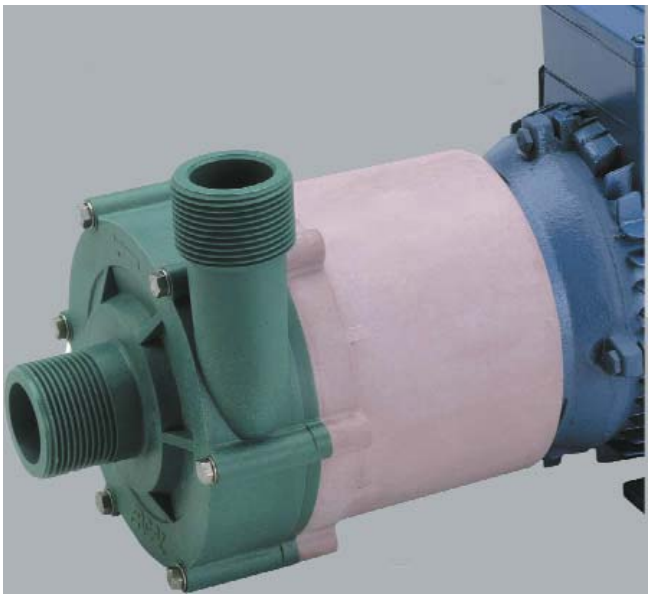
CLARK SOLUTIONS
AM Series Magnetic Drive Chemical Pumps
Flow Rates to 55 GPM, Pressures to 22 PSI

DESCRIPTION

The AM series pumps are centrifugal, horizontal axis, close-coupled type. The bodies are entirely built with reinforced thermoplastic polymers. Materials for the internal components include ceramic oxides, HD carbon and fluorinated elastomers. Any fluid contact with metallic pump parts is avoided.

These pumps are an excellent choice for small scale chemical pumping applications.



FEATURES

"Hermetic" Pump

A drive magnet assembly (item 7 of cut away dwg.) is driven by the motor shaft. This magnetic field acts on the magnet that is molded into the impeller assembly (item 4). The rear casing (item 2) isolates the drive mechanism from the impeller assembly and the fluid media.

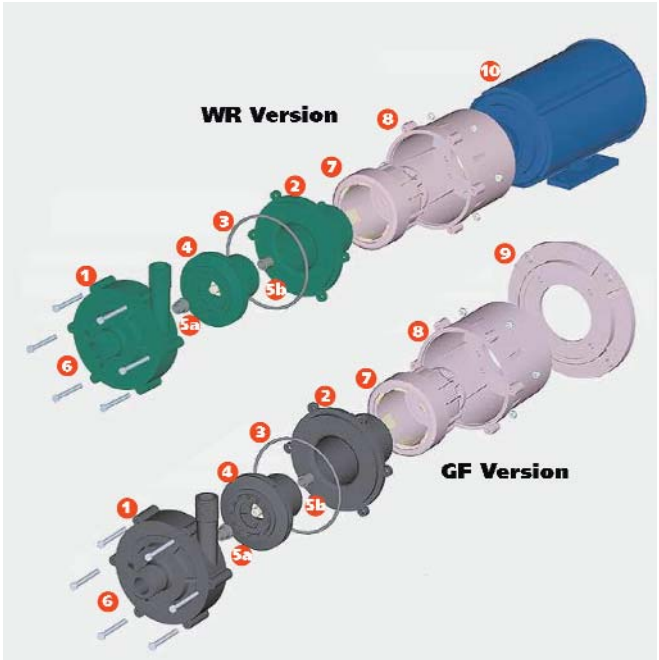
Safety & Life

The magnetic drive system, which excludes any type of rotating seal, extends pump life. The only seal required is a static o-ring gasket between the volute casing and rear casing. The "R" version of the pump (see tables 2&3) has materials that tolerate dry running for 15 minutes to hours (depending on operating conditions and materials selected).

Versatility & Performance

Two housing materials, style WR, glass fiber reinforced (30%) Polypropylene, and style GF, Ethylene-ChloroTrifluoroEthylene carbon fiber filled (20%) are offered along with a choice of internal materials. Depending on material choice, the pumps handle applications from clean water to waste and slightly abrasive liquids, strong alkali or salts such as sodium hypochlorite, and acids such as chromix, nitric, sulphuric, etc.(see compatibility chart).The mechanical properties of the reinforced housing materials allow the use of the pumps with fluids containing solids with medium grade of abrasion. For example a pump supplied with "X" internal materials (see table) can handle solids up to an index hardness of Mohs 4, a maximum quantity in weight of 5%, and a maximum size of 0.25 mm.

A selection of impellers accomodates a range of liquid specific gravities.



1) Volute Casing	6) SS Screws
2) Rear Casing	7) Drive Magnet Assembly
3) O-Ring Gasket	8) Support
4) Centrifugal Impeller	9) Flange for NEMA Motor
5) a/b Guide Bushings	10) Electrical Motor

MATERIALS

Media Compatibility				
Medium	**WR**	**GF**	**V**	**K**
Cold mineral acids	++	++	+	+
Hot mineral acids	0	++	-	+
Cold oxidizing acids	-	++	+	+
Hot oxidizing acids	-	++	0/-	+
Cold inorganic salts	++	++	+	+
Hot inorganic salts	+	++	+	+
Cold inorganic bases	++	++	- (*)	+
Hot inorganic bases	++	++	- (*)	+
Cold alogens	-	+	+	+
Hot alogens	-	+	-	+
Cold aliphatic solvents	+	+	+	+
Hot aliphatic solvents	-	0	0/-	+
Cold aromatic solvents	-	+	0/-	+
Hot aromatic solvents	-	0	-	+
Cold functional aromatic solvents	-	+	-	+
Hot functional aromatic solvents	-	0	-	+
Cold chloinated solvents	-	+	-	+
Hot chlorinated solvents	-	0	-	+
Cold alchohols	++	++	- (*)	+
Hot alchohols	+	+	- (*)	+
Cold ethers	-	+	-	+
Hot ethers	-	+	-	+
Cold ketones	+	+		+
Hot Ketones	0	0	- (*)	+
Cold amines	+	+	- (*)	+
Cold polymer solvents	++	0	+	+

++= Excellent + =Good 0=Moderate -=Not Resistant
(*)=Use EPDM

Abbreviation Ledger

GFR/PP(**WR**)- Glass reinforced polypropylene
CFF/E-CTFE(**GF**)- EthylenchloroTrifluoroEthylene carbon filled(20%)
Carb. H.D.- High density carbon
SiC- Silicon Carbide
CER- Alumina ceramic at 99.7%- hi purity
FKM(**V**)- Fluorinated elastomer
FFKM(**K**)- Perfluor elastomer
EPDM- EthylenePropylene rubber
NPT m- Male NPT
NPT f- Female NPT
ND- Nominal diameter
ANSI- Ref. flange ANSI B 16.5- flat face

Table 1- Case Materials

Version	Reinforced Polymers	Process Min Temp.	Process Max. Temp	Ambient temp.
WR	GFR-PP	-5ºC (23ºF)	80ºC (176ºF)	0-40ºC (32...104ºF)
GF	CFF-E-CTFE	-30ºC (-22ºF)	110ºC (230ºF)	-20...40ºC (-4...104ºF)

Table 2- Materials Model AM45

Pump Model	AM-45-WR	AM-45-GF
Pump Version	**R**	**R**
Volute Casing	GFR-PP	CFF-E-CTFE
Rear Casing		
Centrifugal Impeller		
Guide Bushing	Carb. HD	Carb. HD
Shaft	CER	CER
Thrust Bushing	CER	CER
O Ring Gasket	FKM (1)	FKM (1); (2)
Screws	304 SS	304 SS

Table 3- Materials Models AM250P, 350P, 500P

Pump Model	AM-XXXP-WR		AM-XXX-GF	
Pump Version	**R**	**X1**	**R**	**X2**
Volute Casing	GFR-PP		CFF-E-CTFE	
Rear Casing				
Centrifugal Impeller				
Guide Bushing	Carb. HD	SiC	Carb. HD	SiC
Shaft	CER	CER	SiC	SiC
Thrust Bushing	CER	CER	SiC	SiC
O Ring Gasket	FKM (1)		FKM (1); (2)	
Screws	304 SS		304 SS	

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

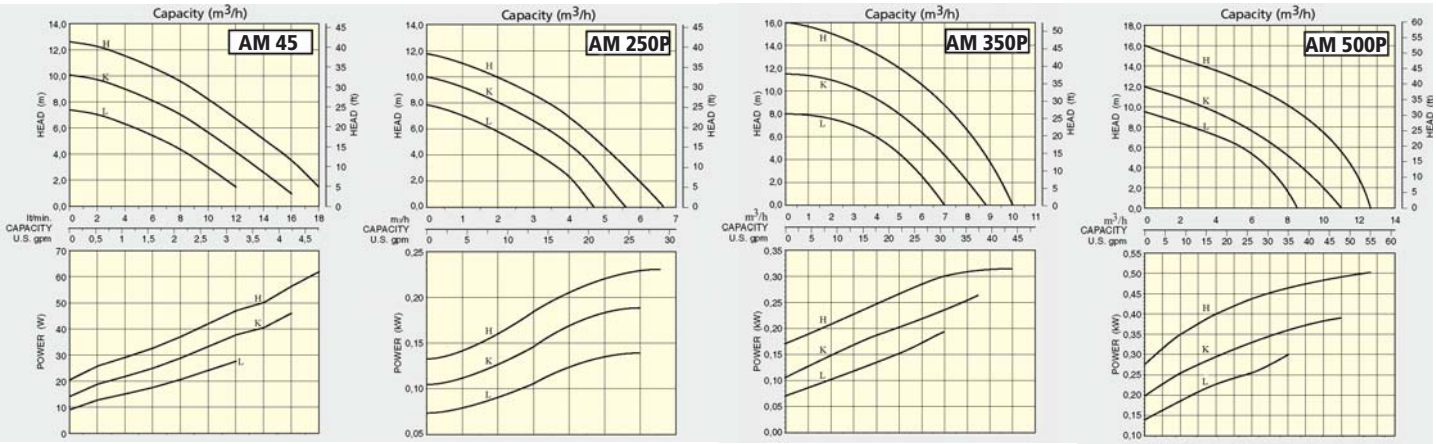
FLOW DATA

Table 4- Impeller Selection

Liquid Specific Gravity Limits At Max Flow	
Impeller	**Specific Gravity Limit (kg/dm³)**
H	1.1
K	1.4
L	1.9

Actual RPM at max. capacity				
Pump Model	**45**	**250P**	**350P**	**500P**
RPM	3400	3200	3200	3300

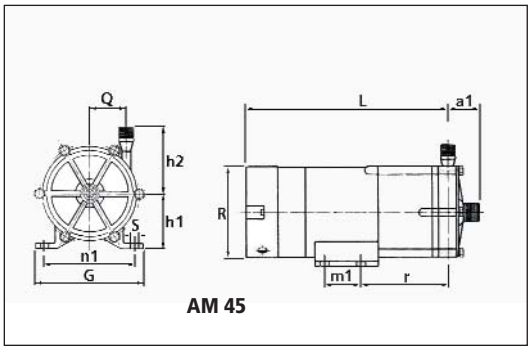
Flow Curves are for water at 20ºC



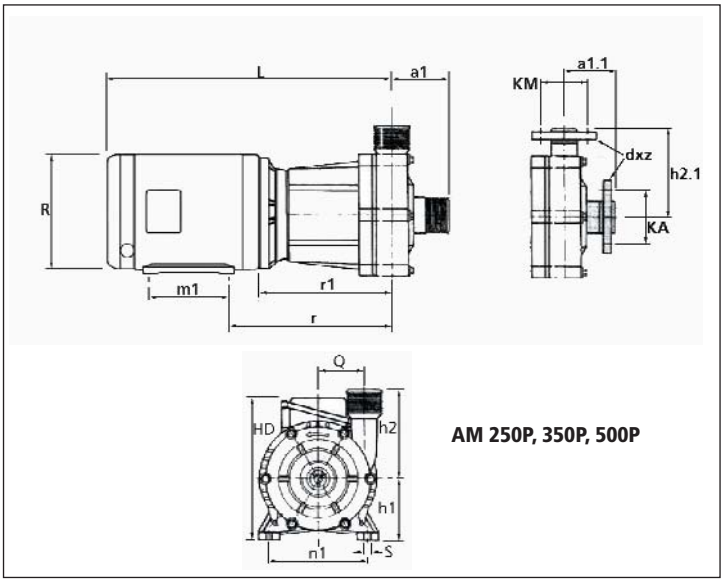
SPECIFICATIONS

Pump Model	AM45	AM250P	AM350P	AM500P
Inlet	1/2" NPT m	3/4" NPT f	1" NPT m	1 1/4" NPT m
Outlet	3/8" NPT m	3/4" NPT m	1" NPT m	1" NPT m
ANSI Flanges	N/A	N/A	1"	1"
Power	45W	1/3 HP	1/2 HP	3/4 HP
Type	single-phase	three-phase	three-phase	three-phase
Voltage	208-230	208/230-460		
Motor Size	Special	NEMA 56C		
Max Inlet Pressure	22 PSI			
Medium Viscosity	<20 cSt			
Weight	8.8 lb	28.5 lb	31 lb	37.5 lb

DIMENSIONS(INCHES)



AM 45



AM 250P, 350P, 500P

Model	AM45 (mm)	AM45 (inches)
a1	34	1 11/32
L	225	
G	120	4 3/4
Q	40	1 9/16
h1	60	2 3/8
h2	75	2 31/32
S	Ø 9.5	Ø 3/8
r	90	3 9/16
R	Ø 102.3	Ø 4
m1	40	1 9/16
n1	100	3 15/16

Dimensions in inches			
Model	**250P**	**350P**	**500P**
a1	2 7/16	2 7/16	2 7/16
a1.1	2 7/16	2 7/16	2 7/16
L	12 1/4	12 1/4	12 1/4
HD	6 1/2	6 1/2	6 1/2
Q	1 27/32	1 15/16	2 3/32
h1	3 1/2	3 1/2	3 1/2
h2	3 15/16	3 15/16	3 15/16
h2.1	3 15/16	3 15/16	3 15/16
S	11/32	11/32	11/32
r	8 3/16	8 3/16	8 3/16
r1	5 5/8	5 5/8	5 5/8
R	5 3/4	5 3/4	5 3/4
m1	3	3	3
n1	4 7/8	4 7/8	4 7/8
KM	2 3/4	3 1/8	3 1/2
KA	2 3/4	3 1/8	3 1/2
dxz	5/8 x 4	5/8 x 4	5/8 x 4
Flanges are per ANSI B 16.5- Flat Face			

ORDERING INFORMATION

AM-A-B-C-D-E-F-G-H-I

EXAMPLE: AM-250P-GF-H-V-R-N-U-N-3

A= Model	B= Pump Body (Table 2)	C=Impeller (Table 4)	D=O-Ring Gasket	E=Materials Tables 2&3	F=Connections	G=Motor	H=Motor Detail	I=Motor Phases
45	WR	H	V=FPM	R	N=NPT	U=NEMA	N=Standard Drip Proof	1=Single Phase
250P	GF	K	E=EPDM	X	A=ANSI	E=IEC	T=TEFC	3=Three Phase
350P		L	K=FFKM		Flange		S=Special Voltage	
500P							E=Ex-Proof	
							0=Without Motor	