

DIP

DIRECT IN-LINE PUMP SYSTEM





S.I.D.E. Industrie is a family company specialized for over 25 years in solutions for the pumping of "difficult fluids".

Based on practical expertise in the field, the development of our product range is the result of 30 years of research, and from listening to the daily concerns of users and designers, enabling us today to offer innovative solutions which are both simple and complete. Many are already standards in use in Europe for several years now. In association with the DIP® Direct In-line Pump System, this new catalogue presents other innovations, with new developments to further protect the environment, your investment and to enhance safety : all individually manufactured and tested in real conditions before shipping.

Stéphane Dumonceaux
General Manager



1987

Founding of the Company
" Société d'Implantation et de Diffusion d'Équipements
Électro-hydraulique ", SIDE 77, by Joël Dumonceaux.

1990

Creation of a special unit for Renovating Lifting Stations,
based on Stainless Steel Sheet Metal Work Technology.

2000

SIDE 77 becomes SIDE INDUSTRIE.

2001

Creation of In-line Pumping for Lifting Stations.

2002

Patent filed for Liquid Pumping System & Installation.
Factory opened in Villemer, France.

2003

Commercialisation of the first System, baptised "DIP".

2006

Beginning of Automated Production.
Sales Network established in France and
Delivery of 100th DIP Systeme®.

2007

Range extended up to 66kW and delivery of 200th DIP.
Patent filed for VICAP system and Creation of T4 Impellers.

2008

Launch of new range: DIP16,
21, 31, 61, 101, and 151.
Delivery of 300th DIP Systeme®

2009

Launch of the mini Domodip station.
Launch of the PM Modular Pump.
Launch of the Sidinox 120 Prefabricated Lift Station.
Delivery of 500th DIP Systeme®.

2010

Launch of Sidinox 150.
Launch of Sidinox 200.
Delivery of 700th DIP Systeme®

2011

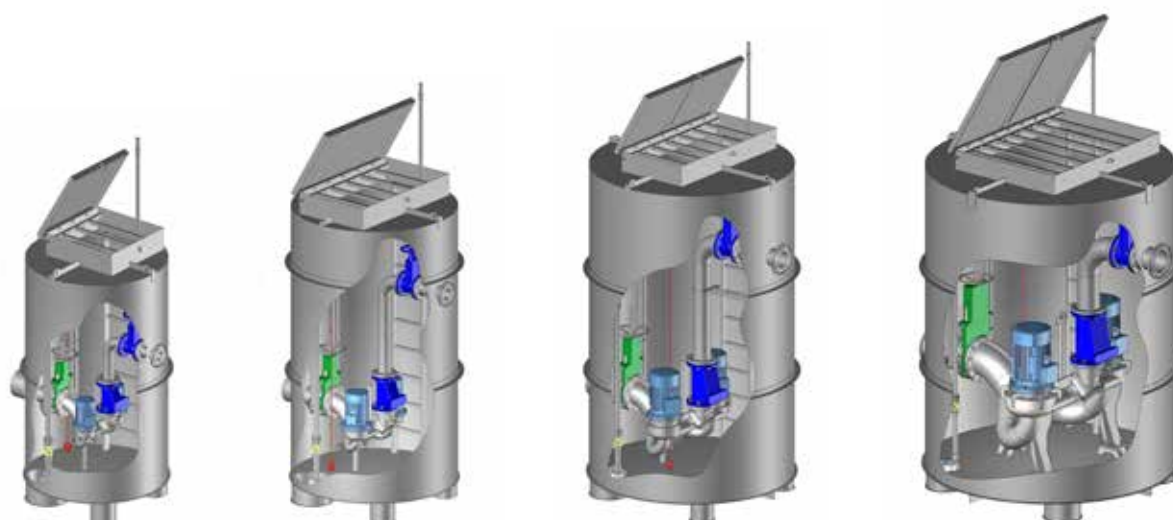
Launch of Sidinox 250.
Delivery of 800th DIP Systeme®.

2012

Delivery of 1000th DIP Systeme®.
Launch of OmniDIP®
Launch of the Aquameter

2013

Delivery of 100th SIDINOX
SIDINOX elected BTP Product of the year
by the professionals
Launch of the impeller DIPCUT®



DIRECT IN-LINE PUMP SYSTEM

AN INNOVATIVE PRINCIPLE

By lifting gravity effluent directly at the point of entry, without water loading or a wet well, the DIP Systeme® overcomes the drawbacks of retained volumes of effluent:

- Dangerous gases (H₂S),
- Smells,
- Sand and grease accumulation,
- Equipment corrosion,
- Structural erosion,
- Clogged floaters,
- And offers access safety.



The DIP Systeme® makes it possible to design durable and economical pumping stations.

A COMPLETE CONCEPT

A main sewerage sectioning valve is fitted as standard for shutting off the waste water inlet.

The two conical VORTEX impellers are protected against clogging. Sealing equipment can be fully turned when dry, without causing damage, for a period of several weeks.

Two engine units are connected by a hydraulic body, the shapes, specially designed in CAD to be able to receive effluent directly.

The upstream level is measured by a static sensor, fitted in the water stream of the effluent inlet.

All parts in contact with fluids are made of boiler-plated stainless steel EN1.4306 or EN1.4404 (304L or 316L).

The internal valve two ways provides integrated flow without the need for complicated piping systems.



The only patented system to lift effluent directly at the point of entry

OPERATION

The DIP Systeme® is driven, as standard, by variable speed. Operation is no longer based on "all-or-nothing" pumping but on continuous and modulated pumping directly from the effluent inlet.

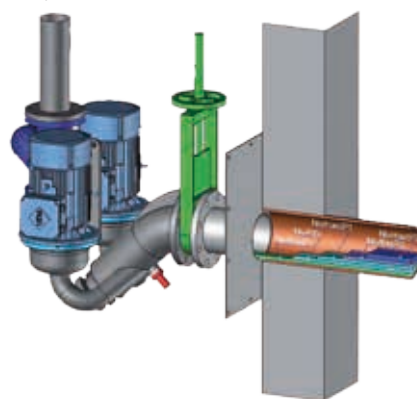
Thanks to its special design, the DIP Systeme® absorbs the air/fluid mix which flows in from the gravity lines and gives it the speed it requires to be discharged up to the outlet.

The proportion of gas transported can reach up to 10% of fluid flow without running the risk of air-binding.

Flow is also maintained by the system, which automatically adapts to constantly changing flow rate and load reduction, thanks to the special shape of the hydraulic body and the design of its impellers.

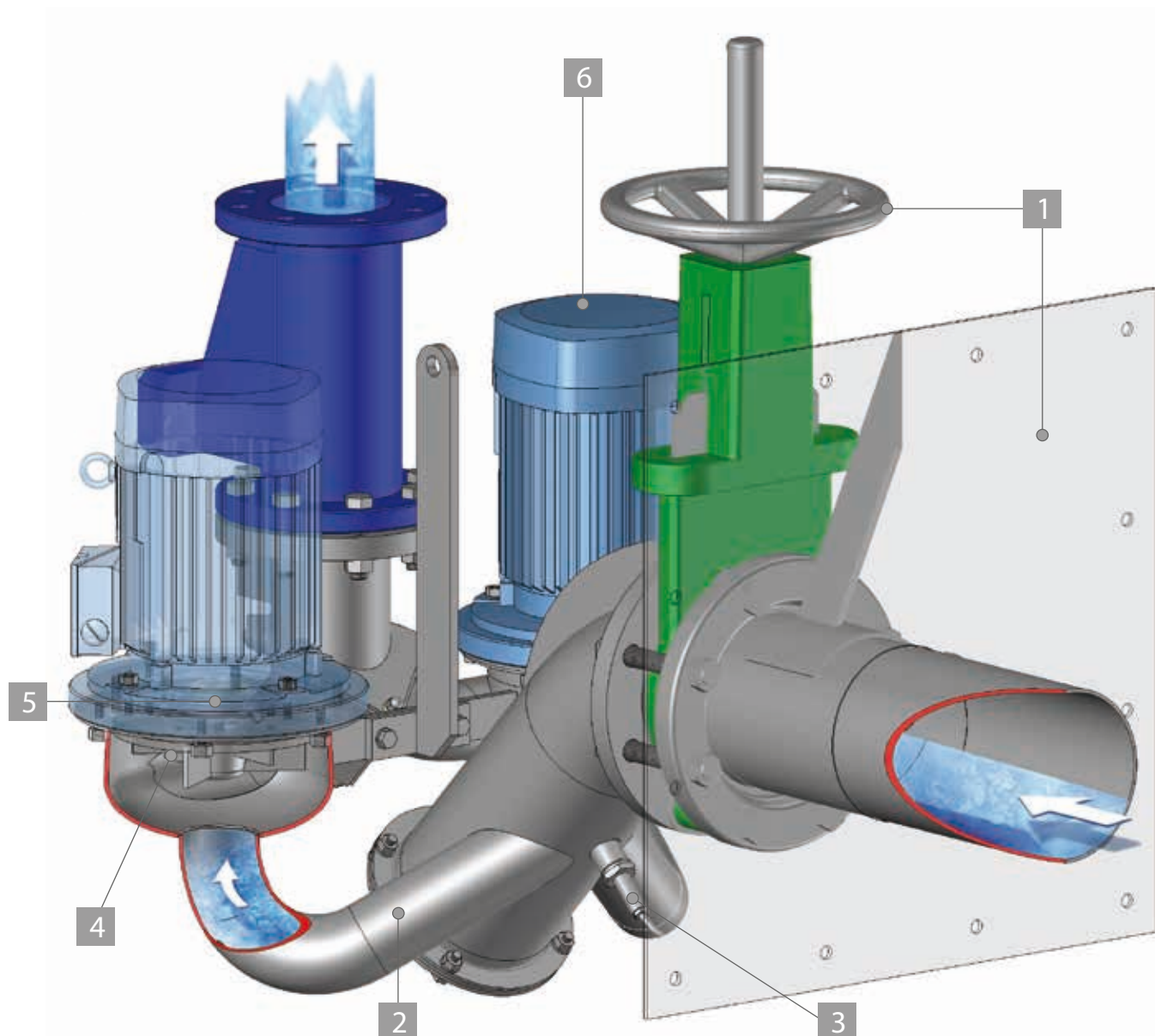
This operating mode enables solid or fibrous matter to move through the system without causing blockages. Electrical power adjusts in line with the incoming flow. Progressive start-ups and stops eliminate hydraulic surges.

If the inlet flow is less than the minimum load, operation is intermittent and, if the flow is zero, the DIP Systeme® shuts down completely.



THE "A.L.C.V9" ELECTRONIC CONTROL SYSTEM: 4-PUMP UNIT VERSION

Based on the associated principles of hydraulic regulation and variable speed, the operation of the DIP Systeme® uses an electronic control system which is just as complete as it is straightforward to use. It provides regulation for all configurations, including those of a complex combined sewerage system, by offering a high level of monitoring and control.



WALL FLANGE AND SECTIONING VALVE

1

SHARED HYDRAULIC BODY

2

LEVEL GAUGE

3

IMPELLERS

4

SEALING UNIT

5

MOTORS

6

A.L.C V9 CONTROL PANEL

7

GENERAL DESCRIPTION

1 WALL FLANGE and MAINS SECTIONING VALVE AS STANDARD

WALL FLANGE

The various stainless steel 304L wall flanges provide a sealed connection to the mains inlet, whatever the diameter or shape of the structure, round or square, as well as the discharge of the bottom drainage pump. Several inlets and an overflow can also be connected together, using a number of wall flanges and a collector.



MAINS SECTIONING VALVE AS STANDARD

Located at the DIP suction port, the valve enables the system to be cut off from the mains inlet. It is a guillotine type valve.

Its port gate valve is a stainless steel AISI 304 L gate leaf with a sharpened edge, in order to cut any fibrous elements which might prevent it from shutting.



2 SHARED HYDRAULIC BODY

Made entirely from AISI 304L (316L on request) "boiler-plated" stainless steel.

The bodies' suction profiles are specially designed to take advantage of the flow speed from the gravity-driven inlet. The inlet body also serves as a stone trap with inspection port and draining valve.

The interior surface of the body is very smooth to improve efficiency, and doesn't have any areas where matter in suspension might be held back.

The wide flow section continues through to the internal directional swing check valve.

The clapper box is an integral part of the body, thereby dispensing with the need for collection pipework between the two pumps.

The valve has three possible positions: right or left according to which pump is operating, and central if both are operating. It has a stainless steel frame and replaceable wear plates.

The joint discharge, DN80 to DN400 depending on the model, has a standard-compliant flange and a pressure measuring socket. A single retaining valve must be fitted directly to this flange to separate the volume contained within the discharge pipe (Rubber swing check valve).



3 LEVEL GAUGE (NEW SENSOR COATED IN VULKOLAN®)

SIMPLE AND SAFE

A pressure sensor located beneath the entry chamber constantly measures the height of fluid at the inlet.

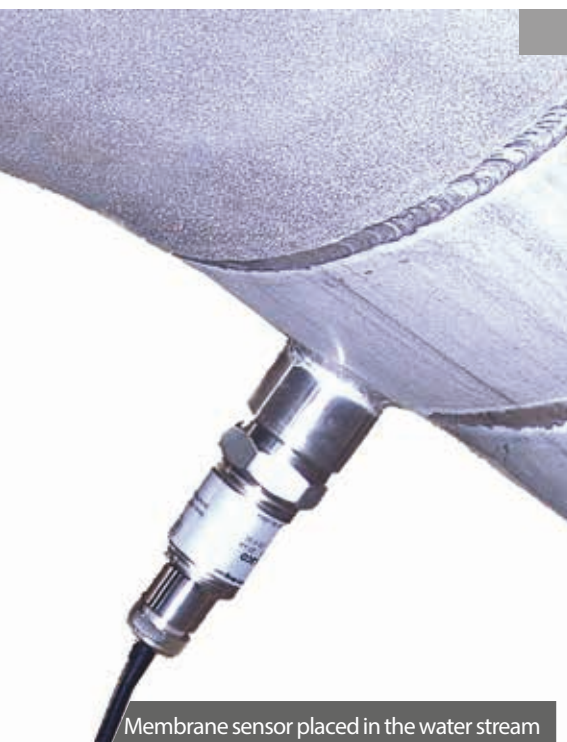
Thanks to its stainless steel AISI 316 flush membrane, this sensor is highly wear resistant. It is resistant to deposit build-up because it benefits from, at this position, the inlet fluid speed, which is further enhanced by the suction effect of the pump operation.

This system dispenses with the need for classical detection methods, such as float or ultrasound measurement.

IP67 protection with 15m (49 ft) of cable as standard on all models.

DATA TRANSMISSION

In addition to the information transmitted to the regulation cabinet regarding the inlet fluid height, information from the sensor can also be sent by a transmitter for remote surveillance of the system, without the need for any accessories, thanks to the galvanic isolated output on the control panel.



Membrane sensor placed in the water stream

4 IMPELLERS

DIP system® can be fitted either with :

CONICAL VORTEX IMPELLER

This impeller is fitted as standard as is perfectly adapted to raw effluent full of gaz and sand. The special properties of this alternate blades impellers allow most fibrous and solid materials such as cloths, bandages, tights, plastic bottles, aluminium cans, etc. to pass through without causing a blockage. It prevents clogging and helps the system to reprime quickly. This impeller is the best compromise between unblockage, sustainability and efficiency.

T4 IMPELLER

Multicanal open impeller, made of AISI 304L or 316L stainless steel have wide flow section offering an optimal efficiency on water flow. The T4 version is fitted to the larger models and have a high level of efficiency. Coupled to the new IE3 Premium motor this impeller allows to save 30% energy.

DIPCUT® IMPELLER

DIPCut® is a patented impeller that becomes a «Shredder» when it changes direction of rotation. Coupled to variable frequency drive, this impeller changes its direction of rotation automatically when needed in order to cut snarled long fibrous materials and rags, and then remove them. This is the ideal «Fiber Killer»!

DIPCut® combines the advantages of the conical Vortex impeller when pumping sand, gases or big solid wastes and the shredding function cutting long fibrous materials into shreds. Knowing that cleaning out a classical pumping system costs in average the equivalent of an electric consumption of 3.500 kW/h, DIPCut® allows the savings of those clogs and uses less power. Contrary to others as Grinder or shear and cut and pump, the DIPCut® impeller keeps its high hydraulic pumping efficiency. Moreover, while shredding, all the power of the motor is used only by the 4 «knives» that are very efficient and consume less energy. Result : an efficiency doubled in comparison to other pump systems, so no motor oversize. The switch between the 2 functions is managed automatically by the drive controller based on the torque control and monitored via the OmniDIP® Box connected into the command. Moreover the self-monitoring system OmniDIP® allows the remote follow up and analyses of the functioning of the DIPCUT®.



GENERAL DESCRIPTION

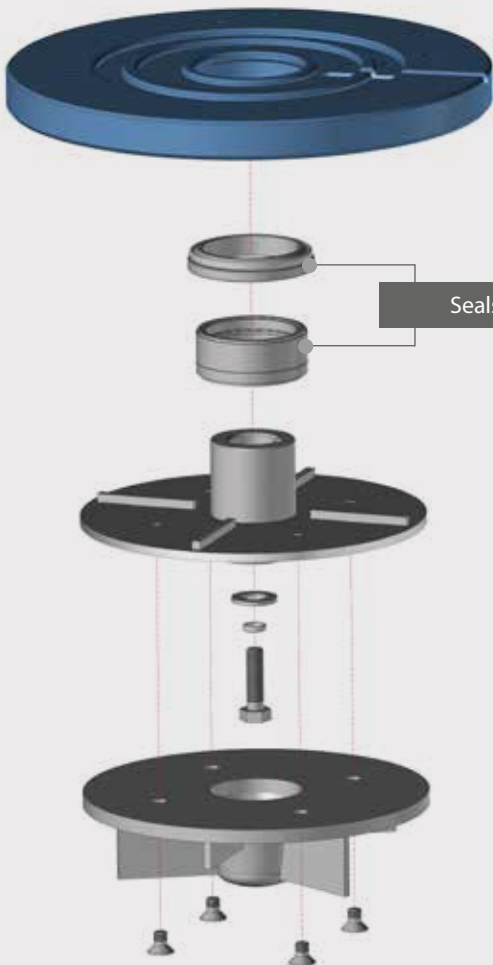
5 SEALS

SEALS

- No oil pan
- Ability to operate dry up to 150h
- Large capacity
- Also operates under pressure
- Materials: Sic/Sic or W/Sic

OPERATING LIMITS

- Max. temperature: 40-80°C (100°F – 180°F) on request
- Viscosity: 750 cSt (ie $1,08 \times 10^{-5} \text{ ft}^2/\text{s}$)
- Max. speed: 3,600 rpm
- Max. pressure: 10 bars (145 psi)



6 MOTORS



MOTORS FITTED TO THE DIP SYSTEM®:

As standard:

Cast iron or aluminium motor body with fastener dimensions which comply with industrial standards and are, therefore, compatible with those of regular industrial motors. It is fitted with a ventilator and fan cooled. Class F windings (155 °C /310°F).

Efficiency class IE2 or IE3

Sealing systems are, at level IP67 meeting, the same demands as for turning machinery installed on the ships deck.

IP67 standard motor



TEFC standard motor

"Immersible" version:

On request, we can supply motors with IP67 "immersible" protection fitted with armoured wiring (length to determine upon request) and a sealed resinated connection.

Efficiency class IE3

Meeting NEMA Standards, those all stainless steel motors and their encapsulated stator are designed to operate in all environment and to withstand to all attacks. They are both ventilated and immersible under 8m water during 2 weeks.



IP67 inox motor

APPLICATION:

For positions circulating sewage or industrial fluids located in a flood zone. Strengthening of an existing position. Saline environment, aggressive atmosphere.

CONTROL PANEL

A.L.C.V9 50Hz/60Hz COMPATIBLE

The DIP Systeme® comes delivered either with its ALC (Advanced Level Control) panel to be assembled in a customer configuration, or in a complete cabinet. Each frequency converter is connected to its motor unit and communicates with the other.

Speed variation and simplified control levels on the same panel allow regulation in all configurations, including those of complex combined sewerage systems.

The ALC panel can be used to carry out all the functions of a traditional lifting station without the need for additional equipment:

- Automatic alternation,
- Emergency stop,
- Automatic backup,
- Manual control,
- Automatic cascade,
- Automatic rotation direction reversal for clearing,
- Auto-setting of operational limits.

It also provides a very high level of integrated protection systems:

- Overintensities, overvoltages and undervoltages
- Sensor faults
- Internal faults
- Earthing faults
- Auto-diagnostic
- Impeller blockage
- Fault log
- Phase loss
- Emergency stop
- Phase direction
- Remote communication VIA MODBUS
- FACTORY remote maintenance VIA GPRS
- 2 x DIP control in tandem or in parallel

FLOW REGULATION, EVEN WHEN HIGHLY VARIABLE

The DIP Systeme® automatically adapts to the incoming flow, up to the limit of the total flow of 2 motor blocks, i.e. from 0 to 200% of the nominal flow. The performance of a DIP model is between 2 and 4 times higher than the flow rate achieved by traditional pumping in batch mode.

STRAIGHTFORWARD HUMAN-MACHINE DIALOGUE

On the front, an Auto/0/Hand switch and a continuous display of 3 key pieces of information. The control



panels are removable for safe keeping.

Simplified display for easy use:

- Values displayed for : speed, intensity, level gauge, motor power, motor torque, meters.
- Status readings for remote user surveillance.



DIP Electronic command

Size L22" x W14" x H8"
Size L550 x W350 x H200 mm

PROVIDES CONSTANT AND REGULAR FLOW

Located upstream from the purification station, the DIP Systeme® provides constant and regular flow. It therefore avoids fluids arriving in "batches", detrimental to the biomass used for biological treatment. The system management also limits maximum outlet flows.

ELIMINATION OF VALVE KNOCKS AND REDUCTION OF WATER HAMMERS

The DIP Systeme® uses a start ramp on start-up and a deceleration ramp before stopping each pumping unit to eliminate valve knocks. During diphasic pumping (liquid + gas), water hammers can also be reduced.

ENERGY SAVINGS

The problem of reducing the number of start-ups no longer exists and energy savings can be realized at low flow rates: the delivered power for the motors is adjusted in line with the required flow rates.

OmniDIP® : REMOTE CONTROL

OmniDIP® is a SCADA system with remote control and management in mind, based on M2M communication, dedicated for DIP Systeme®.

It allows many advanced remote functions as resetting, distant unclogging and interrogations via secured Internet interface or/and standards SCADA controllers.



GENERAL DESCRIPTION

8 CIVIL ENGINEERING NEW OR EXISTING (SEE ALSO SIDINOX READY-TO-CONNECT STATIONS)

SIMPLIFIED CIVIL ENGINEERING

As part of a lifting station installation project, the DIP Systeme® enables civil engineering costs to be significantly reduced:

- Groundworks require, at least, one metre less in foundation depth and concrete, and take up less space than a traditional station.
- The elimination of marling deposits reduces the height of the structure to 50cm (1.5 ft) below the water stream intake.
- The structure's shape can be either round or square and commercially available ducting and pipes prefabricated in concrete are more than adequate to contain the DIP equipment and the valve systems.
- Dry installation enables the single valve/gate block to be assembled in the same location as the DIP Systeme® without the need for a separate valve chamber. A single inspection port is required.
- For inlet levels which are not very deep, the equipment room can even be constructed out of breeze blocks as there is no "pit" to be flooded, and it is therefore watertight.

During station renovation: The DIP Systeme® adapts to any type of currently available pipework; so precise positioning of input/output pipes is no longer required. The discharge head can be positioned at any angle through 360°.

ABSENCE OF SUBMERGED TANK

The dry tank becomes an equipment room which can be fitted with lighting, a ladder and other accessories which enable maintenance personnel to carry out their work in safety.

The lifting station becomes a straightforward inspection chamber without human danger (no emission of dangerous gases, odours or accumulation of solid matter).

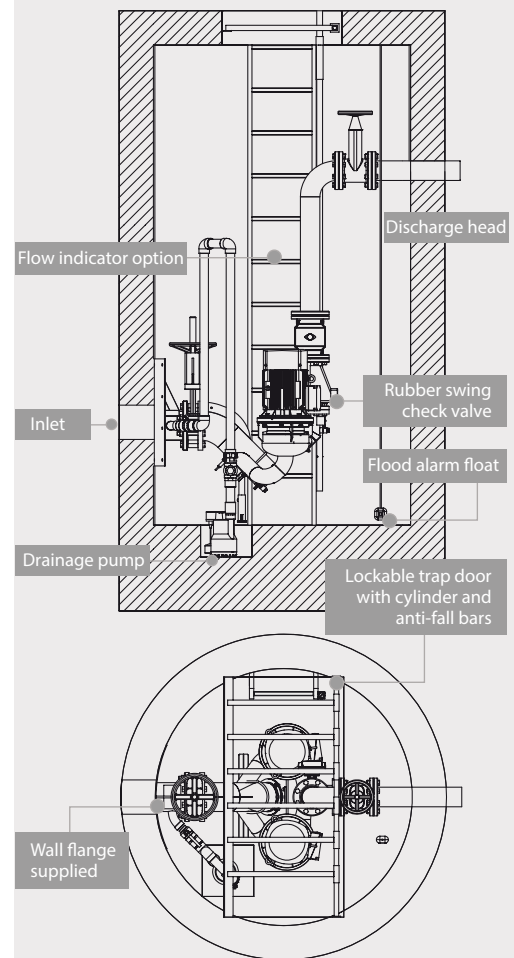
The equipment is rustproof, and is thus more resistant and more durable.

SIMPLIFIED MAINTENANCE

The absence of a collection tank eliminates costly cleaning operations of traditional units.

INCREASES THE CAPACITY OF EXISTING INSTALLATIONS

The DIP Systeme® enables flow or discharge capacities to be increased in a pumping station which has insufficient power, without changing the civil engineering.



Station equipment room transformation

MODEL SELECTION

The peak input flow rate and the corresponding total pressure directly determine the DIP model to be selected. See FAQs page 33.

In-line pumping does not require additional coefficients to be calculated (number of start-ups or drawdown volume): the directly adjusts itself in line with the inlet volume and can switch its motors on and off up to 150 times an hour.

The maximum inlet flow must correspond to one of the points on the upper curve of the operating range (next page). This graph shows the performance with a single motor unit in service, maintaining full backup with the second motor unit.

For all the lower operating points, the system automatically adjusts its flow and power at maximum efficiency for the total pressure head to be overcome

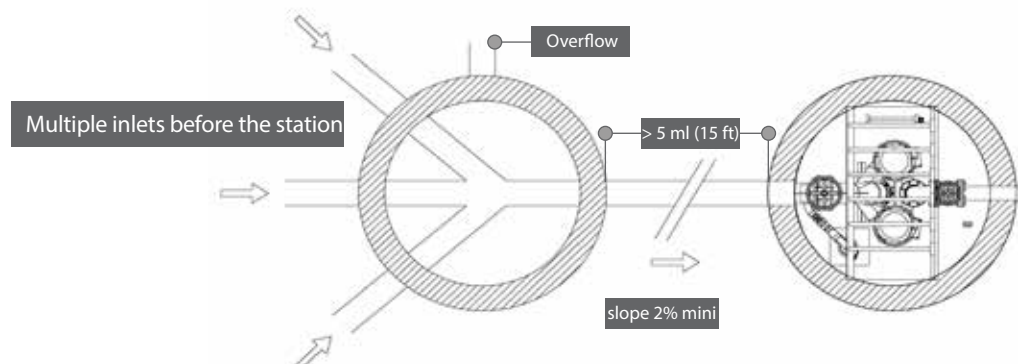
**PLEASE DO NOT HESITATE TO CONTACT US
FOR ANY SPECIAL SELECTION DECISIONS; VARIABLE
FLOW FROM 0 TO 400%; LINKED NETWORKS; ETC.**

IN THE EVENT OF EXTENSIONS BEING PLANNED TO THE NETWORK, YOU CAN CHOOSE THE CORRESPONDING MODEL FOR THE MAXIMUM FUTURE OUTPUT, IN THE KNOWLEDGE THAT, FROM THE START, THE SYSTEM CAN OPERATE CONSTANTLY AT THE BOTTOM OF ITS RANGE WITHOUT EXCESSIVE CONSUMPTION. E.G.: A DIP 31/4 WITH RATED POWER OF 2 X 3 KW (2 X 4 HP) USED AT 30% OF ITS OPERATING RANGE WILL ACTUALLY CONSUME 30% OF THE POWER OF ONE OF ITS MOTORS, I.E. 0.9 kW (1.2 HP).



1 CONSTRUCTION RULES FOR THE DESIGN OF DIP STATION STRUCTURES ARE AS FOLLOWS:

Ideally bring the various inlets together in an inspection chamber before the station, at least 5ml (15ft) from the DIP. The slope between the chamber and the station must be equal to or greater than 2%. New units can have a lesser slope, for existing or new installations. However, the inlets may be brought together using a set of wall flanges by the DIP enclosure.



2 The space between the invert and the floor must be 0.5 m (20 inches).

This height is required for easy access of the sensor (See dimensions according to the model).

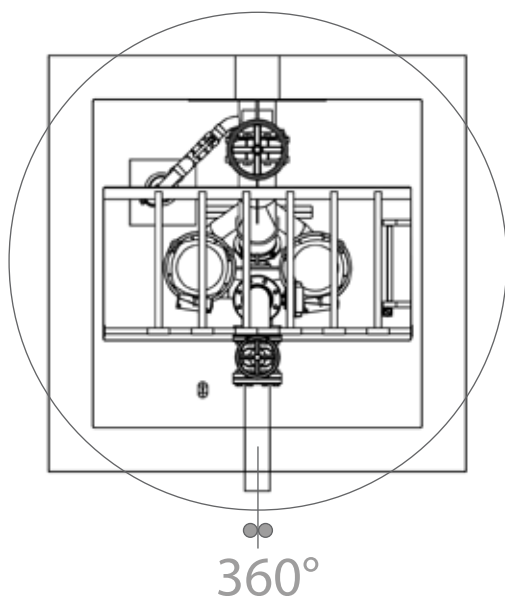
3 Apart from the minimum space around the motor units needed for maintenance, there are no constraints in terms of shape or volume for the enclosure containing the DIP System®. See dimensions of each model on the technical data sheets.

4 The form of the structure and the diameter of the inlet pipe must be specified when ordering the wall flange. The top of the wall flange is fitted with a return tap for drainage pump discharge. The construction may be of any type: the DIP System® can be fitted into a round or square concrete structure, a simple inspection chamber made of ducting stacks or an enclosure made of breeze blocks for a network close to the surface.

5 The discharge direction can be chosen through 360° as the guiding system has no special requirements and the discharge pipe is shared by two motor units.

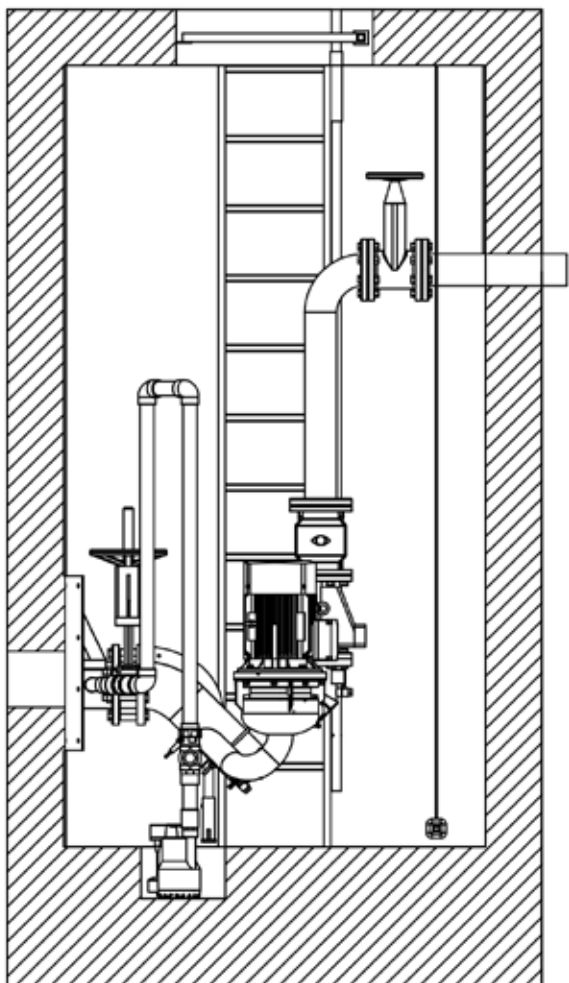
6 Discharge only requires a gate and a valve, except when it is a lifting only station. All the valve equipment and any measuring devices (flowmeter, sampling points, etc.) can be fitted in the station without separate valve chambers, as the enclosure area remains clean and healthy. For deep enclosures fitted with an intermediate floor, sufficient ventilation must be provided.

7 A double trap door 700 x 700 mm (28" x 56") is recommended up to the DIP101 models. Subsequent models require a double trap door directly above the system, of suitable dimensions for the size of the model selected.



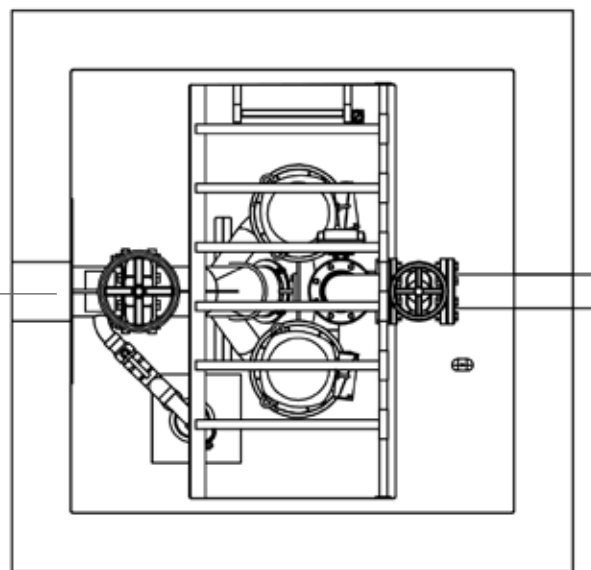
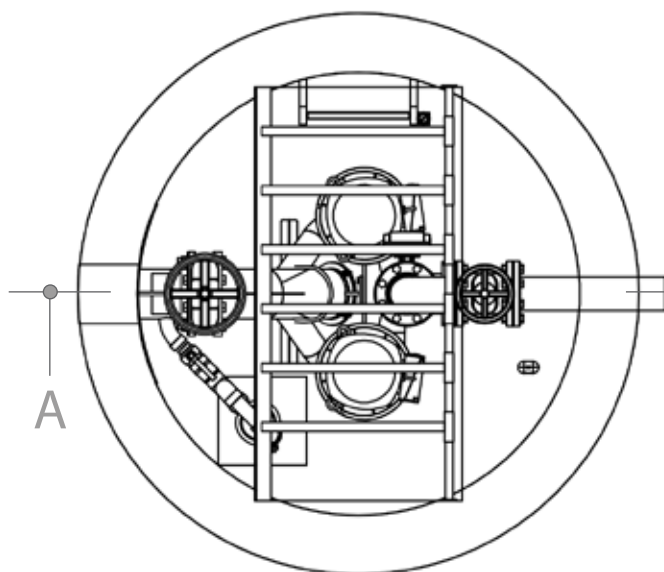
Minimum space for "maintenance"

A-A



DIFFERENT POSSIBLE
SHAPES OF UNITS:
ROUND, SQUARE, RECTANGULAR...

Other layouts available on request, don't hesitate to contact us.



MOTOR CONNECTIONS

Motor connections should preferably be made without a break between the frequency variators and the motors. Preferred cables are LIYCY armoured cables.

Connect to the motor terminal boards taking into account the voltages shown on the ratings plates.

IP56 protection of standard motors requires careful assembly of the compression glands fitted. IP57S versions are equipped with 10m of armoured cable per motor as standard.

For SIDINOX stations, cables are supplied.

GAUGE WIRE SELECTION (STANDARD VERSION) for 460V

(Maximum length of motor cables for power in excess of 1.8 kW (2.5HP) = 300 m (990 ft), and 100 m (330 ft) for power below 1.8 kW (2.5HP).)

POWER	INTENSITY	WIRE
1.5 to 3 kW (2 to 4 HP)	3 to 7 A	4G1.5 mm ² (16 AWG)
4 to 5.5 kW (5.5 to 7.5 HP)	8 to 12 A	4G2.5 mm ² (14 AWG)
7.5 to 11 kW 10 to 15 HP	15 to 19 A	4G4 mm ² (12 AWG)
11 to 15 kW (15 to 20 HP)	21 to 28 A	4G6 mm ² (10 AWG)
18.5 to 22 kW (25 to 30 HP)	34 to 42 A	4G10 mm ² (8 AWG)
30 to 37 kW (40 to 50 HP)	55 to 67 A	4G16 mm ² (6 AWG)
45 to 55 kW (60 to 75 HP)	90 to 110 A	4G25 mm ² (4 AWG)
75 kW (100 HP)	150 A	4G35 mm ² (2 AWG)
90 to 110 kW (120 to 150 HP)	180 to 220 A	4G50 mm ² (1/0 AWG)

CONNECTION OF IP67 SENSOR

If possible, the sensor should be connected without a break between the cabinet and the sensor.

The delivered cable is armoured to protect the signal.

It does not matter if the sensor is initially connected incorrectly as the display is protected. the motor cables used are armoured, ensure a wire routing distance of at least 50 mm (2 inches) is maintained between them and the sensor cable.

If cables cross, place it on top of the power cables at an angle of 90°.

CONTROL SYSTEM

The cabinets and the control panels are delivered ready to be plugged in.

Electrical connections should be carried out by qualified personnel.

For SIDINOX stations, the cabinets include ventilation housed in the base, to be connected to the station via a buried duct (heavy duty TPC or equivalent – not supplied).

Only the two motors and the sensor require connection for operating the DIP. All internal connections are made and tested in the factory. Dry contacts for remote surveillance status reports are fitted as standard. Refer to installation and maintenance instructions.

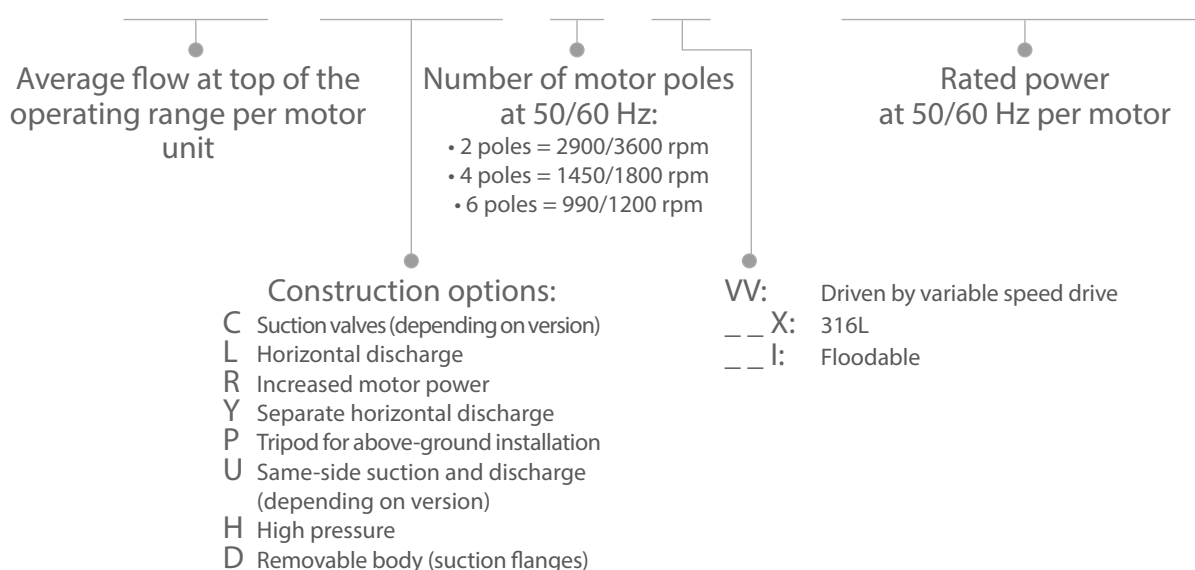
The required general protection is of the 300 mA differential interrupter type, except for special requests.

For single panels to be fitted into a cabinet, correctly calibrated motor starter protection must also be fitted upstream of each variator (magnetic circuit breaker or fuse-holder (GG-GL) for example).

A single model covers an operating range corresponding to several models from other manufacturers. The standard DIP range therefore covers from 0 to 1000 m³/h per unit (20 to 10.000 gpm/unit), from 1 to 65m (3 to 300 ft) head with just twelve models.

EACH MODEL HAS A SIMPLE NAME MADE UP AS FOLLOWS:

DIP 101/HYD/4 _ - 18.5 kW(25 HP)



The ratings plate of each DIP carries additional information such as impeller characteristics, manufacture date and number, and the defined operating point for special applications.

MODULAR CONSTRUCTION ENABLES US TO PRODUCE NON-STANDARD PRODUCTS TO MEET SPECIFIC DEMANDS OF UP TO 130 kW (150 HP) PER MOTOR UNIT (DETAILS AVAILABLE ON REQUEST).

COUPLED UNITS

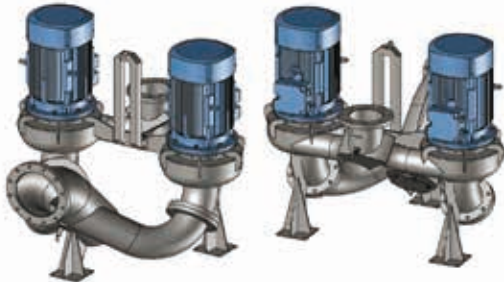
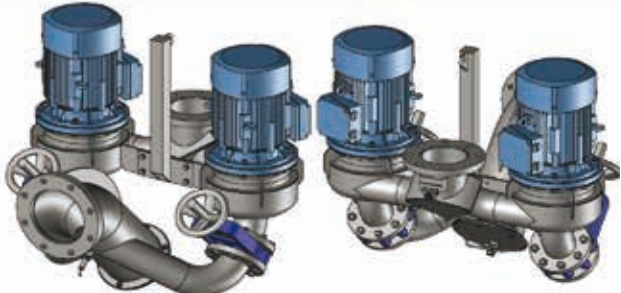
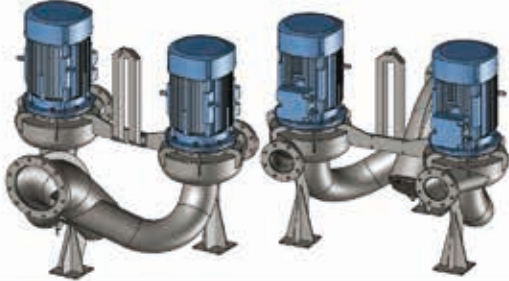
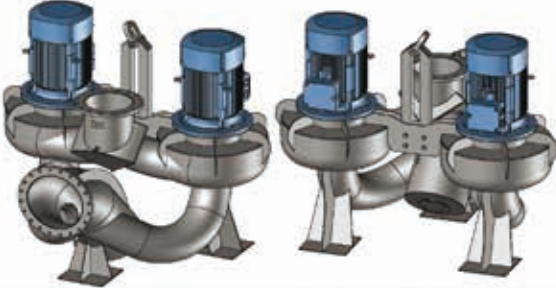
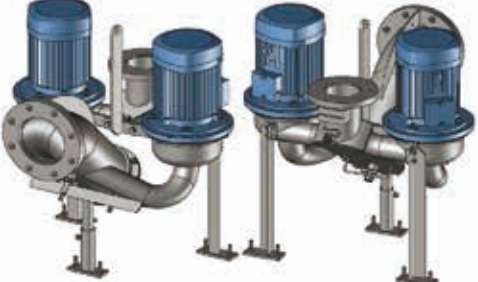
For wide variations of input flow, unit variants exist enabling two DIPs to a connection in parallel. They can also be connected in series for higher elevations than standard, up to 100 mce (300 ft).

PERFORMANCE RANGES

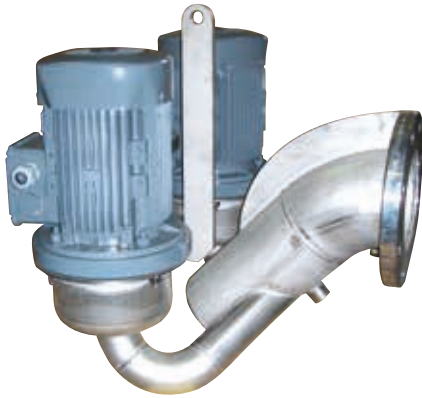
The performance range of each model shows the automatic adaptation zone of the flow/height ratio.

The serie of DIP 11 - 21 - 31 - 61 - 101 - 131 - 151 etc. allows contraction of the column of water at the DIP inlet, which is less than 10% of the nominal flow. Accordingly, gentle slopes or flow variations beyond a range of 0 to 200% can be dealt with. Minimum load curves therefore no longer represent the lower flow limit on these new models.

CONSTRUCTION OPTIONS

NAME	DESIGNATION	ILLUSTRATION
DIP 151D	D: Removable body (suction flanges) (compatible with the variants L, Y and U)	
DIP 101C	C: Suction valves (Compatible with the variants L, Y and U)	
DIP 61L	L: Horizontal discharge (Compatible with the variants D and C)	
DIP 151Y	Y: Separate horizontal discharge (compatible with the variants D and C)	
DIP 501U	U: Same-side suction and discharge (compatible with the variants D and C) (on inquiry according to the size)	
DIP 21P	P: Tripod for above-ground installation (can only be fitted on DIP 11 to 101) (compatible with the variants D, C, L and U)	

DIP 11 / 4VV or 2VV - 1.5 kW/2 HP



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

Interior channel diphasic Vortex-effect hydraulics or DIPCUT® Impeller

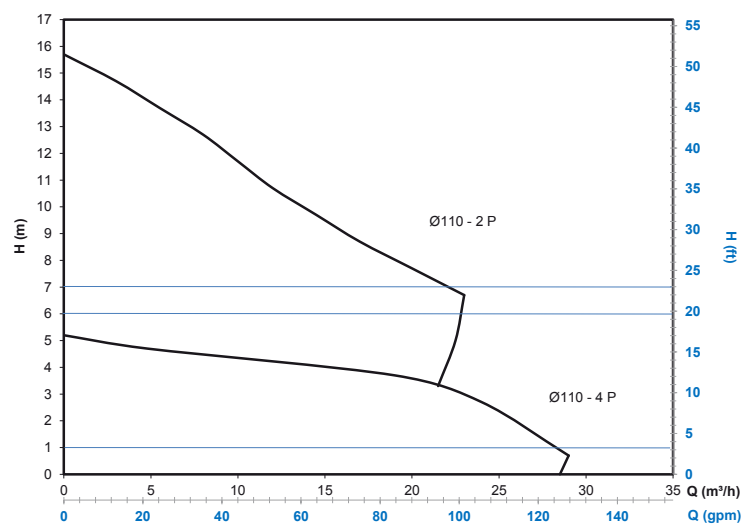
Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: + 40°C (104°F).

Specially designed for low flow rates
Power supply 250/480V TRI
ALCL electronic control

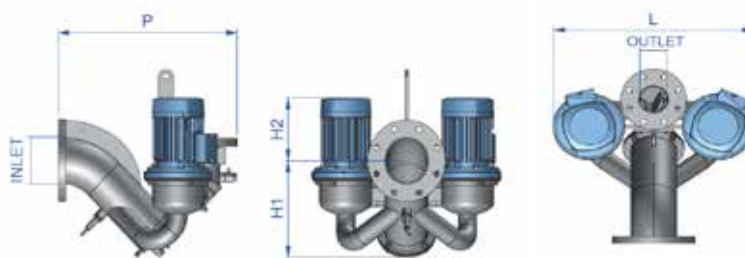
PERFORMANCES



DIMENSIONS

Dimensions in mm and "

INLET	125 (5")
OUTLET	80 (3")
H1	279 (11")
H2	192 (7.5") max.
L	610 (24")
P	569 (22.4")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
1.5 kW / 2 HP	1800/3600 rpm	250/480V	7.0/3.6A	125 (5")	80 (3")	55 (2")	84 kg/185 lb



DIP 21 / 4VV - 2.2 to 3 kW (3 to 4 HP)

DIP



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

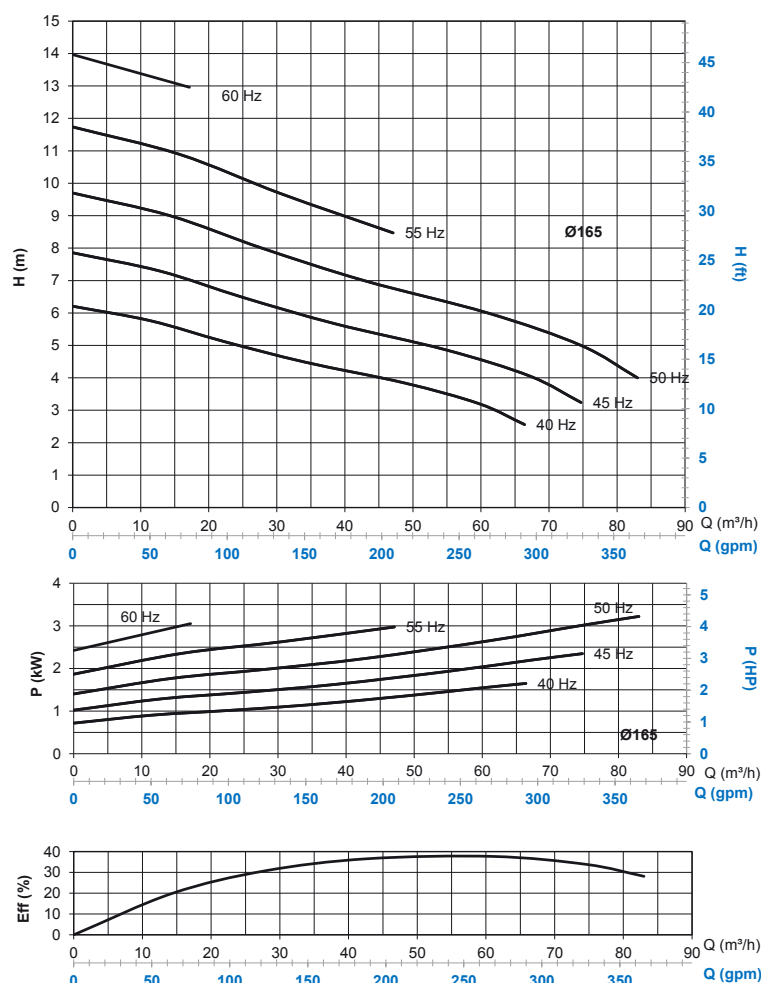
Interior channel diphasic Vortex-effect hydraulics or DIPCUT® Impeller

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

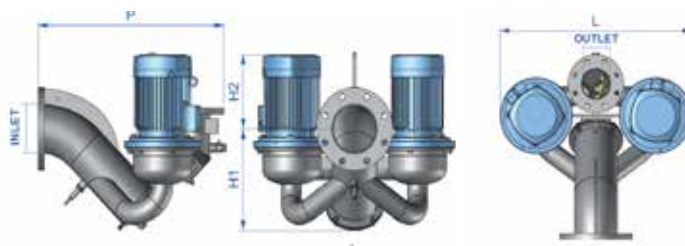
PERFORMANCES



DIMENSIONS

Dimensions in mm and "

INLET	150 (6")
OUTLET	100 (4")
H1	349 (13.7")
H2	256 (10.1") max.
L	756 (29.8")
P	680 (26.8")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
2.2 kW / 3 HP	1800 rpm	380-480V	5.15A	150 (6")	100 (4")	70 (2.8")	117 kg/258 lb
3 kW / 4 HP	1800 rpm	380-480V	6.7A	150 (6")	100 (4")	70 (2.8")	130 kg/287 lb



DIP 21 / 2VV - 4 to 5.5 kW (5 to 7 HP)



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

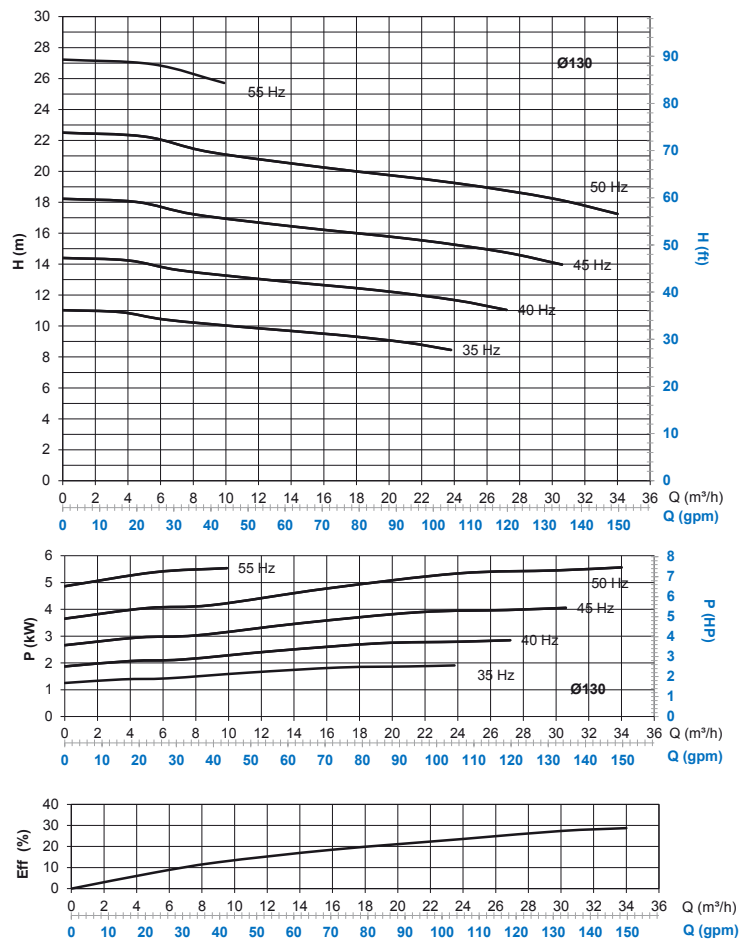
Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

PERFORMANCES



DIMENSIONS

Dimensions in mm and "

INLET	150 (6")
OUTLET	100 (4")
H1	349 (13.7")
H2	256 (10.1") max.
L	756 (29.8")
P	680 (26.8")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
4 kW / 5 HP	3600 rpm	380-480V	8.4A	150(6")	100 (4")	70 (2.8")	134 kg/295 lb
5.5 kW / 7 HP	3600 rpm	380-480V	11A	150 (6")	100 (4")	70 (2.8")	146 kg/322 lb



DIP 31 / 4VV - 3 to 5.5 kW (4 to 7 HP)

DIP



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

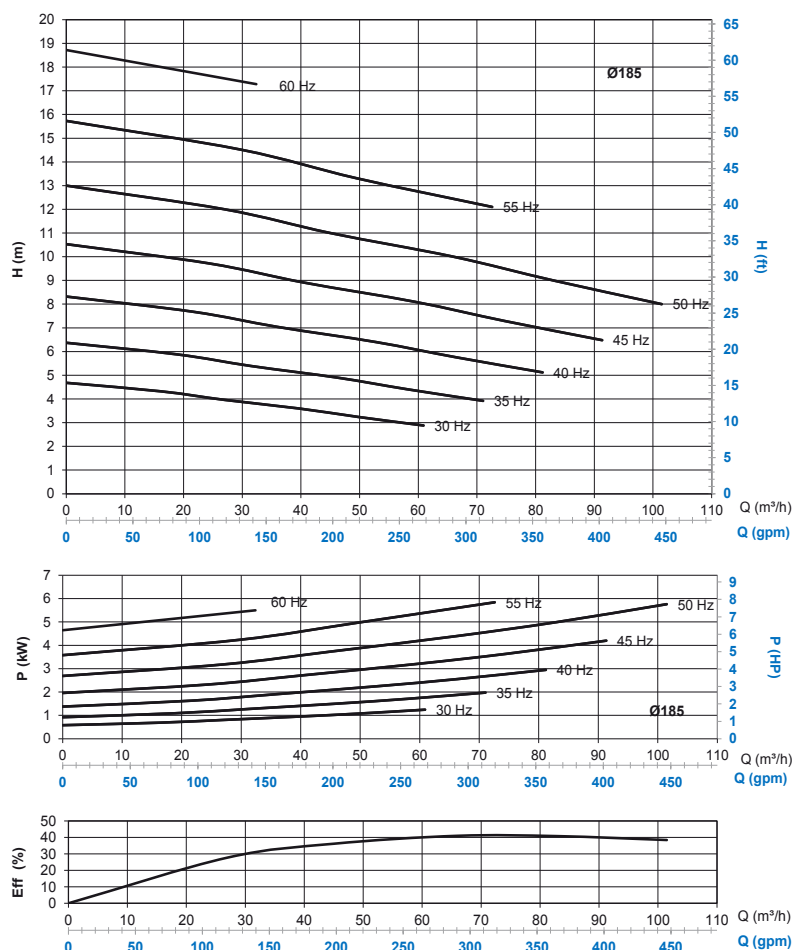
Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

PERFORMANCES



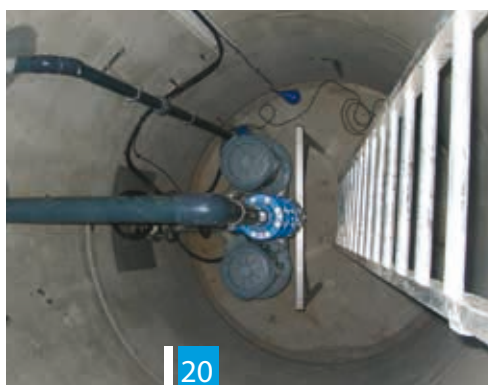
DIMENSIONS

Dimensions in mm and "

INLET	150 (6")
OUTLET	100 (4")
H1	374 (14.7")
H2	445 (17.5") max.
L	854 (33.6")
P	750 (29.5")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
3 kW / 4 HP	1800 rpm	380-480V	6.7A	150 (6")	100 (4")	80 (3")	156 kg/344 lb
4 kW / 5 HP	1800 rpm	380-480V	8.8A	150 (6")	100 (4")	80 (3")	170 kg/375 lb
5.5 kW / 7 HP	1800 rpm	380-480V	11.6A	150 (6")	100 (4")	80 (3")	190 kg/419 lb



DIP 31 / 2VV - 5.5 to 15 kW (7 to 20 HP)



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

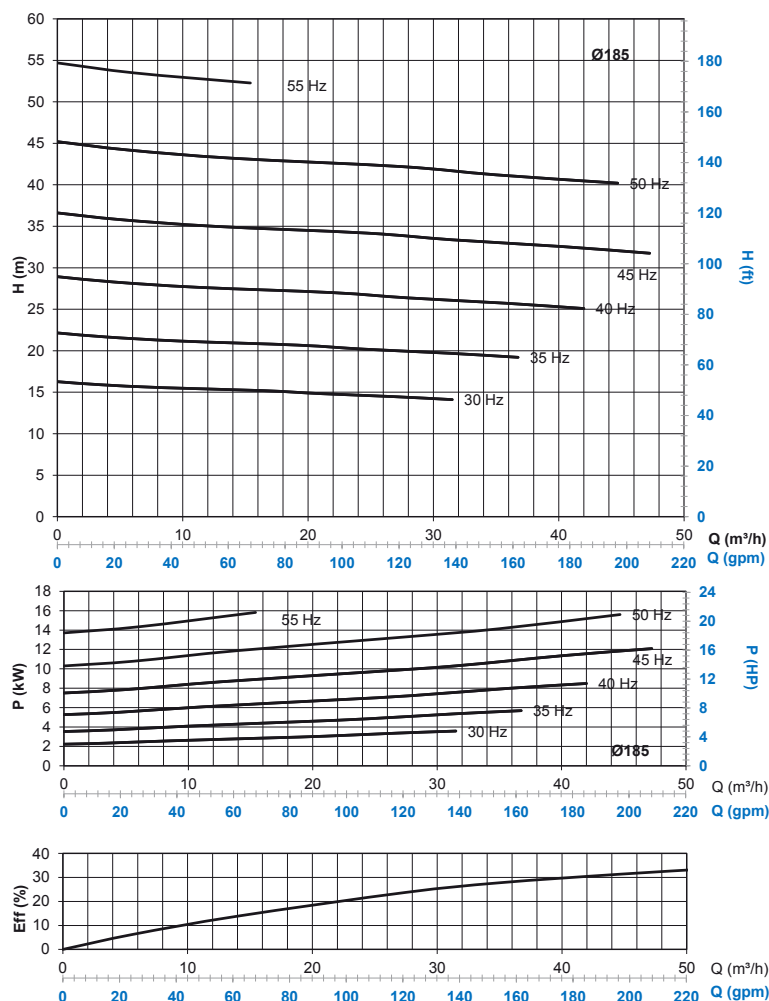
DIMENSIONS

INLET	150 (6")
OUTLET	100 (4")
H1	374 (14.7")
H2	445 (17.5") max.
L	854 (33.6")
P	750 (29.5")



Dimensions in mm and "

PERFORMANCES



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
5.5 kW / 7 HP	3600 rpm	380-480V	11A	150 (6")	100 (4")	80 (3")	172 kg/379 lb
7.5 kW / 10 HP	3600 rpm	380-480V	14.5A	150 (6")	100 (4")	80 (3")	192 kg/423 lb
11 kW / 15 HP	3600 rpm	380-480V	20A	150 (6")	100 (4")	80 (3")	258 kg/569 lb
15 kW / 20 HP	3600 rpm	380-480V	27A	150 (6")	100 (4")	80 (3")	332 kg/732 lb



DIP 61 / 4VV - 5.5 to 7.5 kW (7 to 10 HP)



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

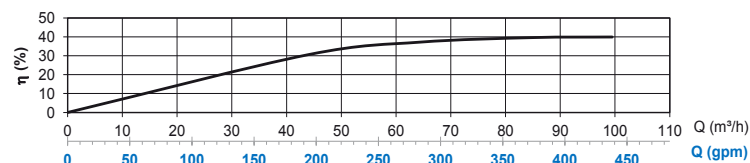
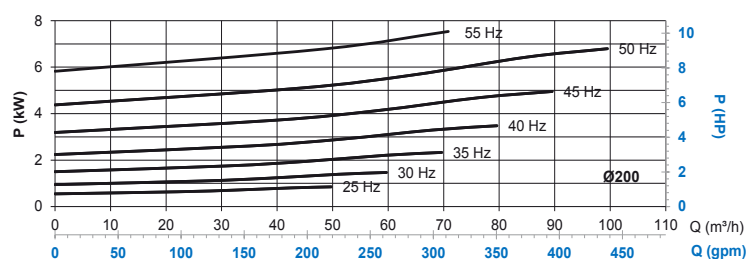
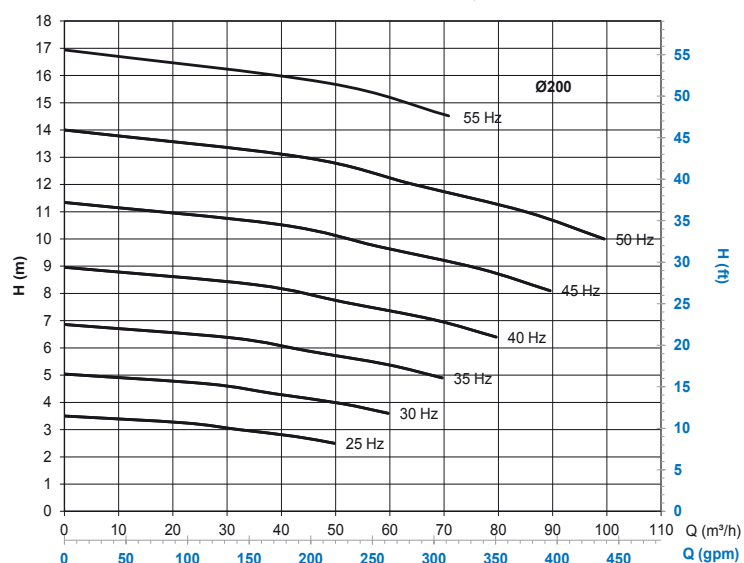
Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

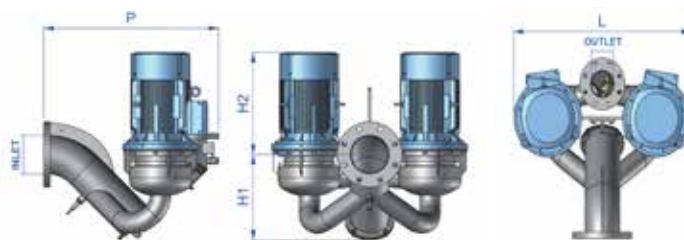
PERFORMANCES



DIMENSIONS

Dimensions in mm and "

INLET	150 (6")
OUTLET	100 (4")
H1	374 (14.7")
H2	445 (17.5") max.
L	854 (33.6")
P	750 (29.5")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
5.5 kW / 7 HP	1800 rpm	380-480V	11.6A	150 (6")	100 (4")	80 (3")	190 kg/419 lb
7.5 kW / 10 HP	1800 rpm	380-480V	15A	150 (6")	100 (4")	80 (3")	236 kg/520 lb



DIP 61 / 2VV - 7.5 to 15 kW (10 to 20 HP)



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

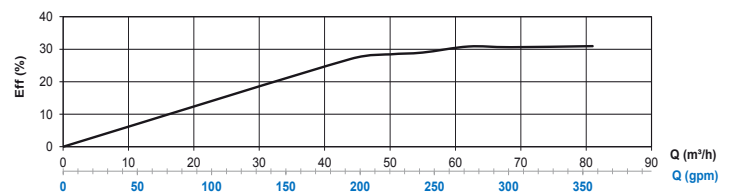
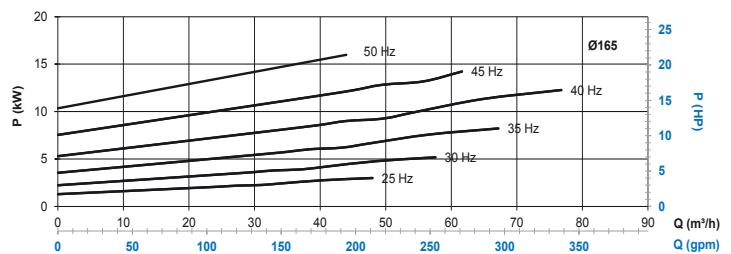
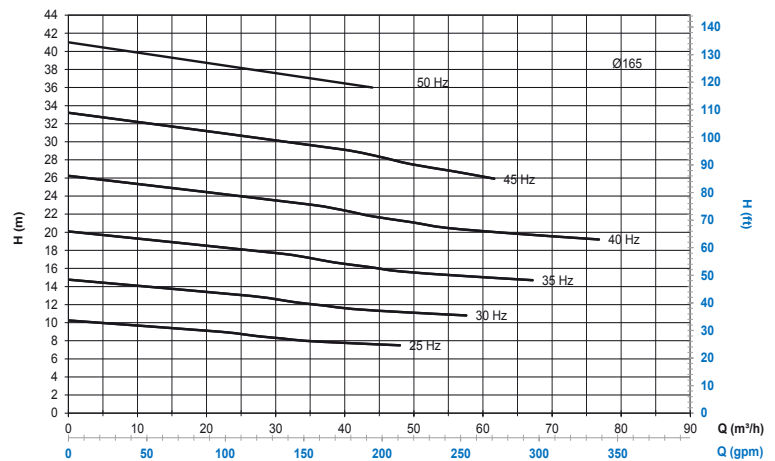
Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

PERFORMANCES



DIMENSIONS

Dimensions in mm and "

INLET	150 (6")
OUTLET	100 (4")
H1	374 (14.7")
H2	445 (17.5") max.
L	854 (33.6")
P	750 (29.5")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
7.5 kW / 10 HP	3600 rpm	380-480V	14.5A	150 (6")	100 (4")	80 (3")	192 kg/423 lb
11 kW / 15 HP	3600 rpm	380-480V	20A	150 (6")	100 (4")	80 (3")	258 kg/569 lb
15 kW / 20 HP	3600 rpm	380-480V	27A	150 (6")	100 (4")	80 (3")	346 kg/763 lb



DIP 101 / 6VV - 4 kW (5 HP)

DIP



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

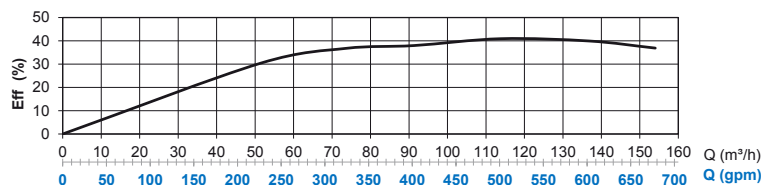
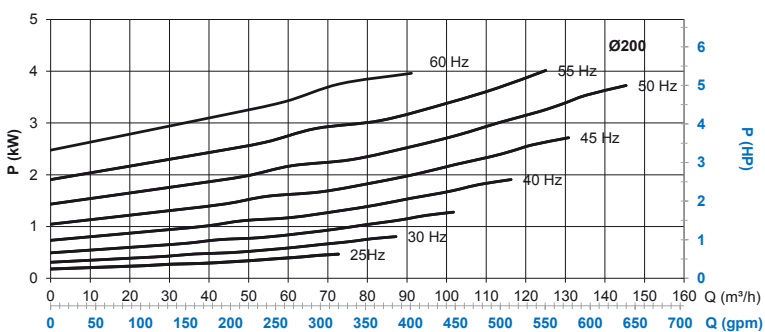
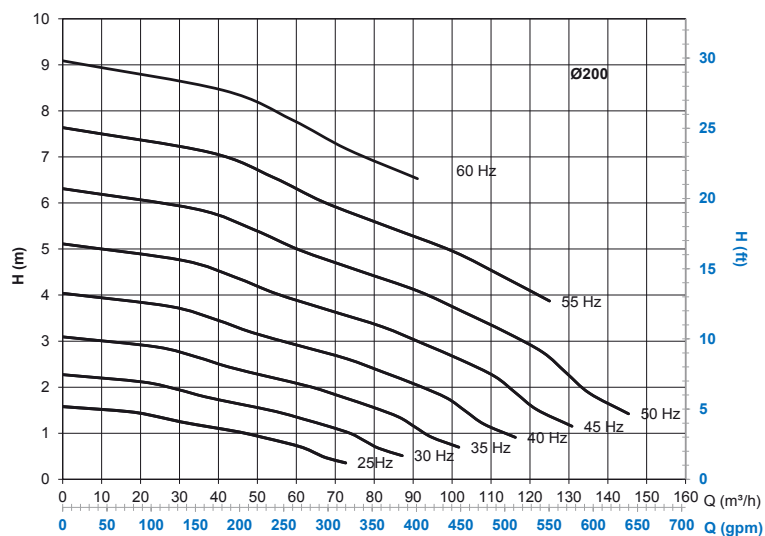
Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

PERFORMANCES



DIMENSIONS

Dimensions in mm and "

INLET	200 (8")
OUTLET	150 (6")
H1	457 (18")
H2	434 (17.1") max.
L	1031 (40.6")
P	943 (37")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
4 kW / 5 HP	1200 rpm	380-480V	9A	200 (8")	150 (6")	110 (4.3")	233 kg/514 lb



DIP 101 / 4VV - 5.5 to 15 kW (7 to 20 HP)



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

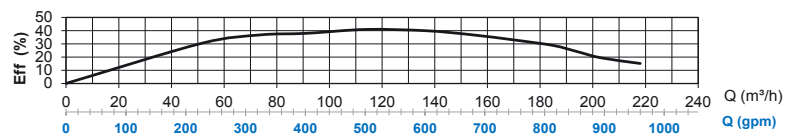
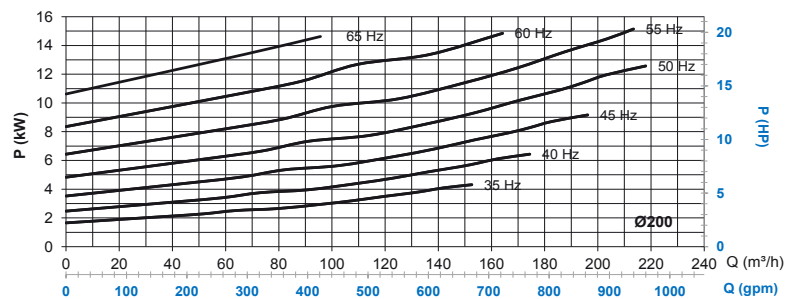
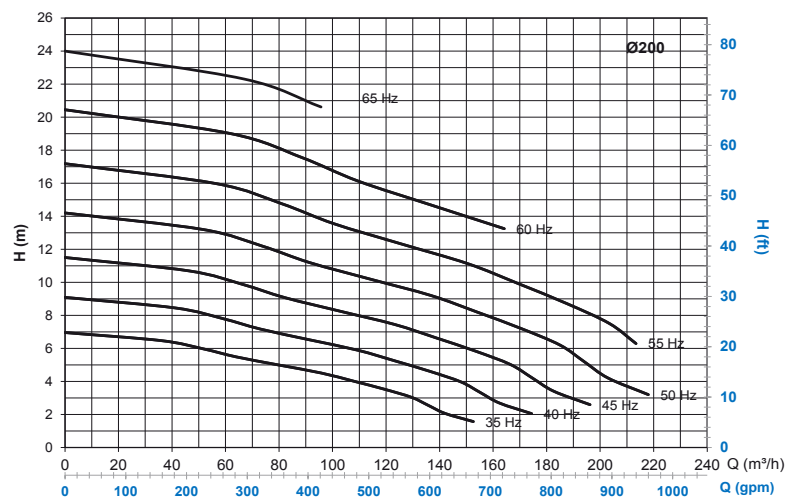
Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

PERFORMANCES



DIMENSIONS

Dimensions in mm and "

INLET	200 (8")
OUTLET	150 (6")
H1	457 (18")
H2	434 (17.1") max.
L	1031 (40.6")
P	943 (37")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
5.5 kW / 7 HP	1800 rpm	380-480V	11.6A	200 (8")	150 (6")	110 (4.3")	221 kg/487 lb
11 kW / 15 HP	1800 rpm	380-480V	21A	200 (8")	150 (6")	110 (4.3")	311 kg/686 lb
15 kW / 20 HP	1800 rpm	380-480V	28A	200 (8")	150 (6")	110 (4.3")	372 kg/820 lb



DIP 101H / 4VV - 18.5 to 45 kW (25 to 60 HP)



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

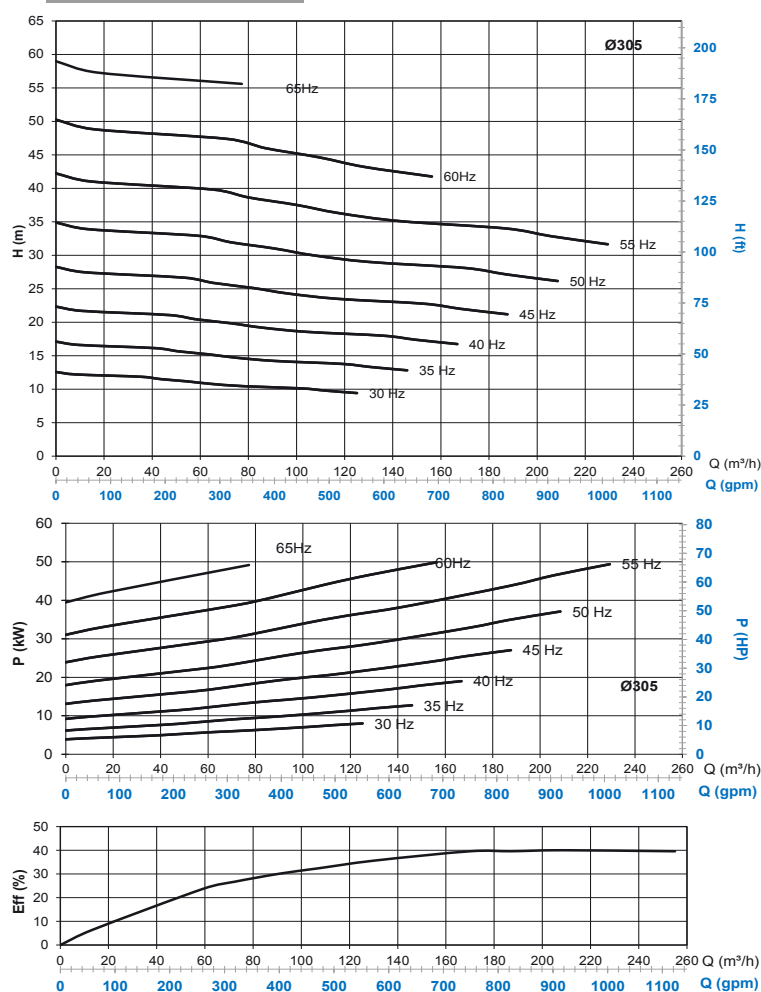
DIMENSIONS

INLET	200 (8")
OUTLET	150 (6")
H1	500 (20")
H2	848 (33.4") max.
L	1420 (56")
P	1132 (44.6")



Dimensions in mm and "

PERFORMANCES



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	Ø CHANNEL	WEIGHT
18.5 kW / 25 HP	1800 rpm	380-480V	34.5A	200 (8")	150 (6")	100 (4")	694 kg/1530 lb
22 kW / 30 HP	1800 rpm	380-480V	42A	200 (8")	150 (6")	100 (4")	762 kg/1680 lb
30 kW / 40 HP	1800 rpm	380-480V	55.5A	200 (8")	150 (6")	100 (4")	822 kg/1812 lb
37 kW / 50 HP	1800 rpm	380-480V	67A	200 (8")	150 (6")	100 (4")	968 kg/2134 lb
45 kW / 60 HP	1800 rpm	380-480V	81A	200 (8")	150 (6")	100 (4")	1028 kg/2266 lb



DIP 131 / 4VV - 11 to 22 kW (15 to 30 HP)



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

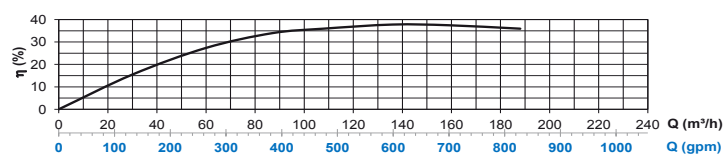
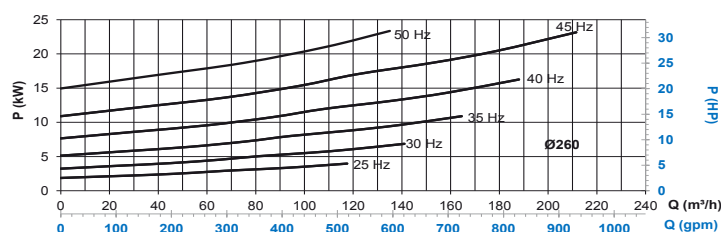
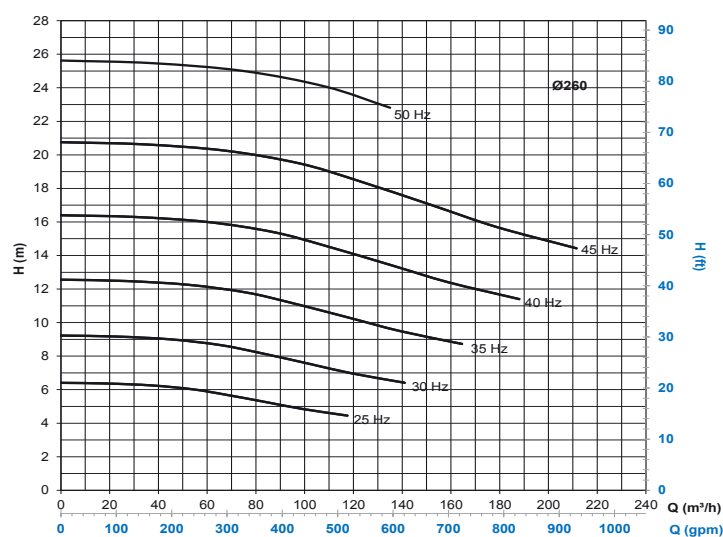
Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

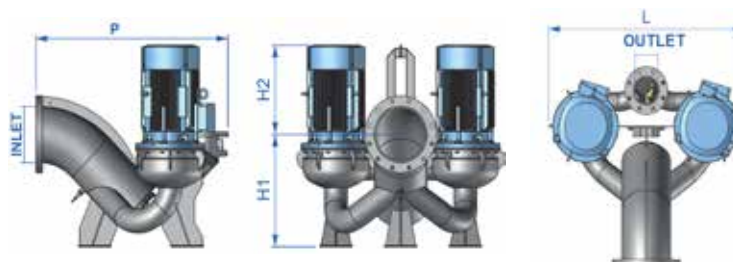
PERFORMANCES



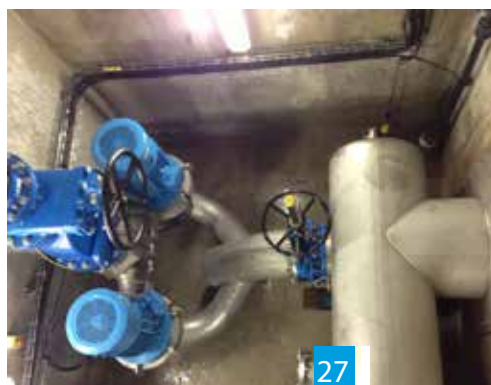
DIMENSIONS

Dimensions in mm and "

INLET	300 (12")
OUTLET	150 (6")
H1	655 (26")
H2	516 (20") max.
L	1286 (51")
P	1188 (47")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
11 kW / 15 HP	1800 rpm	380-480V	21A	300 (12")	150 (6")	100 (4")	464 kg/1023 lb
15 kW / 20 HP	1800 rpm	380-480V	28A	300 (12")	150 (6")	100 (4")	522 kg/1151 lb
18.5 kW / 25 HP	1800 rpm	380-480V	34.5A	300 (12")	150 (6")	100 (4")	612 kg/1349 lb
22 kW / 30 HP	1800 rpm	380-480V	42A	300 (12")	150 (6")	100 (4")	680 kg/1499 lb



DIP 151 / 4VV - 30 to 45 kW (40 to 60 HP)

DIP



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

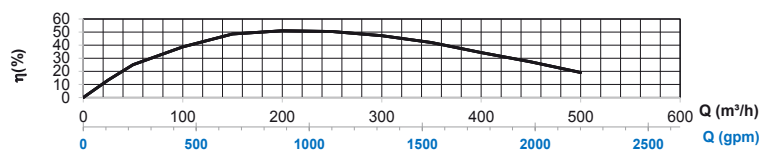
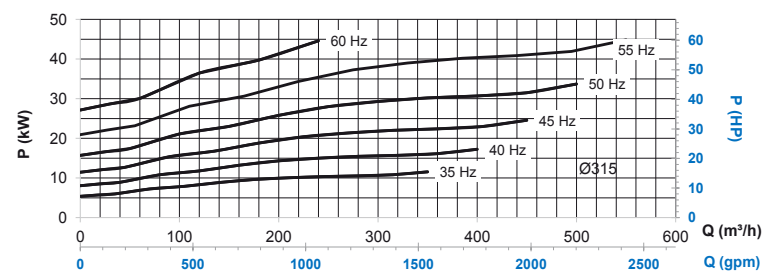
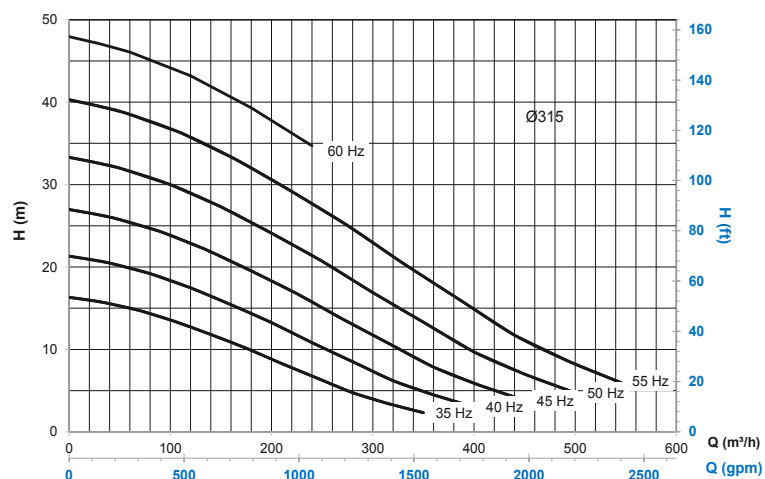
Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

PERFORMANCES



DIMENSIONS

Dimensions in mm and "

INLET	300 (12")
OUTLET	200 (8")
H1	761 (30")
H2	767 (30") max.
L	1651 (65")
P	1495 (60")



RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
30 kW / 40 HP	1800 rpm	380-480V	55.5A	300 (12")	200 (8")	150 (6")	870 kg/1918 lb
37 kW / 50 HP	1800 rpm	380-480V	67A	300 (12")	200 (8")	150 (6")	1016 kg/2239 lb
45 kW / 60 HP	1800 rpm	380-480V	81A	300 (12")	200 (8")	150 (6")	1076 kg/2372 lb



DIP 151 / 6VV - 22 kW (30 HP)



INFOS

- Three-phase squirrel-cage motor 50Hz/60Hz
- IE2 standard-compliant or IE3
- Class F
- IP67 as standard

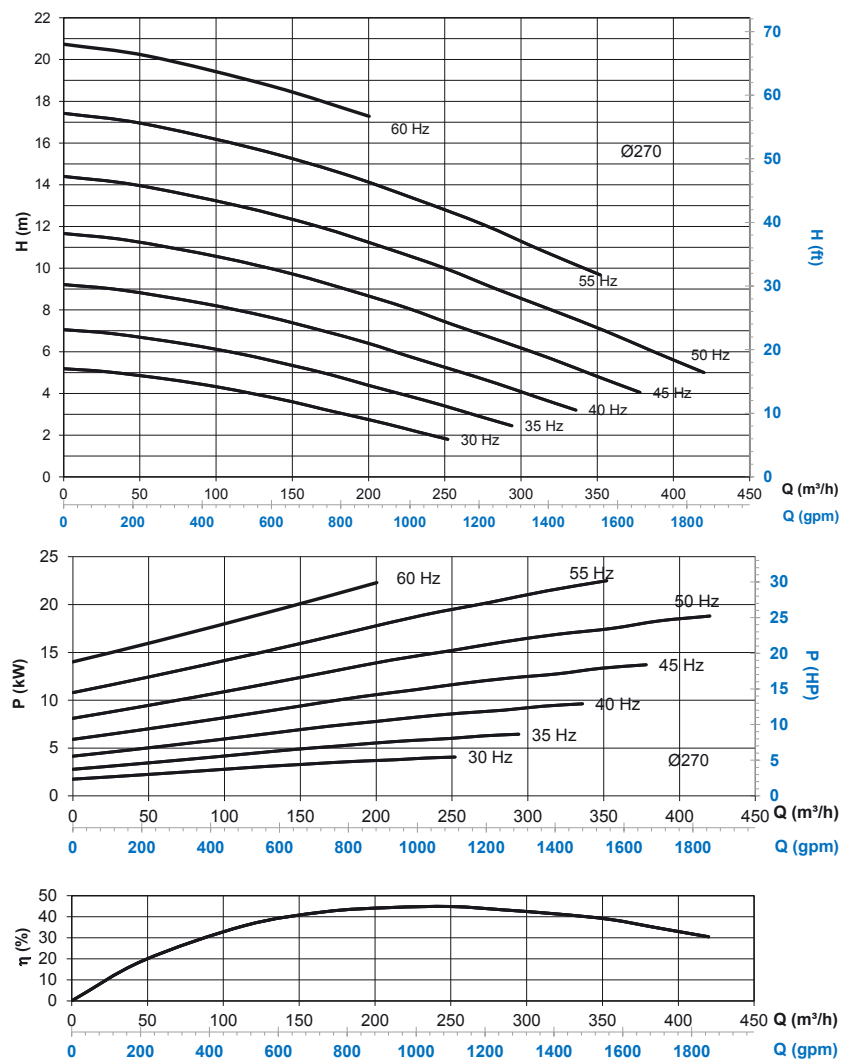
Interior channel diphasic Vortex-effect hydraulics or T4 Impeller or DIPCUT® Impeller available upon request

Shaft seal oil-free motor, large capacity

Fan cooling

Max ambient temperature: +40°C (104°F).

PERFORMANCES



DIMENSIONS

INLET	300 (12")
OUTLET	200 (8")
H1	761 (30")
H2	767 (30") max.
L	1651 (65")
P	1495 (60")



Dimensions in mm and "

RATED POWER	SPEED (up to)	VOLTAGE	MAX CURRENT	INLET	OUTLET	ø CHANNEL	WEIGHT
22 kW / 30 HP	1200 rpm	380-480V	35A	300 (12")	200 (8")	150 (6")	870 kg/1918 lb





Customer specification model

up to DIP 151 / 6VV - 45 kW (60 HP) to DIP 151 / 4VV - 55 kW (75 HP)





Customer specification model

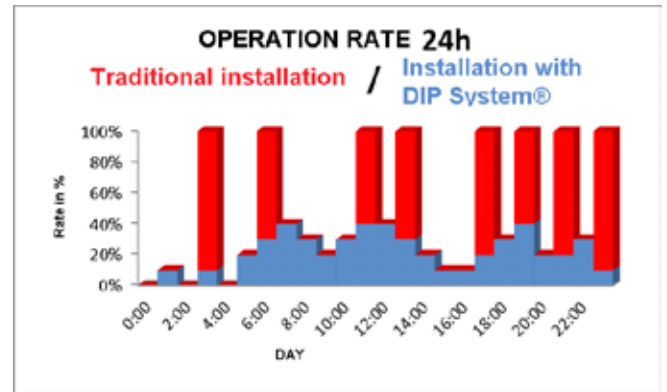
up to DIP 201 / 6VV - 30 kW (40 HP) to DIP 201 / 4VV - 90 kW (120 HP)



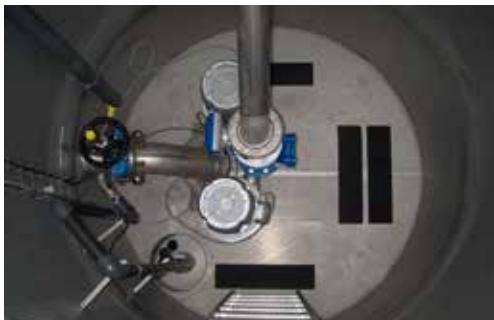
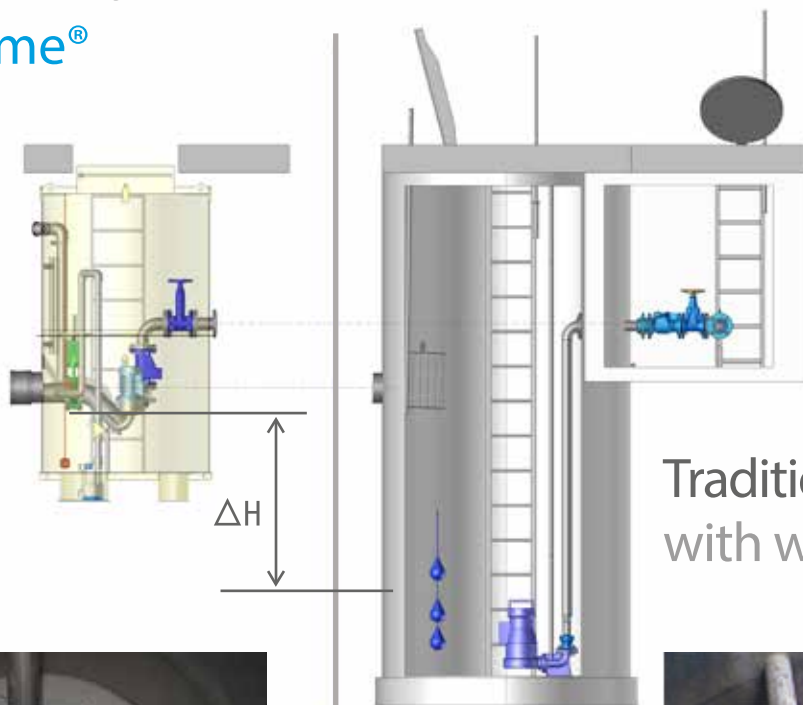
ADVANTAGES OF DIP SYSTEME®

For the last 10 years SIDE Industrie carry on innovating and developing the DIP SYSTEME® to make it not only the COMPLETE, clean, safe and ecological solution but mainly economical !

Let's compare a traditional pumping system with the direct on-line pumping DIP Systeme®:



Installation with DIP Systeme®



WHAT IS DIRECT IN-LINE PUMPING? WHAT ARE THE ADVANTAGES? WHAT ARE THE DISADVANTAGES?

The principle of direct in-line pumping is to pump directly from the gravity flow according to variations in water stream flow. This eliminates all the drawbacks of a wet well: dangerous gases (H₂S), odours, sand and grease accumulation, equipment corrosion, structural erosion and clogged floaters. This process reduces costs in a number of different ways:

- 100% savings on regular operational cleaning costs.
- Reduced construction and investment costs, with a shallower pit and often less surface area taken up.
- Reduced maintenance costs as equipment is kept dry and not in contact with polluted effluent and gases, ease of access, and designed with sustainable materials and few moving parts. With no oil pan and able to run 150 hours on dry, the DIP Systeme® is very forgiving of incorrect manoeuvres, and its wearing parts are inexpensive.
- Reduced safety risk for operating personnel due to shallower structures and equipment that operates in a healthy environment.

DISADVANTAGES OF DIRECT IN-LINE PUMPING?

Just one! Sand, present in all networks in greater or lesser concentration, is also pumped directly, unlike immersed systems within which it decants. Result: The sealed system has been continually redesigned and improved to overcome this drawback, at low replacement cost and without requiring external spraying normally required for mechanical parts, which are unable to operate dry. In the early years, this “disadvantage” was not insignificant, but today it is no longer an issue.

HOW MUCH DIRECT IN-LINE PUMPING CAPACITY DO YOU REQUIRE ?

Our regional managers are available to answer any questions you may have and to help you draw up an Equipment Selection Worksheet, also available online at www.side-industrie.com.

For combined or rainwater networks, it is assessed using peak flow as with other pumping systems, but with 2 motor units in service to avoid oversizing

all too often the cause of operational problems.

AND IF THE SYSTEM IS IN CONTINUOUS OPERATION ? OR IT STARTS TOO OFTEN ?

The system starts up, regulates and stops in line with the effluent input volume. Below approx. 10% of its capacity (a value set when put into service) it stops completely. The number of start-ups is not a problem as each motor can switch on and off 150 times an hour without reaching peak current and therefore without overheating.

THE VORTEX IS SAID TO HAVE POOR HYDRAULIC OUTPUT COMPARED TO CHANNEL IMPELLERS. HOW DOES THE DIP PERFORM IN TERMS OF ENERGY CONSUMPTION ?

That’s correct, the DIP Vortex effect acts like an open hydraulic coupler, a “torque transmitter” which provides diphasic pumping, unblockability, etc., but is therefore an intermediate impeller, consuming additional energy as compared to a channel impeller (20% to 25%). In the case of the DIP, however pumping from water stream intake and absorbed power adjusted at the input flow are enough in itself to compensate for this loss. Accordingly, consumption is virtually identical. This is just one example of energy savings with modulated pumping.

WHAT ARE THE RISKS OF BLOCKAGE? IS UPSTREAM SCREENING NECESSARY? ARE TOWELETTES A PROBLEM?

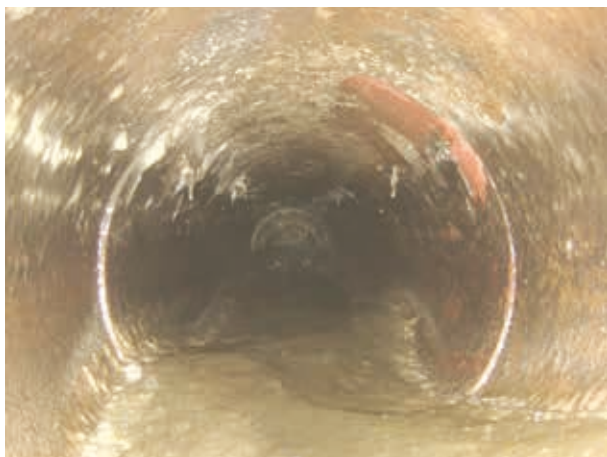
The DIP has absolutely nothing to fear from domestic towelettes and similar hygiene products which have become such a problem in recent years, as completely free flow sections have always been designed into the DIP system and direct in-line pumping does not include a storage area where such products are able to build up.

There is no need to provide any screening systems. In addition, all DIPs have motor torque control and automatic reverse, enabling them to tackle and reduce the volume of towelettes passing through during pumping (see videos).

In combined or rainwater networks, sometimes large unseemly objects pass through accidentally, and for this reason the DIP intake body is fitted with a service hatch.

IS THERE ANY RISK FROM ACCUMULATED GREASE OR FIBRES UPSTREAM?

No, because, when put into service, our technicians fine-tune the factory settings so that the operating range matches that of the flow; there can therefore be no accumulations upstream, just maximum flow trace as you can see here:



WHAT HAPPENS TO SAND AND GRIT THAT CAN COME FROM A GRAVITY NETWORK?

Sand is transported away in the flow and larger pieces of grit are caught in the rear part of the body, designed for this purpose, where they can be removed via the service hatch. If the network is really full of stones and gravel, it might be useful to fit a trap in the upstream inspection chamber, for example.



WHAT HAPPENS IF THERE IS A POWER CUT ?

The same as with other systems – pumping stops! The only difference is that the back flow starts earlier than with a submersed unit (depending on size), which doesn't represent a great security. For critical networks, an automatic start-up generator set

is the best solution, especially as the DIP doesn't need a current surge on start-up, the generator therefore cannot be sized without incurring extra costs. Otherwise, the maintenance-free and fuel-free solution is a safety tank, installed upstream on same invert.

WHAT HAPPENS IF THE MEASURING SENSOR BREAKS DOWN?

The control system ensures emergency pumping by automatically switching the Master Pump to fallback mode at a pre-programmed fixed speed and displays an alarm on the screen. This degraded mode can last for up to 150 hrs, around one week, to allow for the changing of the sensor.

WHAT SHOULD YOU DO IF ONE OF THE MOTORS BREAKS DOWN? WHAT ACTION SHOULD BE TAKEN?

If a fault has been identified but not resolved by the automatic fault management system, the control system automatically switches over to the other pump in the unit. To remove the motor unit for service, just a few minutes downtime is required, or even none at all if the DIP is in version C (suction valves for each pump). There are only 4 to 12 nuts to be loosened for the larger models. A plate is supplied with each system to seal the seating location of the removed motor. Intervention is therefore straightforward and is performed in complete safety.

HOW DO YOU KNOW THE LEVEL OF OUTLET FLOW ? CAN I USE AN ELECTROMAGNETIC FLOWMETER?

You can use a classic electromagnetic spool-piece flowmeter for a DIP upstream of a purification station where diphasic pumping (presence of air) is not required. However, for a network unit where the injection of air is used, we suggest an adapted electromagnetic meter, not requiring straight lengths, which provides an instant flow measurement on a signal of 4/20mA and an m³ (or gpm) counter. This information can be read from the screen of the SIDE ALC variators and recopied to remote management devices. Contact us for sizing in accordance with the nominal discharge diameter.

HOW DO YOU ENSURE SUFFICIENT SPEED FOR AUTOMATIC CLEANING DURING DISCHARGE ?

Regarding automatic cleaning, we must first consider the full requirements of this rule, introduced to

avoid sedimentation in the discharge from batch pumping, during pump downtime, namely during filling phases: the flow speed in the discharge pipe must reach a minimum of 0.7m/s (2.5 ft/s) at least once every 24 hours.

With direct in-line pumping, there is no filling time that exceeds 3 hours, as there is no retention volume. Sedimentation is therefore greatly reduced, especially as adjustable speed changes and full speed start-ups with the DIP system promote anti-sedimentation. Experience gained from over 1500 DIP pumps since 2003 shows that with regulated pumping at variable speed, an average speed of 0.4 m/s (1.5 ft/s) does not pose any problems.

WHY ARE SPEED VARIATORS SYSTEMATICALLY INCLUDED? WHAT FUNCTION DO THEY PERFORM AND CAN I USE A DIFFERENT MAKE?

The DIP system can function without a speed variator, in maximum degraded mode, in the event of a major problem with the control cabinet for example, for up to 150 hours, but without operational control or energy consumption control. Apart from this extreme case, it is always linked up with one automatic drive per motor, giving it real virtual intelligence (see ALC automation functions) specially developed for the system in collaboration with Vacon. Torque control, energy savings, fault management, communication and safety have been integrated into every DIP system unlike any other product on the market. 24/7 telephone assistance abroad also guarantee peace of mind for the users of our variable speed systems.

WHAT ABOUT WATER HAMMER PROBLEMS WITH THIS SYSTEM?

Water hammer effect during normal operation can be completely eliminated as long as the variators are functional. For those caused by a full power cut while the DIP is in maximum peak pumping mode, a temporary effect may be produced where the return wave could be dangerous. In such cases an air inlet valve provides good protection, to be sized according to the installation profile and performance levels. Contact us on a case by case basis.

HOW DO YOU MANAGE THE HIGH POINT OF A DISCHARGE? AND REDUCED FLOW?

With the sophisticated DIP speed variation system, such instances are managed by temporary speed increases in the case of high points and controlled

braking in the case of reduced flow, without encountering any particular difficulties. You must however verify that the type of discharge pipe selected is strong enough in low pressure areas (locking gaskets, electro-welded gaskets, etc.). Contact us for further information.

A PATENTED SYSTEM, DOES THIS MEAN THAT THERE ARE NO COMPETITORS?

Not at all! There are several competitor systems and, as S.I.D.E. Industrie is not involved in the tender market, competition between the various companies offering in-line pumping remains diverse and fierce. We even publish recommended prices on our website in the interest of complete transparency.

I'M NOT COMFORTABLE WITH CHANGE, IS ANY TECHNICAL ASSISTANCE AVAILABLE ?

Of course! We provide you with support from the design stage right up to the moment it is put into service, and we provide a 24/7 helpline service free of charge to give users of our systems peace of mind regarding their smooth operation. With our Self-monitoring OmniDIP® system, we also offer subscription to a remote factory service, for those who have GSMGPRS coverage. Contact us for more information.

WHERE CAN YOU OBTAIN SPARE PARTS ?

The assembly units are in head offices (France and USA).

All spares are available in head offices.

For vendor list please do not hesitate to contact the head offices.

See Contacts and Main Dealers page 38.

AQUAMETER FOR DIP SYSTEME®

ELECTROMAGNETIC MEASURE OF FLOW, SPEED*, CONDUCTIVITY*
WITHOUT STRAIGHT LENGTH



Converter IFC 100

* In option, with this converter IFC 300.

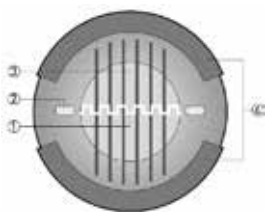
PRINCIPLE

The AQUAMETER is a compact Sensor/Converter device of electro-magnetic measure designed to complete an installation of In-line lift pumping DIP systeme® and measure the instant flow and pumped volume.

Designed for conductive wastewater, it consists of a flanged-spool that we insert directly on the DIP pump outlet, between the check valve and the shut-off valve, with no inlet-outlet straight length and guarantee reliable measurement (inaccuracy maximum of 1%), even for a 10% aerated effluent.



MEASURING PRINCIPLE



- 1 - Voltage (induced voltage proportional to flow velocity)
- 2 - Electrodes
- 3 - Magnetic field
- 4 - Field coils

This unique design, consisting of a rectangular cross section, optimized stainless steel electrodes and a homogeneous magnetic field, forms the basis for a flow-optimizing pipe cross section, and thereby provides reliable measurements that are largely independent of the flow profile. A strong and homogeneous magnetic field is generated by a current, flowing through a pair of field coils. The lining of the measuring tube is made of Rilsan® and is resistant to corrosion, aging and abrasion.

The performances applied to the direct in-line pumping DIP systeme® allows a simplified installation while keeping very accurate measurement results, even when used in wastewater and solids-laden wastewater. The signal voltage U is picked off by electrodes and is proportional to the mean flow velocity v and thus the flow rate q . The signal voltage is quite small (typically 1 mV at $v = 3 \text{ m/s}$ / 10 ft/s and field coil power of 1 W). Finally, a signal converter is used to amplify the signal voltage, filter it (separate from noise) and convert it into signals for totalizing, recording and output processing.

TECHNICAL DATA

Measuring system	Faraday's law	Materials	Sheet steel, polyurethane coated
Measuring principle		Sensor housing	
Application range	Electrically conductive fluids	Measuring tube	Non-magnetic alloy
Primary measured value	Flow velocity	Flanges	Standard : steel 1.0460/1.0038 (RSt37-2)
Secondary measured value	Volume flow, mass flow, electrical conductivity, coil temperature	Liner	DN50...300: Rilsan DN350...600: hard rubber
Design	Fully welded maintenance free sensor	Measuring electrodes	Stainless steel 1.4301 / AISI 304
Features	Standard wet calibration		Other materials on request
Nominal diameter	DN25...600 / 1...24"	Grounding electrodes	Stainless steel 1.4301 / AISI 304
			Other materials on request
Measurement range	in pipeline: -9...9m/s / -30...30ft/s in sensor: -18...18m/s / -59...59ft/s	Connection box (remote versions only)	Standard: Die-cast aluminium, polyurethane coated
Measuring accuracy	Medium: water Temperature : 20°C/68°F Inlet section 5 DN Operating pressure: 1 bar/ 1,4 psin	Process connections	DN25...600 in PN10...16 1...24" in 150lbs DN25...600 in JIS 10K
Reference conditions		DIN ASME JIS	
Operating conditions	Rilsan liner: -5...+70°C/+23...+158°F Hard rubber liner: -5...+80°C/+23...+176°F	Electrical connections	12-24 V DC DC : 4 W M20 x 1,5 (0,3...0,5 inches)
Process temperature		Power supply	
		Power consumption	
		Cable entries	
Ambient temperature	-40...+65°C / -40...+149°F	Approvals and certifications	This device fulfills the statutory requirements of the EC directives. The manufacturer certifies successful testing of the product by applying the CE mark.
		CE Sign	
Storage temperature	-50...+70°C / -58...+158°F	Hazardous areas	Standard not available
		Non-Ex ATEX	
Ambient pressure	Atmospheric	Other approvals and standards	Directive 89/336/CEE Harmonised standard: EN61326-1: 2006
		Electromagnetic compatibility	
Nominal flange pressure	up to PN16	Pressure equipment directive	Directive: 97/23/CE Category I, II ou SEP Fluid group 1 Production module H

DIN (EN 1092-1)	PN10 for DN200...600 PN16 for DN25...150	Low voltage directive	Directive : 2006/95/CE Harmonized standard : EN61010: 2001
ASME B16.5	150 lbs RF for ASME1 ...24"	Drinking water approvals	ACS, DVGW, KTW, NSF, WRc en cours
Physical condition	Liquids	Recommended flow velocity	in pipeline: -9...9m/s / -30...30ft/s in sensor: -18...18m/s / -59...59ft/s
ISO insertion length	Standard DN25...200 / ASME 1...8" DN300 / ASME 12" DN400...600 / ASME 16...24" Option : DN250 / ASME 10" DN350 / ASME 14"		
Vibration resistance	IEC 68-2-3		

DESCRIPTION AND SETTING

- Available outputs : current output (including HART®), pulse/ frequency output , copied and displayed on the ALC deck.
- Additionnal current, speed and conductivity output available with the Converter IFC 300 o in option and with the Ex i Module upon request.
- Power supply : 12-24 V DC (9-31V) [4W]
- Power consumption : AC:8VA / DC:4W



4 entries to set the signal converter without opening the housing

DISPLAY

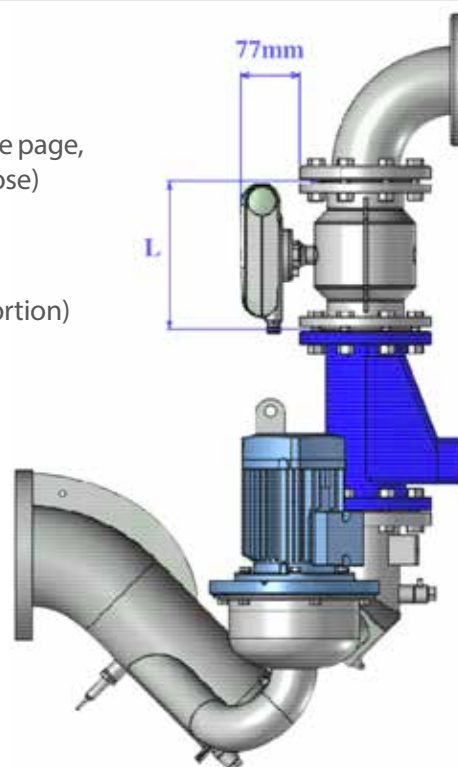
- Large backlit graphical display with intuitive operation
- 2 internal totalizers with 8 characters max.
- White backlit LCD
- Setting of parameters from 2 pages for measured values, 1 status message page, 1 graphical page (measured values and representation: settings to choose)

INSTALLATION RECOMMENDATION

- Install the flowmeter preferably after the valve (on the vertical piping portion)
- Converter on the top for installation on horizontal pipings.

DIMENSIONS AND WEIGHTS (metric)

Flanges acc. EN 1092-1		Dimensions (mm)			Approx. weight (kg)
DN	PN	L	H	W	
80	16	200	209	200	17
100	16	250	237	220	17
125	16	250	266	250	21
150	16	300	300	285	29
200	10	350	361	340	36



FLOW RATE IN m/s AND m³/h

Q 100% en m³/h				
v (m/s)	0,3	1	3	12
DN (mm)	Min. flow	Nominal flow		Max. flow
80 (3")	5,43	18,10	54,29	217,15
100 (4")	8,48	28,28	84,82	339,29
125 (5")	13,25	44,18	132,54	530,15
150 (6")	19,09	63,62	190,85	763,40
200 (8")	33,93	113,10	339,30	1357,20

HEAD OFFICES AND MAIN CONTACTS

DIP



CONTACTS

■ HEAD OFFICES

● MAIN DEALERS

EUROPE		AMERICA	
FRANCE	■ HEAD OFFICE SIDE Industrie SAS 2 bis avenue du Général de Gaulle 77250 VILLEMER - FRANCE PH + 33 (0)1 60 39 52 61 FAX + 33 (0)1 60 39 51 80	BRASIL	Improv Equipamentos R. Francisca Coral Chiquinho, 530 Jd. Brasília - Americana - SP PH: +(19) 3601-3003
ITALY	EURUBIA Divisione ambiente del Gruppo Castiglioni viale dell'Industria, 25 21052 BUSTO ARSIZIO Italy PH +39 0332 35 44 00	CARIBBEAN ISLANDS	Mr Johnny SOUTENARE PH +33 690 376 318
PORTUGAL	DIBITEC Zona Industrial de Mundão - Lote 3 3505-459 Mundão - Viseu Portugal PH +351 232 924 246		■ HEAD OFFICE USA SIDE Industrie USA 1714-1716 Fair Lane MANHATTAN KS-66502 - USA PH + 1 (735) 537 0010
ASIA			CBB Equipment (Missouri, Iowa, Nebraska, Kansas) 9900 Pflumm #67 Lenexa, KS 66215 USA PH + 1 (800) 475 0101 or (913) 485 7065
INDIA	■ HEAD OFFICE INDIA SIDE Industrie INDIA Contact : Yagnesh Patel Head - National Sales & Mktg. Cell No. : +919825096975		PUMPWORKS Inc. (California, Nevada) 16790 Placer Hills Road - Suite B Meadow Vista, CA 94722 - USA PH + 1 (530) 888 7084 or (916) 804 5384
	Aqua Machineries Pvt. Ltd. (India for states of Gujarat, Madhya Pradesh, Uttarpradesh & Delhi) Plot No. 3821, GIDC, Phase -IV, Vatva, Ahmedabad-382445 (Gujarat) India PH: +91-79-25840954		Robert Brown Associates, Inc. (Pennsylvania, Maryland, New Jersey, Delaware) 6-C Mount Pleasant Road ASTON PA 19014 PH + 1 (610) 354 0200
SOUTH KOREA	JISUN ENGINEERING Co Ltd 206-Ho gunmok-B/D, 984-44 Si-dong 153-063 SEOUL SOUTH KOREA PH +82-2-893-0903	AFRICA	
		IVORY COAST	Aguas em Processo, S.A. Route de Dabou BP 06 Songon Ivory Coast PH + 225 096 25 403

EQUIPMENT SELECTION WORKSHEET



EQUIPMENT SELECTION WORKSHEET



Please return by E-mail : info@side-industrie.com or by Fax : +33(0)1 60 39 51 80

Project ref : _____

Project location : _____

Company : _____

Address : _____

Tel : _____

Fax : _____

Contact : _____

Email : _____

For SIDE use only

Date : _____

Name : _____

Type of client : _____

Reply deadline: _____

- ☐ DIP Systeme®
☐ SIDINOX
☐ PM
☐ DomoDIP®

- ☐ Wall flange
☐ Angled
☐ Plug type ☐ Flat
☐ Guillotine vanne DN : _____
☐ DIP _____ / ____ VV - ____ kW
☐ X ☐ I
☐ D ☐ C
☐ L ☐ Y
☐ U ☐ P
☐ ALC panel
☐ OmniDIP® ☐ Wheel DIPCut®

- ☐ Sensor cable L : _____ Lfm
☐ Motor cable L : _____ Lfm
☐ Support leg
☐ Swing check valve DN _____
☐ Discharge valve DN _____
☐ Flow meter
☐ H2S Compressor
☐ Drainage pump kit

- ☐ Double door cabinet
☐ Street ☐ Enclosed area
☐ Base mounted ☐ Industry
☐ Wall mounted

- ☐ Remove surveillance ☐ Sofrel
☐ RTC ☐ WIT
☐ GSM ☐ Perax

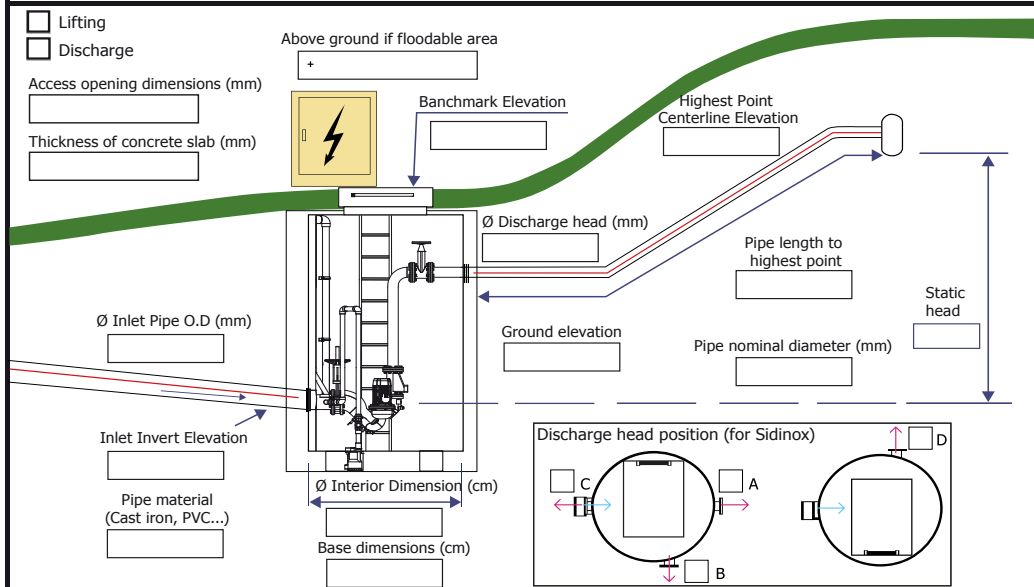
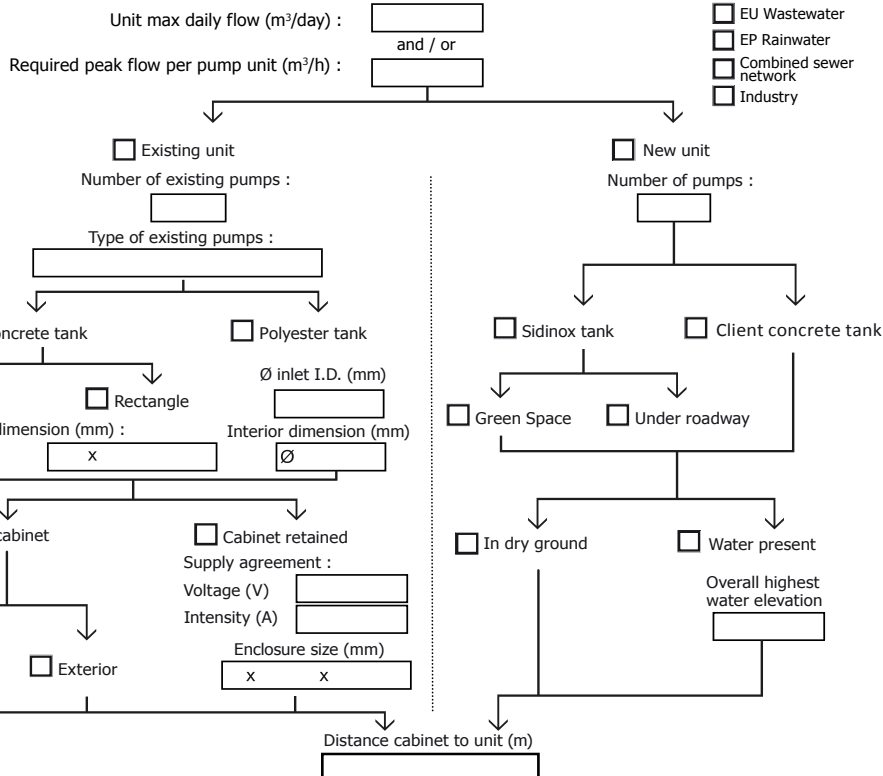
- ☐ Commissioning by phone
☐ On site commissioning
☐ Consuel
☐ Assembly assistance

- ☐ Crate packaging
☐ Factory dispatch
☐ Delivered unloaded
☐ Delivered loaded

Attached documents :

- ☐ Sketch
☐ Plan
☐ CCTP (Technical file)
☐ Photos

Notes :



(*) please specify unit

FOR ANY QUERIES, PLEASE COPY AND COMPLETE THIS DOCUMENT, SEND TO: info@side-industrie.com

OTHER CATALOGS RANGE



DIP



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