

# TOUGH AGAINST SOLIDS



The new Alligator® chopper pump series | Discharge DN 80 - DN 100





## HOMA: 75 YEARS OF WASTE WATER SYSTEMS EXPERTISE

### GREAT PERFORMANCE

HOMA pumps with cutting systems have been technical market leading solutions for decades. Based on this extensive experience, the new Alligator chopper pump series sets new standards for performance and reliability. When it comes to cost effectiveness in particular, the high efficiency of the new OC hydraulics is groundbreaking.

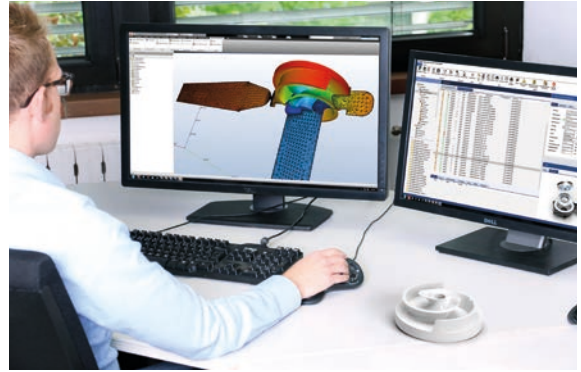
### IMPRESSIVELY RELIABLE

Problematic solids such as sanitary towels, plastic bags, textiles and wood are more and more commonplace in waste water. Pumping and sewage treatment plants are therefore increasingly reaching their limits; units get clogged up and break down. To combat this, HOMA has developed a new cutting system with the OC hydraulics that effectively shreds and removes large quantities of diverse impurities and solids which also get into the waste water via surface water. The specially designed impeller has integrated cutters and a sharp-edged radius to the wear plate, which is also equipped with its own cutter.

This design allows the two central hydraulic components to work perfectly together to catch solids, reliably break them down and ultimately remove them from the suction area via the integrated grooves on the wear plate. Thanks to their high efficiency of up to 67 %, Alligator pumps are particularly suitable for waste water applications that require high delivery pressure, but at the same time have to deal with many different kinds of solids.

In order to not only achieve the best possible efficiency values, but also reduce lifecycle costs overall, the main focus during development was on low-maintenance operation in addition to efficiency. The impeller and wear plate, which are the components subject to the most stress, are made of extremely durable chilled chrome cast iron, which withstands even abrasive substances such as sand in the pumped medium.

Based on 75 years of pump construction expertise, innovative technology and high grade materials, you can count on the German-made quality that HOMA is renowned for.



All new developments are tested and optimised in the HOMA R&D centre using the latest computational fluid dynamics software.



Before delivery, the finished units are put through their paces in the high tech test centre. This guarantees HOMA quality as you know it.

## PROVEN TECHNOLOGY FOR A BROAD RANGE OF APPLICATIONS

### EXCEPTIONAL PERFORMANCE

Features of the Alligator chopper pump series from HOMA

- No clogging or blockages
- Cutting system reliably shreds solids in the pumped medium
- Extremely wear-resistant hydraulic components made from chilled chrome cast iron with a guaranteed hardness of HRC60
- High delivery heads
- High efficiency of up to 67 %
- Energy efficient motors
- Easy maintenance thanks to modular design of hydraulics
- Low lifecycle costs



The new Alligator chopper pump series: EffTec motor (left) and P-motor versions.

# INNOVATIVE TECHNOLOGY – MAXIMUM EFFICIENCY

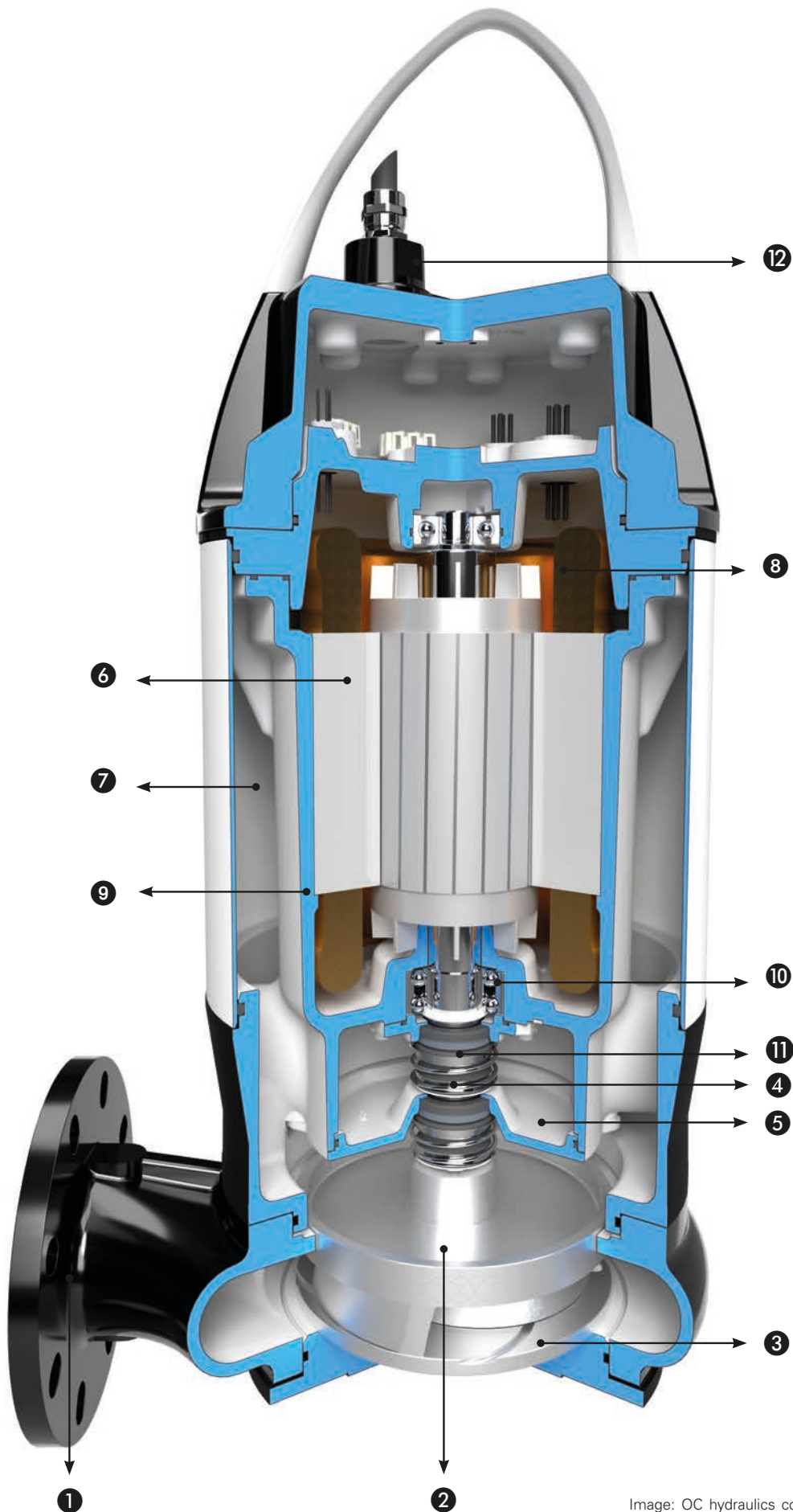


Image: OC hydraulics combined with EffTec series motor and PermaCool system

# INTELLIGENT DESIGN DOWN TO THE LAST DETAIL

The OC hydraulics combined with the proven HOMA motor technology set new standards for cost efficiency and operational reliability.

## ❶ DISCHARGE

with DIN flange DN 80 or DN 100

## ❷ IMPELLER

open OC impeller with cutting edges

## ❸ WEAR PLATE

with integrated grooves and cutter

## ❹ SHAFT SEAL

Two mechanical seals, acting independently of one another, arranged in tandem.

## ❺ OIL CHAMBER

Oil filled sealing chamber with check-up option via inspection screw. All motors supplied with seal monitoring in the oil chamber as standard.

## ❻ MOTOR

Three-phase electric motors with 2- or 4-pole winding. Insulation class of winding H (180 °C), protection rating IP 68.

## EXPLOSION PROTECTION

Depending on component assembly, also available as explosion-proof versions in accordance with Directive 2014/34/EU for equipment group II, category 2G, gas group IIB and temperature class T4(T3).

## ❼ MOTOR COOLING, T- / P-MOTOR

Motors in standard version with surface cooling in immersion operation. For dry installation or surface operation with cooling jacket, with open cooling circuit through the pumped medium (U version).

## ❼ MOTOR COOLING, PERMACOOL SYSTEM

The continuous motor cooling of the EffTec motor (ET) allows either wet well or dry installation of the units. This guarantees a low thermal load on all components, ensuring a long service life.

## ❽ THERMAL SENSOR (BIMETALLIC)

As standard in the motor winding for temperature monitoring in all models. PTC thermistor on request.

## ❾ MOISTURE MONITORING OF THE STATOR CHAMBER

on request

## ❿ SHAFT BEARINGS

robust, maintenance-free, permanently lubricated roller bearings

## ⓫ TEMPERATURE MONITORING

of the shaft bearings on request

## ⓫ CABLE INLET SEALED AGAINST PRESSURISED WATER

## THE NEW OC IMPELLER

The new OC impeller in the Alligator series has integrated cutters and a sharp-edged radius of 10 mm to the wear plate, which is also equipped with its own cutter. Both components work perfectly together to catch solids, break them down and ultimately remove them from the suction area via integrated grooves in the wear plate.

The impeller and wear plate, which are the components subject to the most stress, are made of extremely durable chilled chrome cast iron with a guaranteed hardness of HRC60, and can therefore withstand even abrasive substances such as sand in the pumped medium.



## KEY TO DESIGNATIONS

Series	Impeller design	Discharge size	Free passage	Impeller diameter	Motor frame size	Jacket cooled motor	Motor power (coded)	Motor speed	Explosion protection
<b>Pump</b>					<b>Motor</b>				
	<b>OC</b>	<b>2</b>	<b>X</b>	<b>40-</b>	<b>T</b>	<b>(U)</b>	<b>6</b>	<b>2</b>	<b>(EX)</b>
	Open impeller with cutting edge	1 = 80 mm 2 = 100 mm	X = cutting system	(mm: 5) e.g. 40 = 200 mm	T, P  ET: EffTec motor with PermaCool system for wet well and dry installation	Motor with cooling jacket for dry installation	Coded	2 = 2-pole (2900 rpm)  4 = 4-pole (1450 rpm)	

## MATERIALS

Motor housing	Grey cast iron EN-GJL-250
Pump housing	Grey cast iron EN-GJL-250
Suction cover	Grey cast iron EN-GJL-250
Impeller	High chrome iron EN-GJN-HB555 (XCr23)
Wear plate	High chrome iron EN-GJN-HB555 (XCr23)
Motor shaft	Stainless steel
Mechanical seal	Silicon carbide/silicon carbide
Cooling jacket (with U/ET version)	Stainless steel
Elastomers	NBR (Perbunan) <sup>1)</sup>
Cable	H07RN-F (Plus) <sup>2)</sup>

<sup>1)</sup> Also in FPM (Viton) <sup>2)</sup> Screened power cable on request

# DN 80 - PUMP RANGES SELECTION CHART

## DN 80

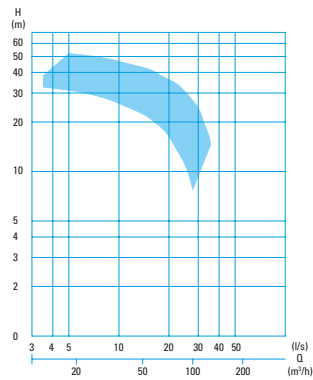
Open impeller with cutting edge

2900 rpm



PAGE 8

OC1X... -2 pole



## DN 80

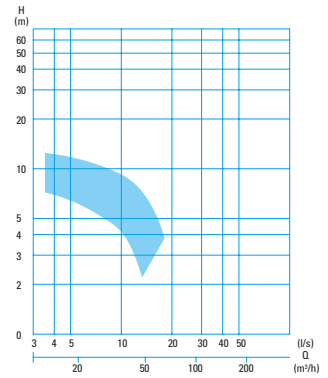
Open impeller with cutting edge

1450 rpm



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OC1X... -4 pole



# DN 100 - PUMP RANGES SELECTION CHART

## DN 100

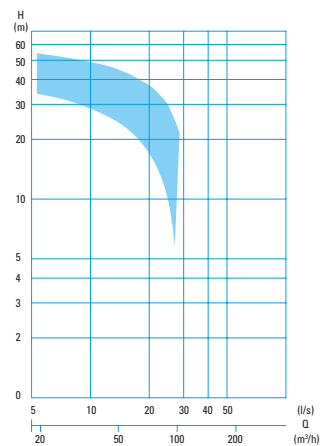
Open impeller with cutting edge

2900 rpm



PAGE 10

OC2X... -2 pole



## DN 100

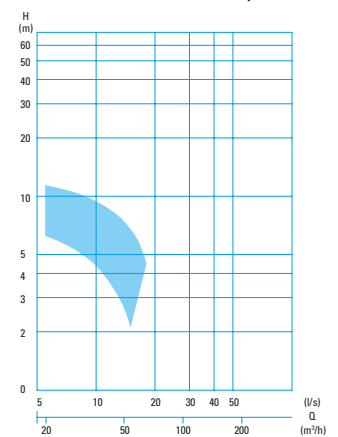
Open impeller with cutting edge

1450 rpm



PAGE 11

OC2X... -4 pole



# DN 80 - OC1X...-2 POLE

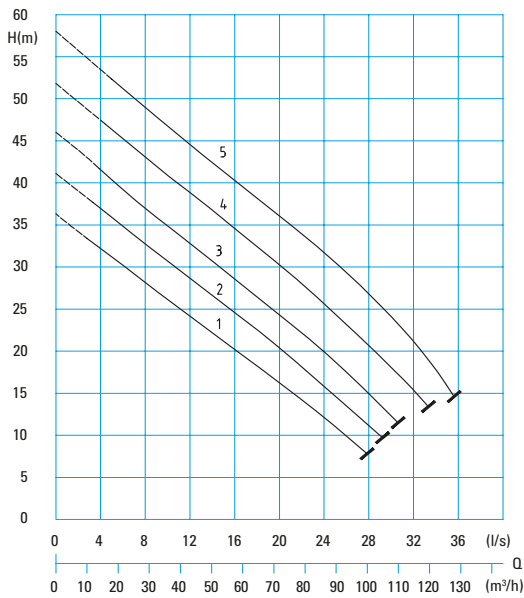


Open impeller with cutting edge

2900 rpm



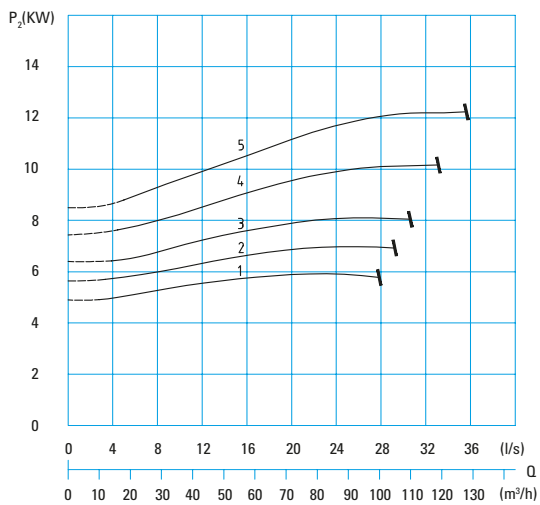
## HYDRAULIC PERFORMANCE



## Technical data

Curve no.	Pump type	WET WELL INSTALLATION				
		Motor power P <sub>1</sub> (kW)	Motor power P <sub>2</sub> (kW)	Nominal current (A)	Weight (kg)	Weight Ex (kg)
①	OC1X32-T62 (Ex)	7,5	6,4	13,5	110	110
②	OC1X34-T72 (Ex)	11,0	9,5	18,8	120	120
③	OC1X36-T72 (Ex)	11,0	9,5	18,8	120	120
④	OC1X38-T82 (Ex)	13,0	11,5	22,2	123	123
⑤	OC1X40-P92 (Ex)	16,0	14,4	27,0	178	190

## MOTOR OUTPUT



## Technical data

Curve no.	Pump type	DRY INSTALLATION				
		Motor power P <sub>1</sub> (kW)	Motor power P <sub>2</sub> (kW)	Nominal current (A)	Weight (kg)	Weight Ex (kg)
①	OC1X32-ET62 (Ex)	7,3	6,4	12,4	128	128
②	OC1X34-ET72 (Ex)	10,5	9,5	20,1	146	146
③	OC1X36-ET72 (Ex)	10,5	9,5	20,1	146	146
④	OC1X38-ET82 (Ex)	12,7	11,5	22,7	146	146
⑤	OC1X40-PU92 (Ex)	16,0	14,4	27,0	189	201



# DN 80 - OC1X...-4 POLE

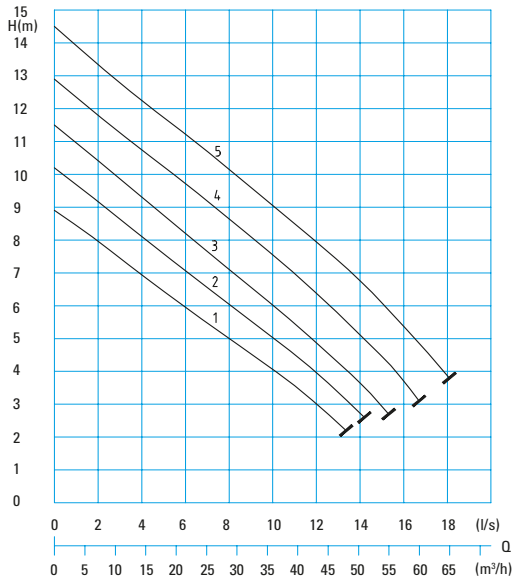


Open impeller with cutting edge

1450 rpm



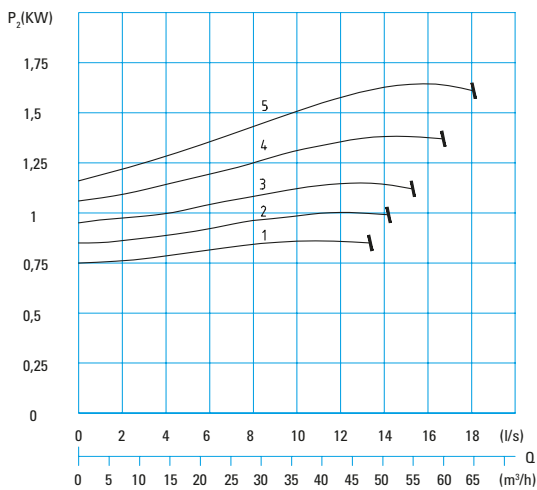
## HYDRAULIC PERFORMANCE



## Technical data

Curve no.	Pump type	WET WELL INSTALLATION				
		Motor power $P_1$ (kW)	Motor power $P_2$ (kW)	Nominal current (A)	Weight (kg)	Weight Ex (kg)
①	OC1X32-T34 (Ex)	3,4	2,9	5,8	111	111
②	OC1X34-T34 (Ex)	3,4	2,9	5,8	111	111
③	OC1X36-T34 (Ex)	3,4	2,9	5,8	111	111
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⑤	OC1X40-ET34 (Ex)	3,3	2,9	5,9	128	128

# DN 100 - OC2X...-2 POLE

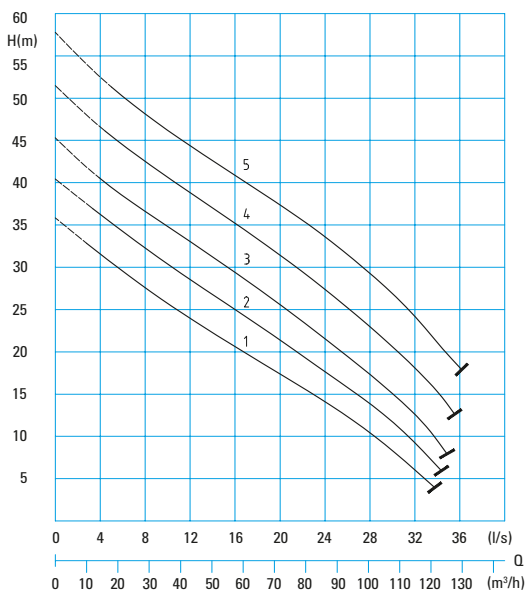


Open impeller with cutting edge

2900 rpm



## HYDRAULIC PERFORMANCE

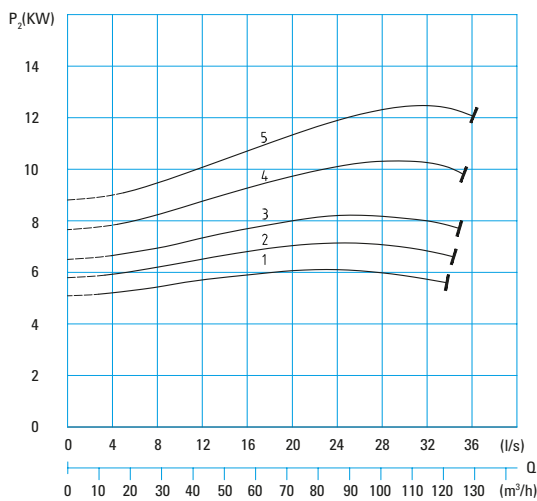


## Technical data

## WET WELL INSTALLATION

Curve no.	Pump type	Motor power		Nominal current (A)	Weight (kg)	Weight Ex (kg)
		P <sub>1</sub> (kW)	P <sub>2</sub> (kW)			
①	OC2X32-T62 (Ex)	7,5	6,4	13,5	110	110
②	OC2X34-T72 (Ex)	11,0	9,5	18,8	120	120
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## MOTOR OUTPUT



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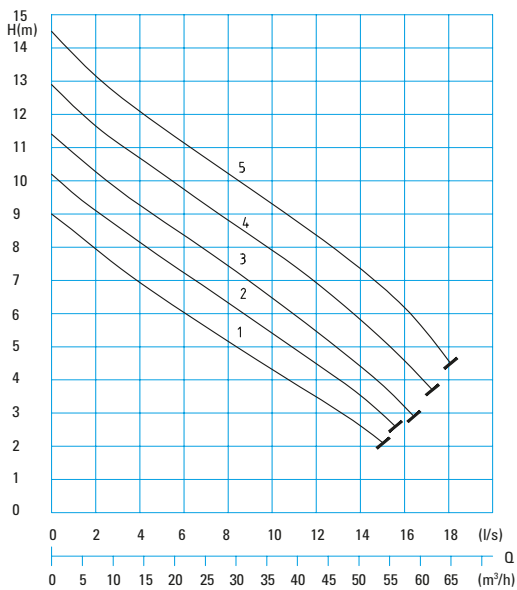


Open impeller with cutting edge

1450 rpm



## HYDRAULIC PERFORMANCE

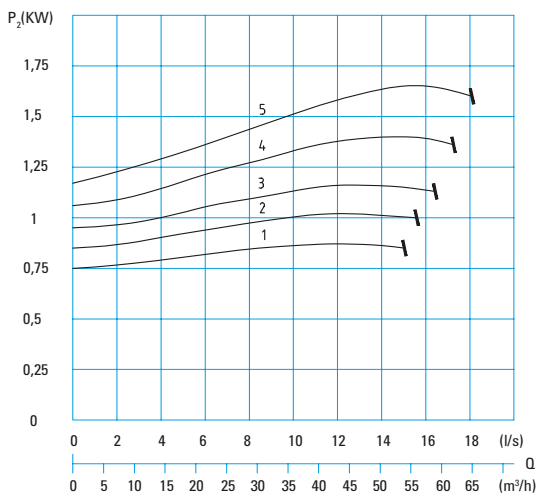


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## MOTOR OUTPUT



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## The HOMA product range

- Submersible drainage pumps
- Construction pumps
- Submersible fire pumps
- Submersible deep well pumps
- Submersible waste water pumps
- Submersible pumps with cutting systems
- Domestic waste water disposal units
- Waste water disposal units
- Pre-assembled pump stations
- Agitators
- Tank cleaning systems
- Garden pumps and automatic domestic water systems
- Propeller pumps
- Pump control and automation systems



## In operation worldwide

HOMA pumps and systems are employed in over 100 countries worldwide – in a myriad of projects, large and small, including the Palm Islands in Dubai. They meet all international safety and production standards and are certified by the relevant state or private bodies for waste water disposal. It is one of our main objectives to maintain and extend this high standard at all times.



## Sales and service network

HOMA stays close to its customers through a comprehensive network of professional sales and service agencies. HOMA also makes selecting and designing pump systems as straightforward as possible through HOPSEL, our specially developed software, available free of charge online.

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