✗			✗	✗			✗		✗		✓
		600 rpm													✗						
		470 rpm																	✓		
	12 V	3000 rpm			✓	✓			✓	✓			✓	✓	✗		✗		✗		✗
		1500 rpm																			
		900 rpm			✗	✗			✗	✗			✗	✗	✓						
	24 V	3000 rpm			✓	✓			✓	✓			✓	✓	✗		✗		✗		✗
		1500 rpm																			
		900 rpm			✗	✗			✗	✗			✗	✗	✓						
	FC**	rpm			max. 2800	max. 2800			max. 2800	max. 2800			max. 2800	max. 2800	max. 1400		max. 1400		max. 900		max. 600

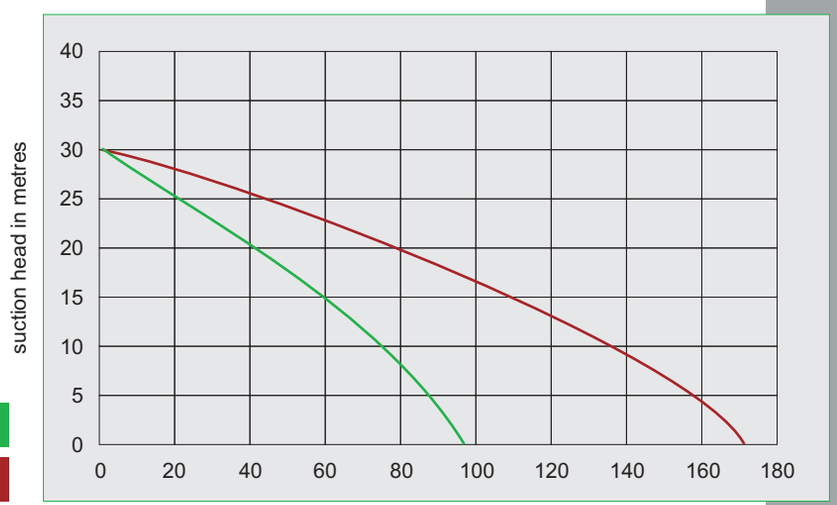
* with different thread sizes upon request
** FC = motor with frequency converter

✓ = yes ✗ = no

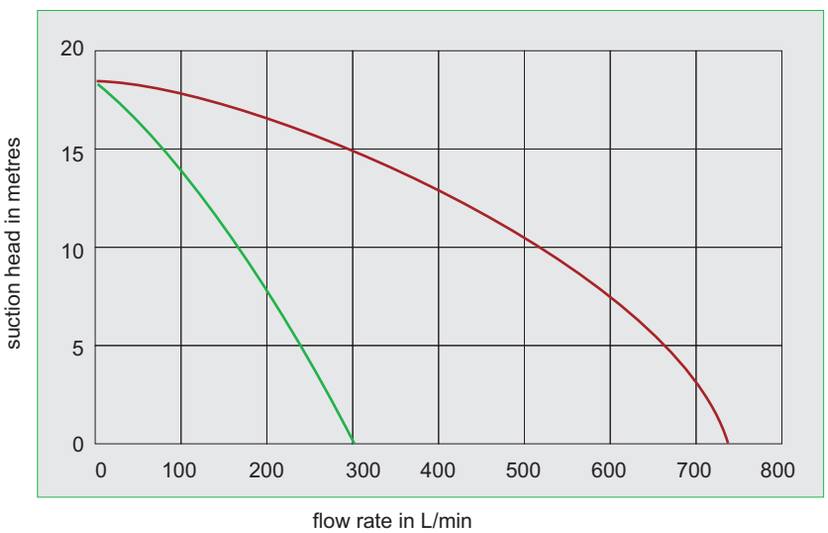
Performance data



type A at 1400 rpm
type B at 1400 rpm
type A at 2900 rpm
type B at 2900 rpm



NIROSTAR C at 1400 rpm
NIROSTAR D at 1400 rpm



NIROSTAR E at 700 rpm
NIROSTAR F at 600 rpm

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