TOUGH AGAINST SOLIDS

The new Alligator® chopper pump series | Discharge DN 80 - DN 100 | 60 HZ

HOMA PUMP TECHNOLOGY

HOMA: 80 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.

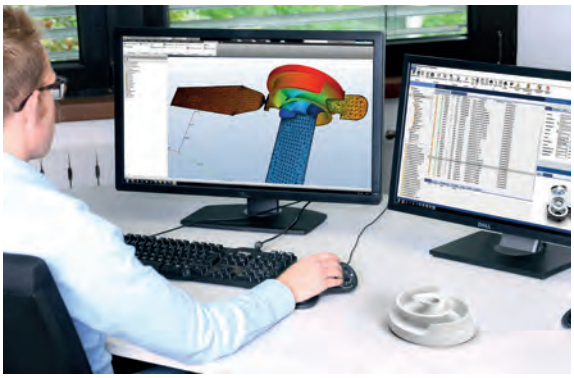
IMPRESSIVELY RELIABLE

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 65 %, 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 80 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 65 %
- 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

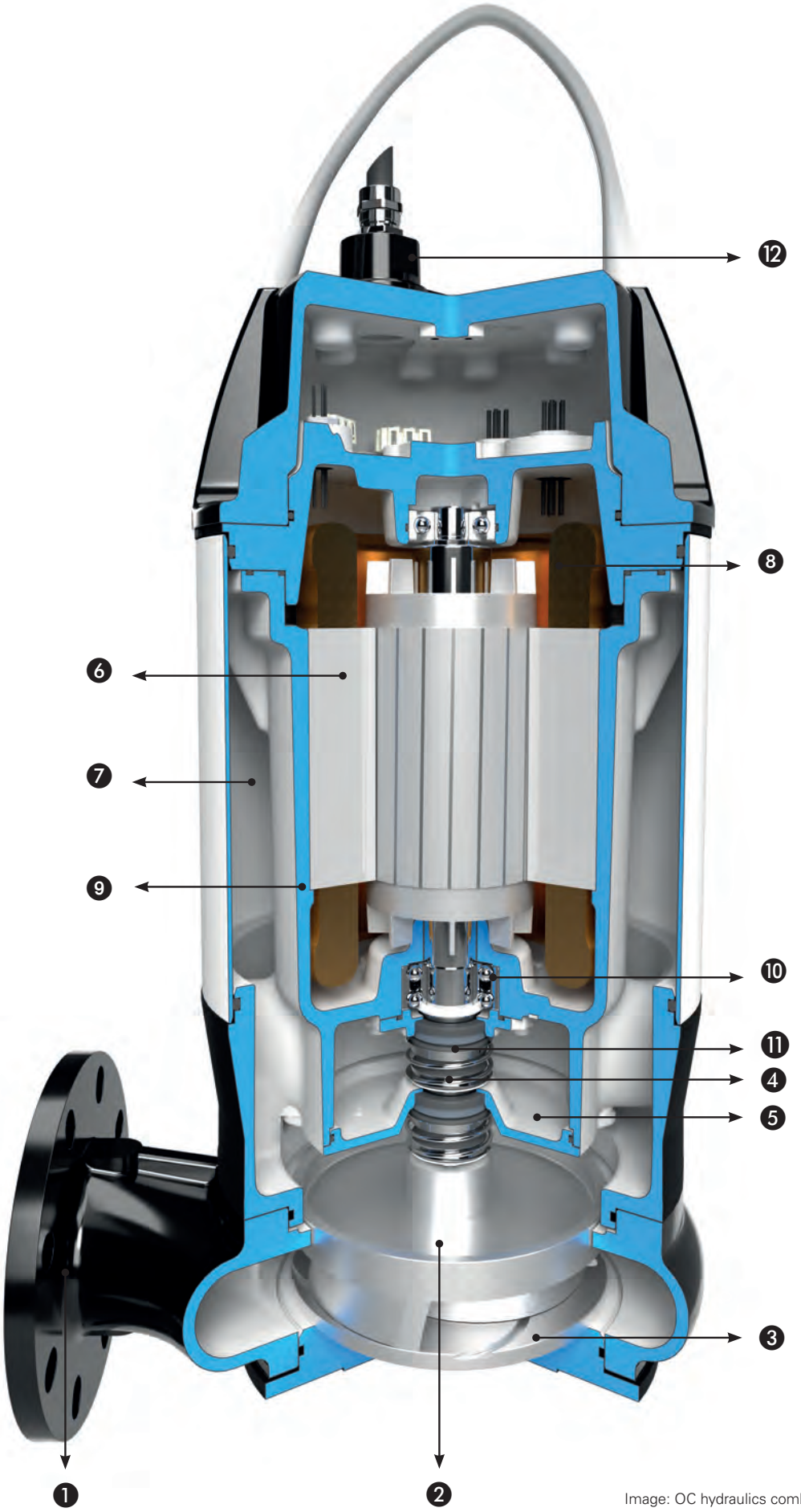


Image: OC hydraulics combined with
EffTec series motor and PermaCool system

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 - DN 100

❷ IMPELLER
self cleaning semi-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 (FM):
In addition to the standard version, selected motors are also available explosion proof according to Cl. I, Div.1, Gr. CD, T3C.

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

⓬ 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 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	Motor speed	Impeller diameter	Motor power (coded)	Motor frame size	Jacket cooled motor	Monitoring sensors	Explosion protection
Pump						Motor				
	OC	**4**	**X**	**2**	**160 (HF)**	**/13**	**T**	**(U)**	**/C**	**(FM)**
	semi-open OC impeller with cutting edges	3 inch = 80 mm 4 inch = 100 mm	X = cutting system	2 = 2-pole (3450 rpm) 4 = 4-pole (1750 rpm)	e.g. 160 mm HF: Impeller code	P2 in hp	T, P, ET = Motor frame size	Jacket cooled motor		

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) 1)
Cable	H07RN-F (Plus) 2)

1) Also in FPM (Viton) 2) Screened power cable on request

DN 80 - PUMP RANGES SELECTION CHART

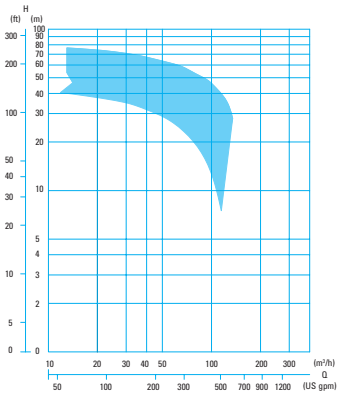
DN 80

semi-open OC impeller with cutting edges

3450 rpm

PAGE 8

OC3X... -2 pole



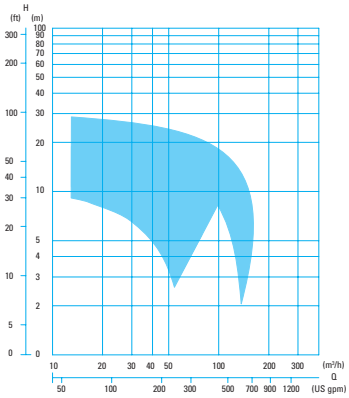
DN 80

semi-open OC impeller with cutting edges

1750 rpm

PAGE 9

OC3X... -4 pole



DN 100 - PUMP RANGES SELECTION CHART

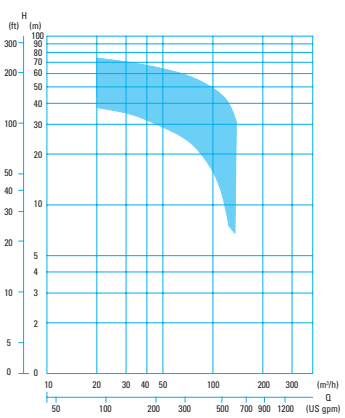
DN 100

semi-open OC impeller with cutting edges

3450 rpm

PAGE 10

OC4X... -2 pole



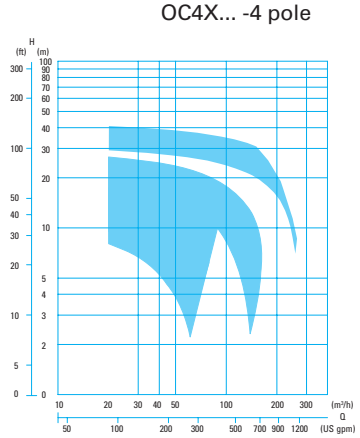
DN 100

semi-open OC impeller with cutting edges

1750 rpm

PAGE 11

OC4X... -4 pole

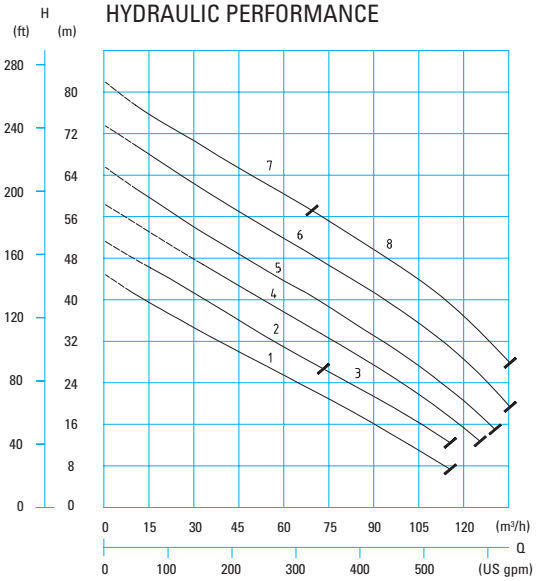


DN 80 - OC3X2...

Semi-open OC impeller with cutting edges

3450 rpm

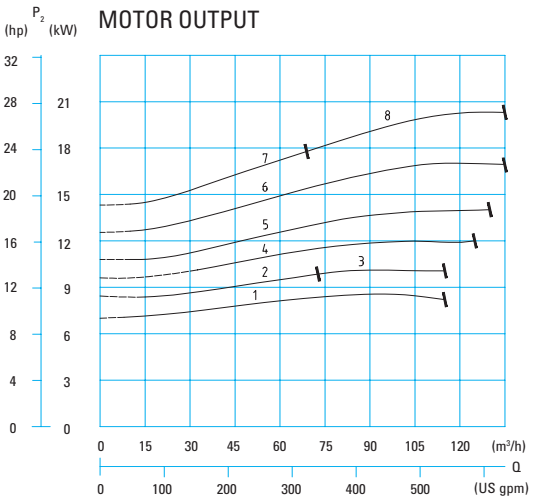
HYDRAULIC PERFORMANCE



Technical data — WET WELL INSTALLATION

Curve no.	Pump type	Motor power P_1 (kW)	Motor power P_2 (kW)	Weight (kg)	Weight FM (kg)
①	OC3X2-150/13T/C (FM)	11,1	9,8	125	125
②	OC3X2-160/13T/C (FM)	11,1	9,8	125	125
③	OC3X2-160/17,4T/C (FM)	14,6	13,0	131	131
④	OC3X2-170/17,4T/C (FM)	14,6	13,0	131	131
⑤	OC3X2-180/23,1P/C (FM)	19,0	17,2	185	197
⑥	OC3X2-190/23,1P/C (FM)	19,0	17,2	185	197
⑦	OC3X2-200/23,1P/C (FM)	19,0	17,2	185	197
⑧	OC3X2-200/30P/C (FM)	24,9	22,4	185	197

MOTOR OUTPUT



Technical data — DRY WELL INSTALLATION

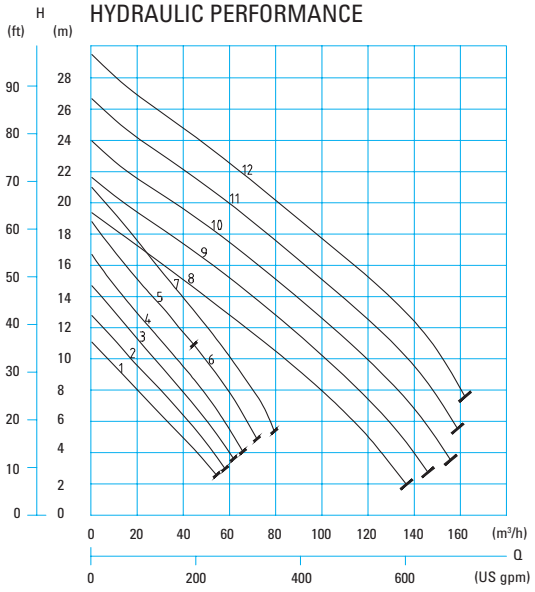
Curve no.	Pump type	Motor power P_1 (kW)	Motor power P_2 (kW)	Weight (kg)	Weight FM (kg)
①	OC3X2-150/13,1ET (FM)	10,6	9,8	164	164
②	OC3X2-160/13,1ET (FM)	10,6	9,8	164	164
③	OC3X2-160/17,4ET (FM)	14,1	13,0	165	165
④	OC3X2-170/17,4ET (FM)	14,1	13,0	165	165
⑤	OC3X2-180/23,1PU (FM)	19,0	17,2	193	205
⑥	OC3X2-190/23,1PU (FM)	19,0	17,2	193	205
⑦	OC3X2-200/23,1PU (FM)	19,0	17,2	193	205
⑧	OC3X2-200/30PU (FM)	24,9	22,4	193	205

DN 80 - OC3X4...

Semi-open OC impeller with cutting edges

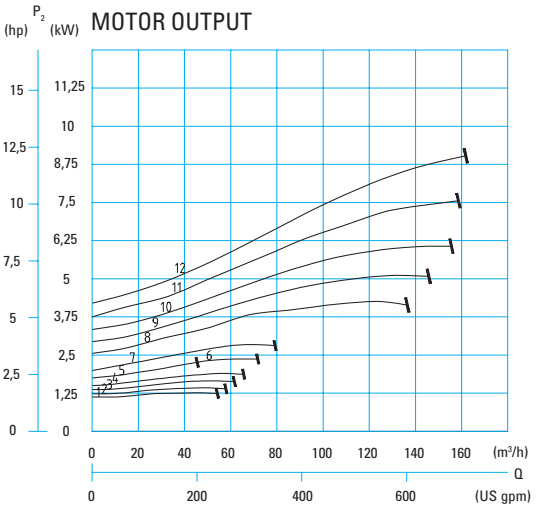
1750 rpm

HYDRAULIC PERFORMANCE



Technical data		WET WELL INSTALLATION			
Curve no.	Pump type	Motor power P_1 (kW)	Motor power P_2 (kW)	Weight (kg)	Weight FM (kg)
①	OC3X4-150/2,9T/C (FM)	2,7	2,2	109	114
②	OC3X4-160/2,9T/C (FM)	2,7	2,2	109	114
③	OC3X4-170/2,9T/C (FM)	2,7	2,2	109	114
④	OC3X4-180/2,9T/C (FM)	2,7	2,2	109	114
⑤	OC3X4-190/2,9T/C (FM)	2,7	2,2	109	114
⑥	OC3X4-190/4,3T/C (FM)	3,8	3,2	114	114
⑦	OC3X4-200/4,3T/C (FM)	3,8	3,2	114	114
⑧	OC3X4-190HF/7,5T/C (FM)	6,5	5,6	128	128
⑨	OC3X4-200HF/10,4T/C (FM)	9,0	7,8	134	134
⑩	OC3X4-210HF/10,4T/C (FM)	9,0	7,8	134	134
⑪	OC3X4-220HF/15P/C (FM)	12,5	11,2	183	195
⑫	OC3X4-230HF/15P/C (FM)	12,5	11,2	183	195

MOTOR OUTPUT



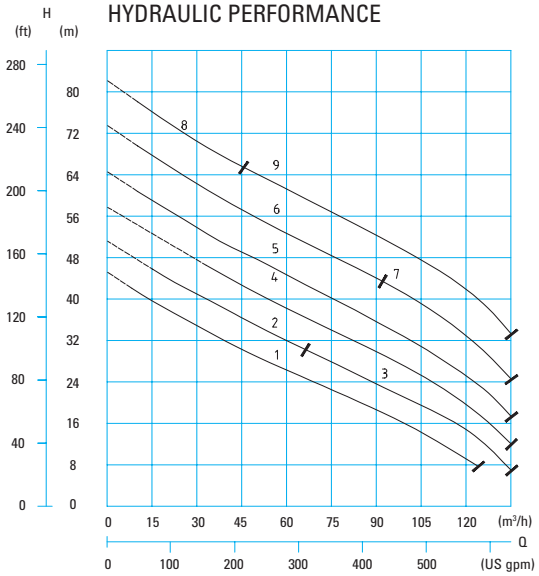
Technical data		DRY WELL INSTALLATION			
Curve no.	Pump type	Motor power P_1 (kW)	Motor power P_2 (kW)	Weight (kg)	Weight FM (kg)
①	OC3X4-150/2,9ET/C (FM)	2,5	2,2	137	137
②	OC3X4-160/2,9ET/C (FM)	2,5	2,2	137	137
③	OC3X4-170/2,9ET/C (FM)	2,5	2,2	137	137
④	OC3X4-180/2,9ET/C (FM)	2,5	2,2	137	137
⑤	OC3X4-190/2,9ET/C (FM)	2,5	2,2	137	137
⑥	OC3X4-190/4,3ET/C (FM)	3,6	3,2	137	137
⑦	OC3X4-200/4,3ET/C (FM)	3,6	3,2	137	137
⑧	OC3X4-190HF/7,5ET/C (FM)	6,6	5,6	142	142
⑨	OC3X4-200HF/10,4ET/C (FM)	8,7	7,8	162	162
⑩	OC3X4-210HF/10,4ET/C (FM)	8,7	7,8	162	162
⑪	OC3X4-220HF/15PU/C (FM)	12,5	11,2	193	205
⑫	OC3X4-230HF/15PU/C (FM)	12,5	11,2	193	205

DN 100 - OC4X2...

Semi-open OC impeller with cutting edges

3450 rpm

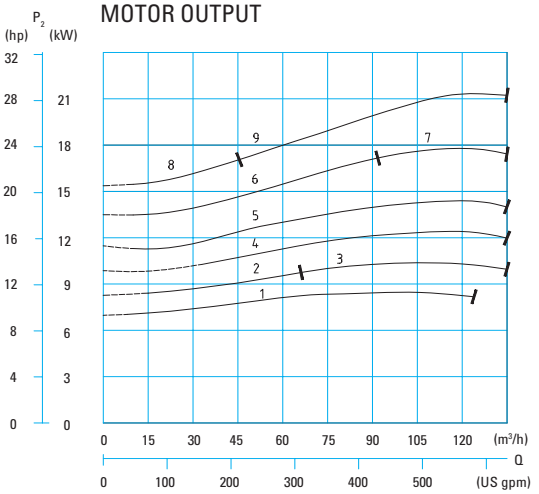
HYDRAULIC PERFORMANCE



Technical data — WET WELL INSTALLATION

Curve no.	Pump type	Motor power P_1 (kW)	Motor power P_2 (kW)	Weight (kg)	Weight FM (kg)
①	OC4X2-150/13T/C (FM)	11,1	9,8	126	126
②	OC4X2-160/13T/C (FM)	11,1	9,8	126	126
③	OC4X2-160/17,4T/C (FM)	14,6	13,0	132	132
④	OC4X2-170/17,4T/C (FM)	14,6	13,0	132	132
⑤	OC4X2-180/23,1P/C (FM)	19,0	17,2	186	198
⑥	OC4X2-190/23,1P/C (FM)	19,0	17,2	186	198
⑦	OC4X2-190/30P/C (FM)	24,9	22,4	186	198
⑧	OC4X2-200/23,1P/C (FM)	19,0	17,2	186	198
⑨	OC4X2-200/30P/C (FM)	24,9	22,4	186	198

MOTOR OUTPUT



Technical data — DRY WELL INSTALLATION

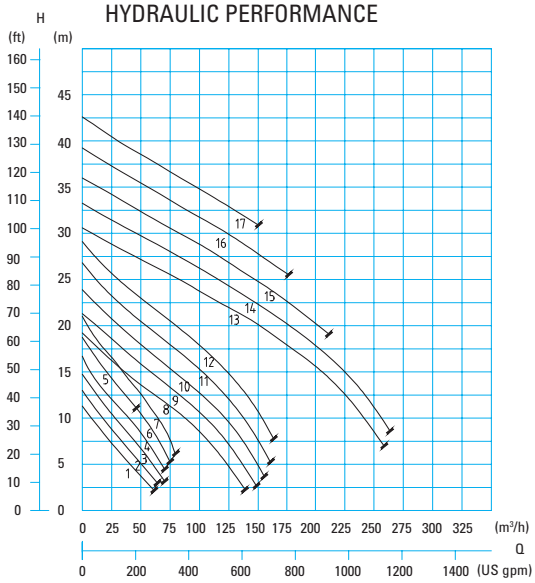
Curve no.	Pump type	Motor power P_1 (kW)	Motor power P_2 (kW)	Weight (kg)	Weight FM (kg)
①	OC4X2-150/13,1ET (FM)	10,6	9,8	165	165
②	OC4X2-160/13,1ET (FM)	10,6	9,8	165	165
③	OC4X2-160/17,4ET (FM)	14,1	13,0	166	166
④	OC4X2-170/17,4ET (FM)	14,1	13,0	166	166
⑤	OC4X2-180/23,1PU (FM)	19,0	17,2	194	206
⑥	OC4X2-190/23,1PU (FM)	19,0	17,2	194	206
⑦	OC4X2-190/30PU (FM)	24,9	22,4	194	206
⑧	OC4X2-200/23,1PU (FM)	19,0	17,2	194	206
⑨	OC4X2-200/30PU (FM)	24,9	22,4	194	206

DN 100 - OC4X4...

Semi-open OC impeller with cutting edges

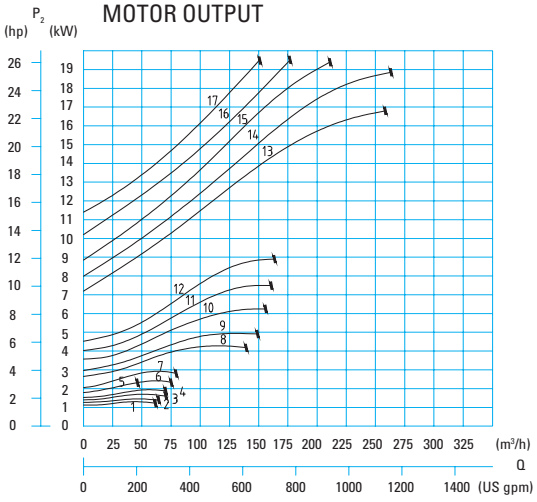
1750 rpm

HYDRAULIC PERFORMANCE



Technical data		WET WELL INSTALLATION			
Curve no.	Pump type	Motor power P_1 (kW)	Motor power P_2 (kW)	Weight (kg)	Weight FM (kg)
①	OC4X4-150/2,9T/C (FM)	2,7	2,2	110	115
②	OC4X4-160/2,9T/C (FM)	2,7	2,2	110	115
③	OC4X4-170/2,9T/C (FM)	2,7	2,2	110	115
④	OC4X4-180/2,9T/C (FM)	2,7	2,2	110	115
⑤	OC4X4-190/2,9T/C (FM)	2,7	2,2	110	115
⑥	OC4X4-190/4,3T/C (FM)	3,8	3,2	115	115
⑦	OC4X4-200/4,3T/C (FM)	3,8	3,2	115	115
⑧	OC4X4-190HF/7,5T/C (FM)	6,5	5,6	128	128
⑨	OC4X4-200HF/10,4T/C (FM)	9,0	7,8	134	134
⑩	OC4X4-210HF/10,4T/C (FM)	9,0	7,8	134	134
⑪	OC4X4-220HF/15P/C (FM)	12,5	11,2	183	195
⑫	OC4X4-230HF/15P/C (FM)	12,5	11,2	183	195
⑬	OC4X4-240/25P/C (FM)	20,7	20,7	238	253
⑭	OC4X4-250/29P/C (FM)	24,3	21,6	238	253
⑮	OC4X4-260/29P/C (FM)	24,3	21,6	238	253
⑯	OC4X4-270/29P/C (FM)	24,3	21,6	238	253
⑰	OC4X4-280/29P/C (FM)	24,3	21,6	238	253

MOTOR OUTPUT



Technical data		DRY WELL INSTALLATION			
Curve no.	Pump type	Motor power P_1 (kW)	Motor power P_2 (kW)	Weight (kg)	Weight FM (kg)
①	OC4X4-150/3,0ET (FM)	2,5	2,2	138	138
②	OC4X4-160/3,0ET (FM)	2,5	2,2	138	138
③	OC4X4-170/3,0ET (FM)	2,5	2,2	138	138
④	OC4X4-180/3,0ET (FM)	2,5	2,2	138	138
⑤	OC4X4-190/3,0ET (FM)	2,5	2,2	1 38	138
⑥	OC4X4-190/4,3ET (FM)	3,6	3,2	138	138
⑦	OC4X4-200/4,3ET (FM)	3,6	3,2	138	138
⑧	OC4X4-190HF/7,5ET (FM)	6,6	5,6	142	142
⑨	OC4X4-200HF/10,5ET (FM)	8,7	7,8	162	162
⑩	OC4X4-210HF/10,5ET (FM)	8,7	7,8	162	162
⑪	OC4X4-220HF/15PU (FM)	12,5	11,2	193	205
⑫	OC4X4-230HF/15PU (FM)	12,5	11,2	193	205
⑬	OC4X4-240/25PU (FM)	20,7	20,7	251	263
⑭	OC4X4-250/29PU (FM)	24,3	21,6	251	263
⑮	OC4X4-260/29PU (FM)	24,3	21,6	251	263
⑯	OC4X4-270/29PU (FM)	24,3	21,6	251	263
⑰	OC4X4-280/29PU (FM)	24,3	21,6	251	263

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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HOMA PUMP TECHNOLOGY

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