

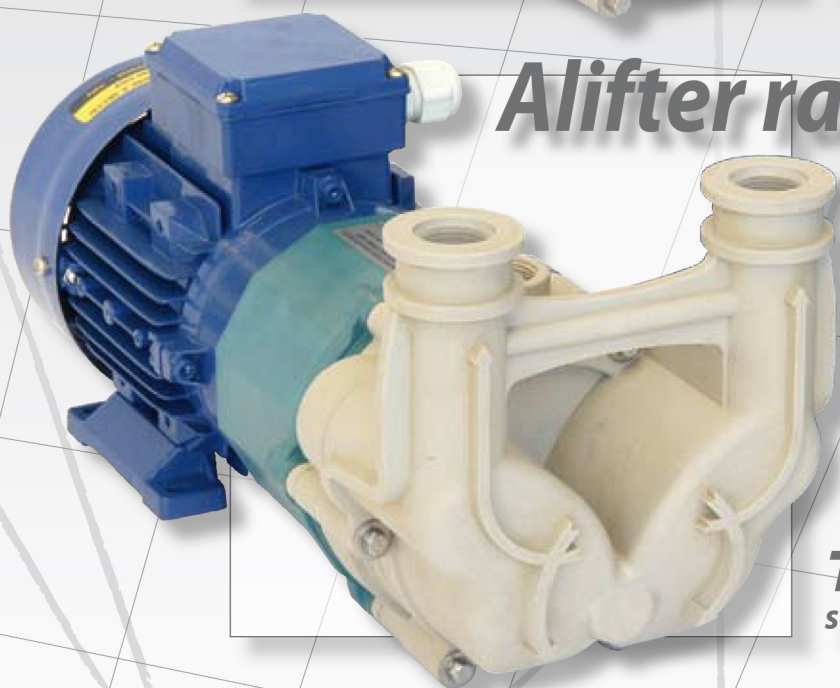
ARGAL

CHEMICAL PUMPS



Prima range

TMP
centrifugal



Alifter range

TMA
self-priming

*magnetical driven pumps
in thermoplastic materials*

In this catalog Argal proposes the range of PRIMA pumps, magnetically driven, inclusive of centrifugal serie named **TMP** and the self-priming volumetric execution named **TMA** of the ALIFTER range.

Single stage, close-coupled execution, strongly built through an injection-moulding process and ready to fit normalized motors. Argal operates with ISO 9001:2000 Quality System certified by SQS-IQNet.



View of TMP and TMA pumps in different materials.

TMP PUMPS SERIE

The pumps of the **TMP** serie, magnetically driven, have been developed following the idea of previous AM serie, but trying to give a more concise answer to the actual demands of the market. These pumps are centrifugal, horizontal axis, close-coupled types, the bodies are entirely built with reinforced thermoplastic polymers, and materials for internal components are: ceramic oxides, HD carbon, fluorinated elastomers: which mean any contact of metallic parts with the pumped fluid is avoided. This combination of materials is correctly chosen to obtain the best in the performances and on a small scale: "chemical pumps".

MAIN FEATURES

Versatility and performances.

You can practically pump all the chemicals at low and medium temperatures with all the bodies in GFR-PP (glass fibre reinforced polypropylene) or CFF-E-CTFE (Etylene-ChloroTrifluoroEtylene carbon fibre filled).

Strong magnetic coupling made up of rare-earth materials (Neodimium Iron Boron) and "N" (standard), "P" (powered) or "S" (strong-powered) versions allow to pump, also at maximum flow, liquids with 1.05 - 1.35 - 1.8 specific gravity respectively.

R-N-X: three internal configuration of constructive materials for many applications: from clean water to waste and slightly

abrasive liquids, strong alkali or salts such as sodium hypochlorite, and acids such as chromic, nitric, sulphuric, etc..

"Hermetic" pump

The outlet magnet assembly driven by the motor shaft, produces a magnetic torque dragging up in rotation the inside magnet assembly on which the impeller is over moulded.

The rear casing, having appropriate shape and joined to the volute casing, divides the two magnetic units, making an hermetic case all around the impeller.

Safety and life

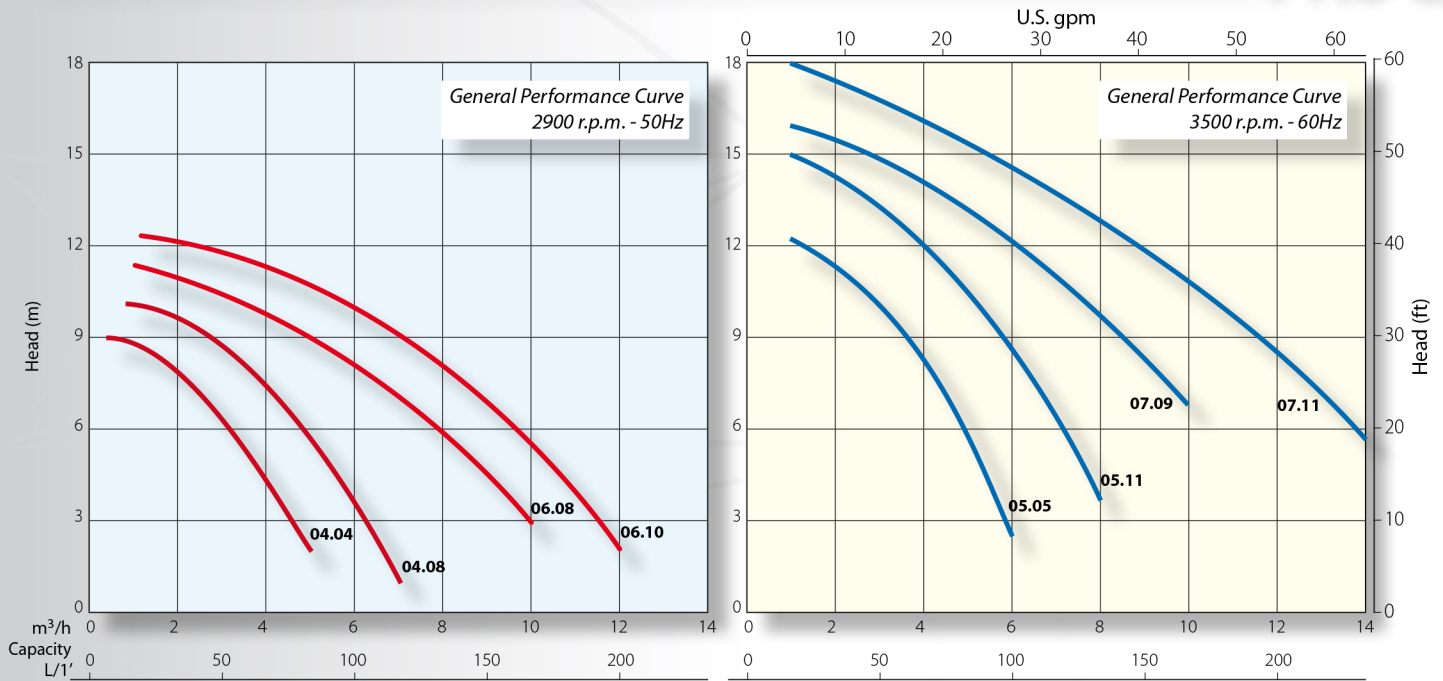
The drive magnetic system finally excludes any type of rotating seal. The only need of the seal is guaranteed thanks to an O-ring static gasket, in the connection between volute casing and rear casing.

Special solutions and employed materials occasionally allow dry running operation (starting from 15 min. up to many hours in function of working conditions), avoiding any damages inside the TMP pumps. These solutions require an internal structure "R".



is member of





NOTES: All curves are referred to: water at 20°C - viscosity 1 °E - specific gravity 1 kg/dm³ pt

THE MATERIALS

table 1

VERSION	REINFORCED POLYMERS	MIN. TEMP.	MAX TEMP.	ENVIRONMENT TEMP.
WR	GFR/PP	-5°C (23°F)	80°C (176°F)	0÷40°C (14÷104°F)
GF	CFF/E-CTFE	-20°C (-4°F)	100°C (212°F)	-20÷40°C (-4÷104°F)
GX*				

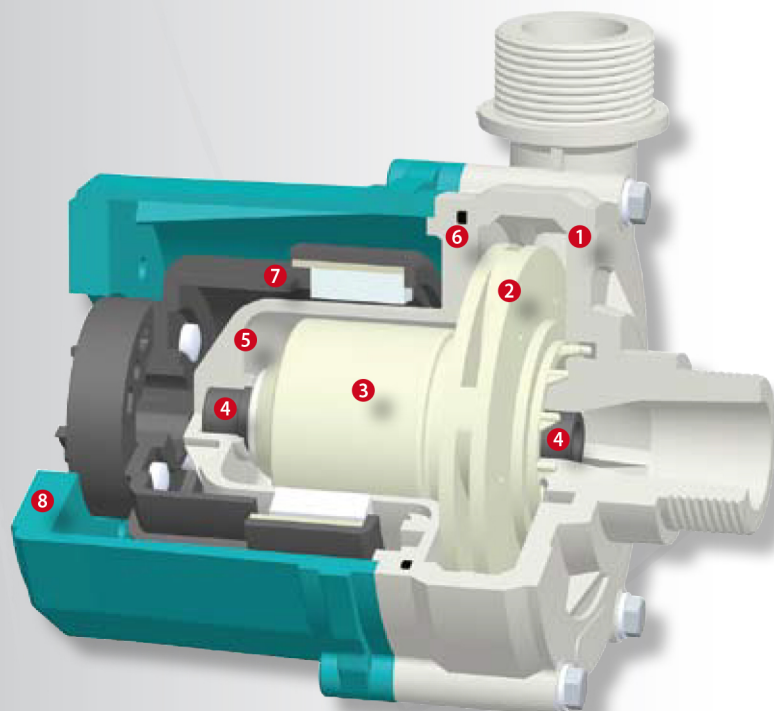
Note: Maximum inlet pressure: 1,5 bar - (*) Compliant to ATEX 94/9/EC regulations

THE CONSTRUCTIONS

table 2

VERSION	WR			GF			GX*	
	R1	X1	N1	R2	X2	N2	R2	N2
Volute casing	GFR-PP			CFF-E-CTFE				
Rear casing								
Centrifugal impeller								
Guide bushing	CARB.HD	SiC	GFR-PTFE	CARB.HD	SiC	GFR-PTFE	CARB.HD	GFR-PTFE
Shaft	CER			SiC				
Thrust bush								
OR gasket	FKM (1)			FKM (1) (2)				
Screws	Stainless steel							

Upon request:(1)EPDM and (2) FFKM - * Compliant to ATEX 94/9/EC regulations



TMP - SECTION VIEW

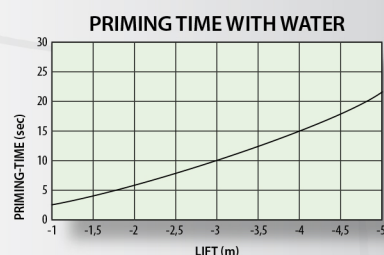
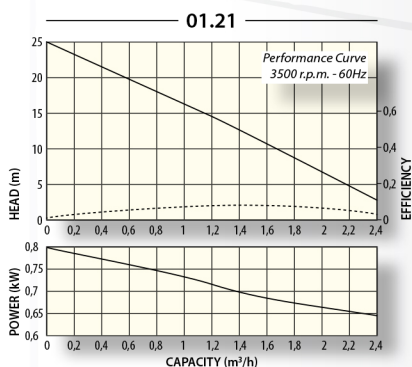
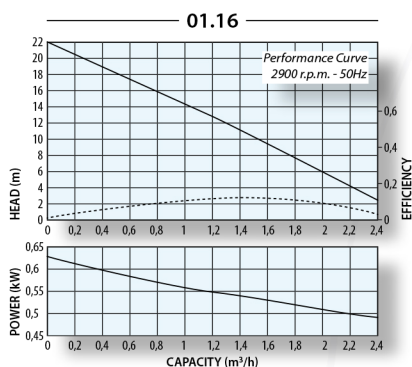
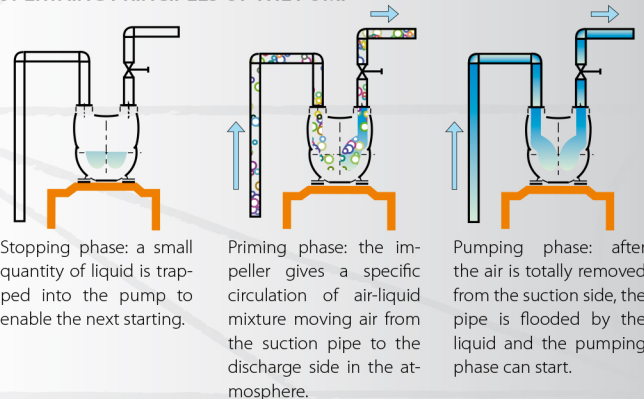
- 1 - Volute casing
- 2 - Centrifugal impeller (covered type)
- 3 - Centrifugal impeller (magnetic part)
- 4 - Guide bushings
- 5 - Rear casing
- 6 - OR gasket
- 7 - Drive magnet assembly
- 8 - Bracket

The self priming, magnetic drive pumps of the TMA serie are volumetric, can deliver the flow in both directions reversing the direction of rotation of the motor and are adequate to speedily prime chemical liquids with high specific gravity and/or high vapour tension.

MAIN FEATURES

- Start-up with empty pipes
- Fast priming-phase
- Maximum Lift = -5 m
- Reversible (inlet-outlet reversal)
- Suitable for specific weight up to 2 kg/dm³
- Suitable for vapour pressure up to 1 m (H₂O @ 45°C)
- Minimum NPSHa (available on the plant) = 3 m (abs)
- Impeller replaceable apart from magnets
- IEC or NEMA standard motors can be installed

OPERATING PRINCIPLES OF THE PUMP



THE MATERIALS

VERSION	REINFORCED POLYMERS	MIN. TEMP.	MAX TEMP.	ENVIRONMENT TEMP.
WR	GFR/PP	-5°C (23°F)	60°C (140°F)	0÷40°C (14÷104°F)
GF	CFF/E-CTFE	-20°C (-4°F)	90°C (194°F)	-20÷40°C (-4÷104°F)

Note: Maximum inlet pressure: 1,5 bar

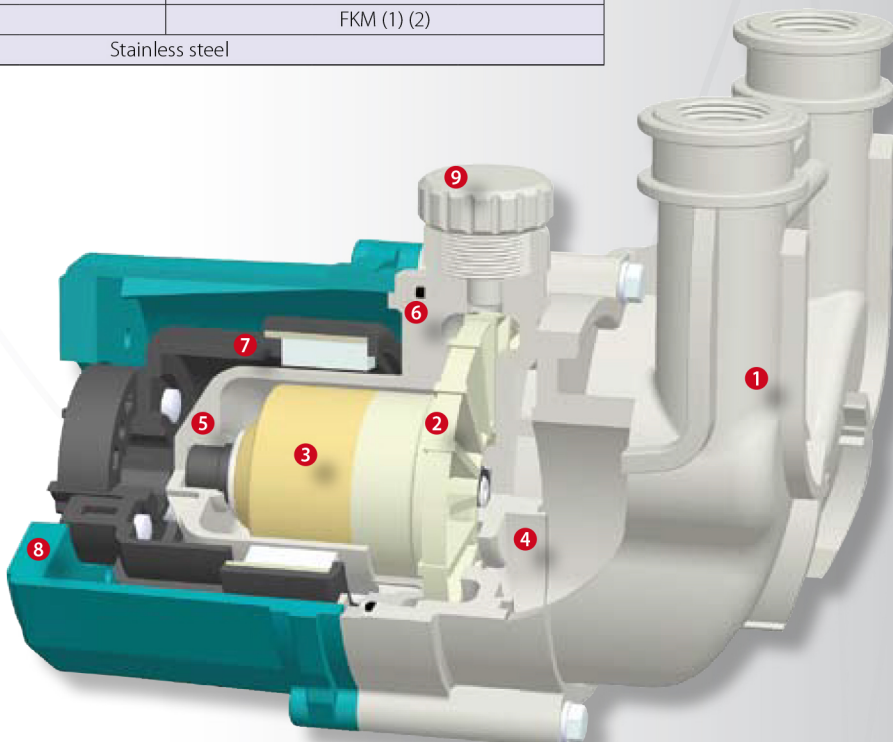
THE CONSTRUCTIONS

VERSION	WR			GF		
	R1	X1	N1	R2	X2	N2
Volute casing	GFR-PP			CFF-E-CTFE		
Rear casing						
Centrifugal impeller						
Guide bushing	CARB,HD	SiC	GFR-PTFE	CARB,HD	SiC	GFR-PTFE
Shaft	CER			SiC		
Thrust bush						
OR gasket	FKM (1)			FKM (1) (2)		
Screws	Stainless steel					

Upon request:(1)EPDM and (2) FFKM

TMA - SECTION VIEW

- 1 - Connections casing
- 2 - Impeller
- 3 - Magnetic core
- 4 - Front volute casing
- 5 - Rear casing
- 6 - OR gasket
- 7 - Drive magnet assembly
- 8 - Bracket
- 9 - Filling plug



PUMP SPECIFICATIONS

table 5

Connections		TMP								TMA	
	Thread	04.04	05.05	04.08	05.11	06.08	07.09	06.10	07.11	01.16	01.21
DeM	BSP-NPT	3/4" m		1" m		1 1/4" m		1 1/4" m		3/4" f	
DeA	BSP-NPT	3/4" f		1" m		1 1/4" m		1 1/4" m		3/4" f	
	Flange										
DnM-DnA	ISO			25		32		32		20	
DnM-DnA	ANSI			1"		1 1/4"		1 1/4"		1"	

MOTOR SPECIFICATIONS 50Hz models

table 6

		04.04			04.08			06.08			06.10			01.16		
		N	P	S	N	P	S	N	P	S	N	P	S	N	P	S
Power (IEC) 50 Hz	kW	0.18	0.25	0.37	0.25	0.37	0.55	0.37	0.55	0.75	0.55	0.75	1.1	0.55	0.75	1.1
Motor size	IEC	63A	63B	71A	63B	71A	71B	71A	71B	80A	71B	80A	80B	71B	80A	80B
Phases	N.	3phase - 1phase														
Std. voltage (IEC)	V	400 ± 5% 50Hz - 220 ± 5% 50Hz														
Motor protection	IP	55														

MOTOR SPECIFICATIONS 60Hz models

table 7

		05.05			05.11			07.09			07.11			01.21		
		N	P	S	N	P	S	N	P	S	N	P	S	N	P	S
Power (IEC) 60 Hz	kW	0.25	0.37	0.55	0.37	0.55	0.75	0.55	0.75	1.1	0.75	1.1		0.75	1.1	
Motor size	IEC	63B	71A	71B	71A	71B	80A	71B	80A	80B	80A	80B		80A	80B	
Phases	N.	3phase - 1phase														
Std. voltage (IEC)	V	460 ± 10% 60Hz - 230 ± 10% 60Hz														
Motor protection	IP	55														

WEIGHT 50-60Hz models

table 8

Pump weight (without motor)			Motor weight					
WR	GF	GX	Version	IEC 3phase - 1phase				
1,5 - (2,5*)	2 - (3*)		Frame	63A	63B	71A	71B	80A
			Kg	5,6	6,3	7,3	8,2	10,8

*Weight referred to TMA

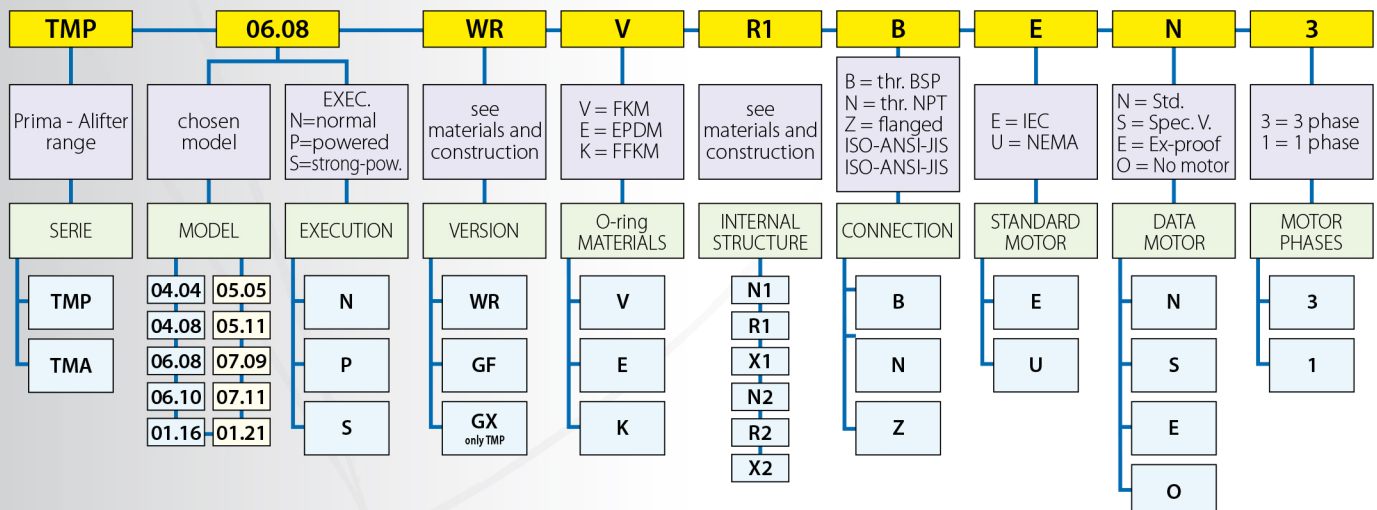


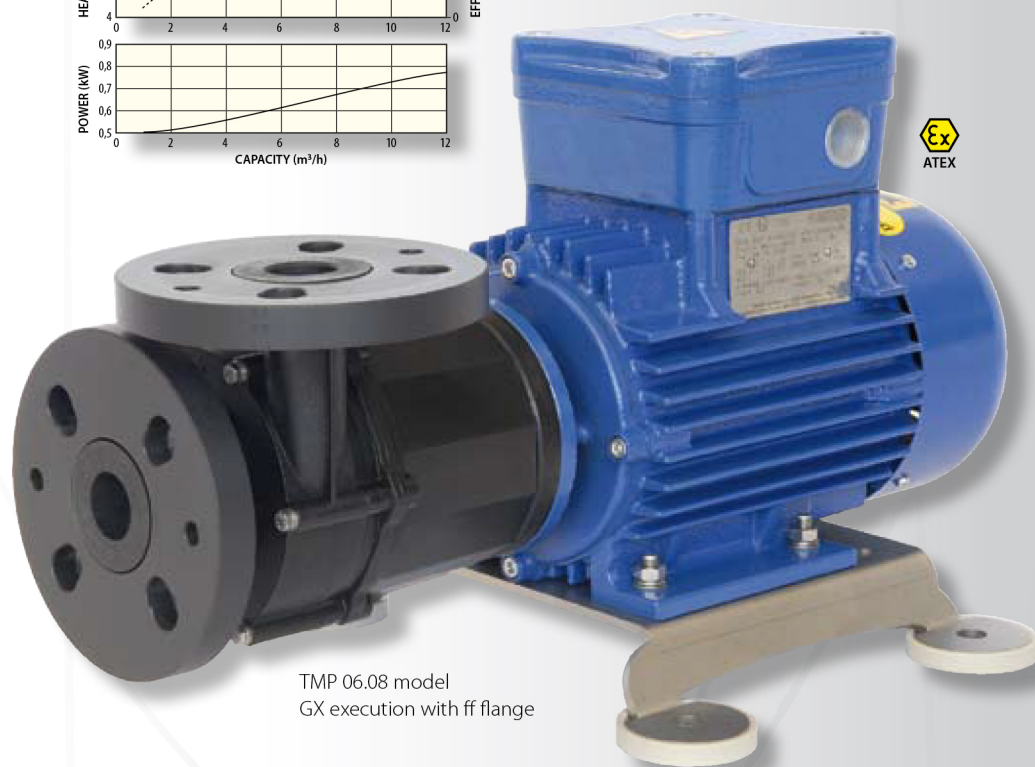
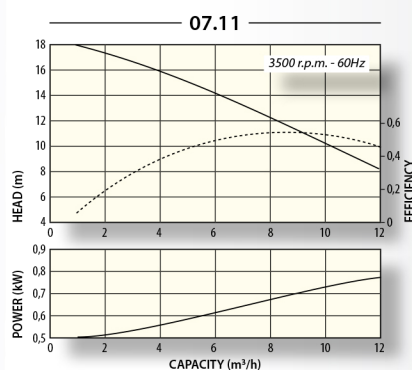
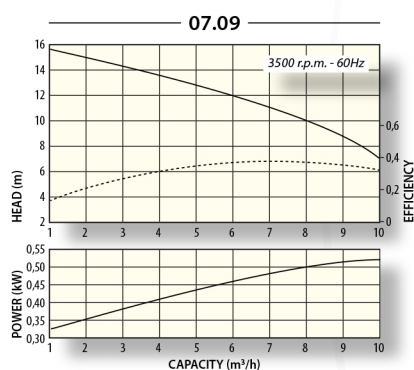
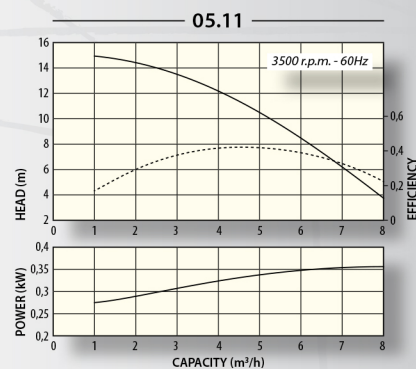
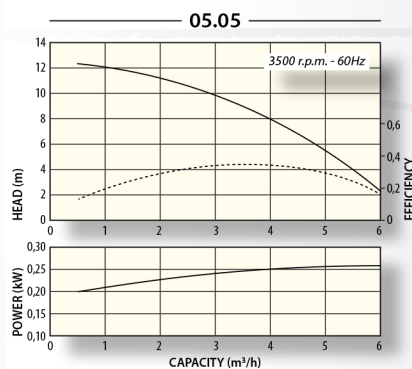
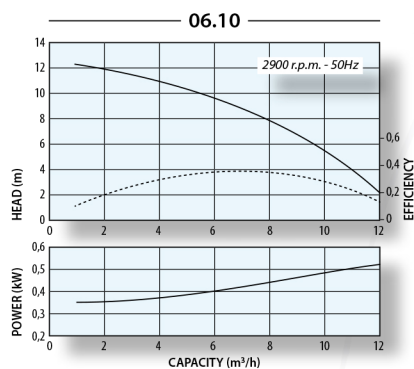
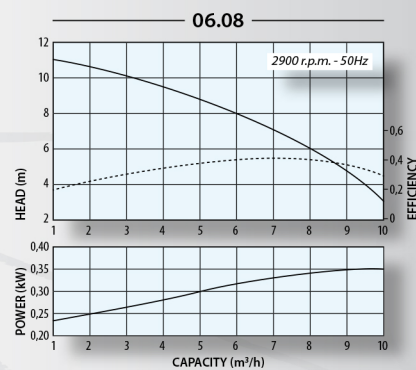
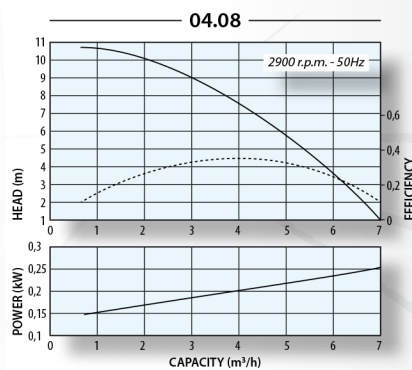
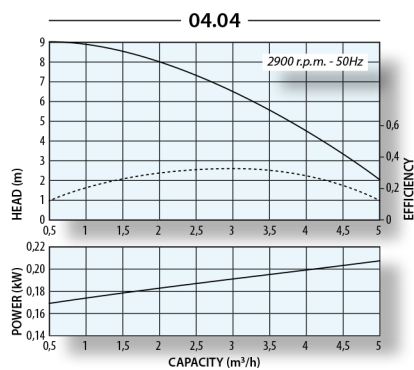
TMA pump and trolley



PUMP IDENTIFICATION LABEL

table 9

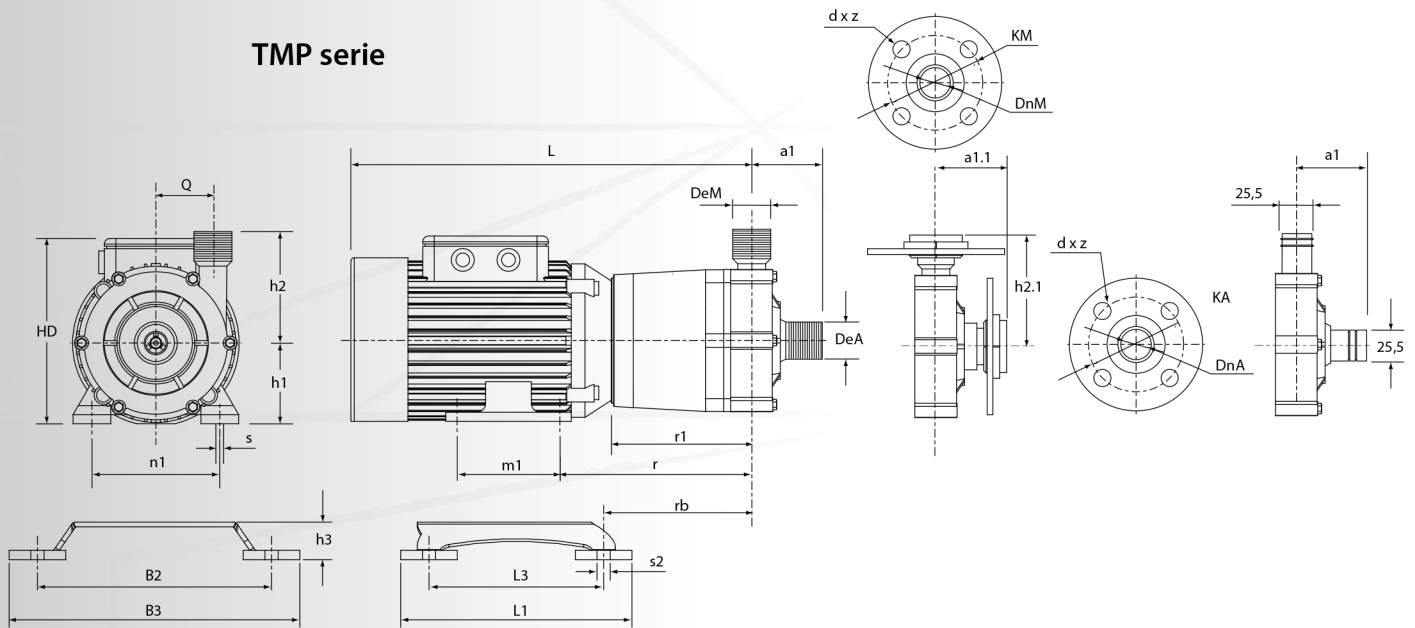




Labels in this catalog

GFR/PP	Glass fibre reinforced Polypropylene (30%)	EPDM	Etylene-Propylene rubber
CFF/E-CTFE	Etylene-Chloro Trifluoro Etylene carbon fibre filled (20%)	BSP - m	BSP parallel threaded male connect. (according to ISO 7/1)
CARB. H.D.	Carbon hight density	NPT - m	Threaded male NPT connections
SiC	Silicon Carbide	ND	Nominal diameter
CER	Alumina ceramic at 99,7%	ISO	Ref. Flange ISO 2084 - NP10
GFR/PTFE	Glass fibre reinforced PTFE	ANSI	Ref. Flange ANSI B 16.5 - Flat Face
FKM	Fluorine elastomer	IEC	According to E.C. motors
FFKM	Perfluorelastomer	NEMA	Accordind to U.S. motors

TMP serie

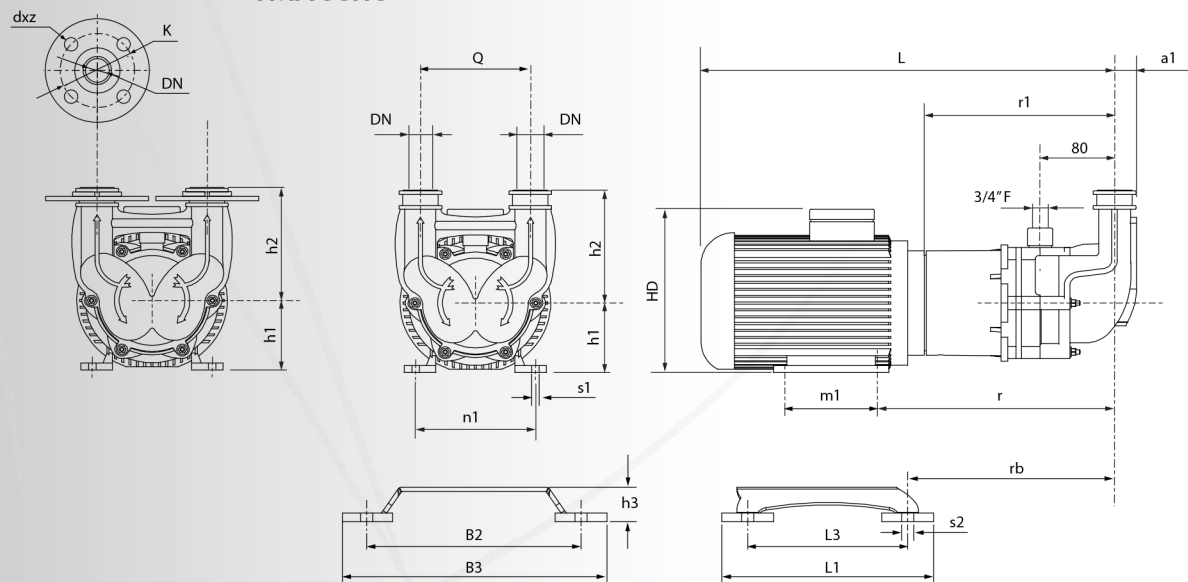


DIMENSIONS WITH IEC MOTORS

table 8

	TMP 50Hz												TMP 60Hz												TMA 50HZ			TMA 60HZ		
	04.04			04.08			06.08			06.10			05.05			05.11			07.09			07.11			01.16			01.21		
	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S
a1	62			62			62			62			62			62			62			62			23,5			23,5		
a1.1	70			70			70			70			70			70			70			70								
Q	47			49			53			53			47			49			53			53			118			118		
h2	100			100			100			100			100			100			100			100			129			129		
h2.1	108			108			108			108			108			108			108			108								
L(*)	330	330	348	330	348	348	348	348	388	348	388	388	330	348	348	348	348	388	348	388	388	388	388		435	450	450	435	450	450
h1	63	63	71	63	71	71	71	71	80	71	80	80	63	71	71	71	71	80	71	80	80	80	80		71	80	80	71	80	80
HD(*)	160	160	177	160	177	177	177	177	190	177	190	190	160	177	177	177	177	190	177	190	190	190	190		177	190	190	177	190	190
m1	80	80	90	80	90	90	90	90	100	90	100	100	80	90	90	90	90	100	90	100	100	100	100		90	100	100	90	100	100
n1	100	100	112	100	112	112	112	112	125	112	125	125	100	112	112	112	112	125	112	125	125	125	125		112	125	125	112	125	125
r1	123	123	123	123	123	123	123	123	133	123	133	133	123	123	123	123	123	133	123	133	133	133	133		205	215	215	205	215	215
r	163	163	168	163	168	168	168	168	183	168	183	183	163	168	168	168	168	183	168	183	183	183	183		250	265	265	250	265	265
rb	135	135	135	135	135	135	135	135	145	135	145	145	135	135	135	135	135	145	135	145	145	145	145		216	282	282	216	282	282
s	7	7	7	7	7	7	7	7	10	7	10	10	7	7	7	7	7	10	7	10	10	10	10		7	10	10	7	10	10
B2			248		248	248	248	248	248	248	248	248		248	248	248	248	248	248	248	248	248	248		248	248	248	248	248	248
B3			308		308	308	308	308	308	308	308	308		308	308	308	308	308	308	308	308	308	308		308	308	308	308	308	308
L1			245		245	245	245	245	245	245	245	245		245	245	245	245	245	245	245	245	245	245		245	245	245	245	245	245
L3			185		185	185	185	185	185	185	185	185		185	185	185	185	185	185	185	185	185	185		185	185	185	185	185	185
h3			40		40	40	40	40	40	40	40	40		40	40	40	40	40	40	40	40	40	40		40	40	40	40	40	40
s2			14		14	14	14	14	14	14	14	14		14	14	14	14	14	14	14	14	14	14		14	14	14	14	14	14

TMA serie





CÔNG TY TNHH ĐẦU TƯ THƯƠNG MẠI VÀ XÂY DỰNG NASA

VPGD Phía Bắc: Số 31/156 Đường Tam Trinh - Hoàng Mai - Hà Nội
VPGD Phía Nam: Số 480, Đường 51, P. Phú Tân, TP. Mới, Tỉnh Bình Dương
Email: Nasa386@gmail.com
Website: www.Nasa.com.vn
ĐT: 0902593368 / 0765834444