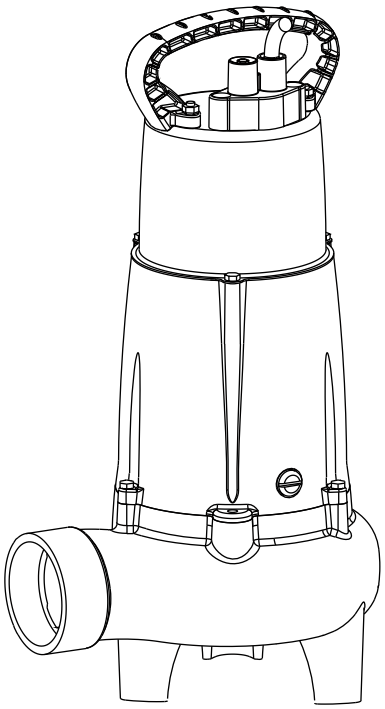
We know how water works

ABS light wastewater pump MF
ABS Piranha submersible grinder pump

1010-00



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GB

Installation and Operating Instructions

www.absgroup.com

ABS light water pump MF

054	334	604
154	354	804
254	404	565
324	504	665

ABS Piranha submersible grinder pump

08
09

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ABS reserves the right to alter specifications due to technical developments

1 General

1.1 Application areas

ATTENTION ***The maximum allowable temperature of the medium pumped is 40°C***

The submersible waste-water pumps of the MF/Piranha series are reliable quality products designed for the following applications:

- Pumping of clear water
- For blockage-free pumping of liquids which have a high proportion of solid or fibrous matter present.

These pumps may not be used for the pumping of flammable or explosive fluids.

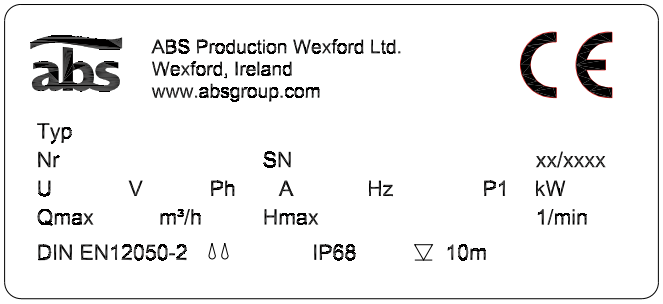
ATTENTION ***Before using aggressive fluids check that the materials used in the pump are resistant to the particular fluid being pumped.***

1.2 Technical Data

Maximum noise level ≤ 70 dB. This may be exceeded in certain circumstances

1.2.1 Nameplate

We recommend that you record the data from the original nameplate on the nameplate illustration below and maintain it, together with your purchase receipt, as a proof for subsequent use.
Always state the pump type, item no. and serial no. in the field “Nr” in all Communications



Legend

Typ	Pump type	
Nr./SN	Item No./Serial No.	
xx/xxxx	Production date (Week/Year)	
UN	Rated Voltage	V
IN	Rated Current	A
	Frequency	Hz
P1N	Rated Input Power	kW
n	Speed	min-1
Qmax	Max. Flow	m3/h
Hmax	Max. Head	m
♦♦	Water pressure tight	
IP 68	Protection type	
▽	Max submersible depth	m

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Figure 1 Nameplate Standard Version

2 Safety

The general and specific health and safety hints are described in detail in the separate booklet Safety Hints. If anything is not clear or you have any questions as to safety make certain to contact the manufacturer ABS.

3 Transport

During transport the unit should not be dropped or thrown.

The unit should never be raised or lowered by the Power cable.

The unit is fitted with a lifting device to which a chain and shackle may be attached for transport purposes.

Any hoist used must be adequately dimensioned for the weight of the unit.

All relevant safety regulators as well as general good technical practice must be complied with.

4 Set up and Installation

ATTENTION ***All relevant regulations covering sewage pumping installations and, where applicable, explosion-proof installations must be complied with.***

The cable duct to the control panel should be made gas-tight by filling with foam after the power supply and control circuit cables have been laid.

Particular attention must be paid to the safety regulations covering work in closed areas in sewage plants as well as good general technical practices .

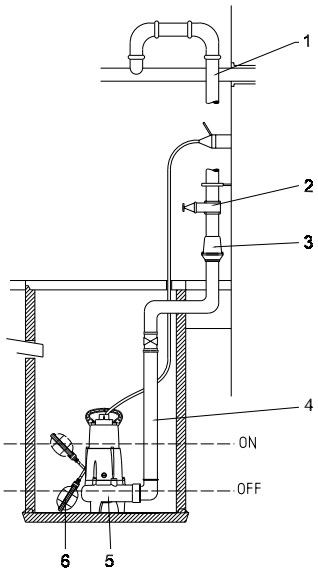
4.1 Discharge Line

The discharge line must be installed in compliance with the relevant regulations.
DIN 1986/100 and EN 12056 applies in particular to the following:

- The discharge line should be fitted with a backwash loop (180° bend) located above the backwash level and should then flow by gravity into the collection line or sewer.
- The discharge line should not be connected to a down pipe.
- No other inflows or discharge lines should be connected to this discharge line.

ATTENTION ***The discharge line should be installed so that it is not affected by frost.***

4.2 Installation example, concrete sump



Legend

1	Back-wash loop
2	Shut-off valve
3	Non-return valve
4	Discharge line
5	Submersible pump
6	Float switch KS

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Figure 2 Installation example, concrete sump

NOTE ***Regulations for connecting to the sewer lines vary from country to country. Consult your local codes.***

4.3 Electrical Connection

Before commissioning an expert should check that one of the necessary electrical protective devices is available. Earthing, neutral, earth leakage circuit breakers, etc. must comply with the regulations of the local electricity supply authority and a qualified person should check that these are in perfect order.

ATTENTION ***The power supply system on site must comply with VDE or other local regulations with regard to cross-sectional area and maximum voltage drop. The voltage stated on the nameplate of the pump must correspond to that of the mains***

The power supply cable must be protected by an adequately dimensioned slow-blow fuse corresponding to the rated power of the pump.

The incoming power supply as well as the connection of the pump itself to the terminals on the control panel must comply with the circuit diagram of the control panel as well as the motor connection diagrams and must be carried out by a qualified person.

All relevant safety regulators as well as general good technical practice must be complied with.

ATTENTION ***For use in the open air, the following VDE regulations apply:***

Submersible pumps used outdoors must be fitted with a power cable of at least 10m length. Other regulations may apply in different countries.
Pumps for use in swimming pools, garden ponds and similar, must comply with European Standard 60335, Part 2, protection class I.

NOTE ***Please consult your electrician.***

4.3.1 Wiring Diagrams

Three Phase

50 Hz:

MF 334D and D/KS
MF 404D and D/KS
MF 604D and D/KS
MF 665D and D/KS
MF 804D and D/KS
Piranha 08/09D and D/KS

Single Phase

50 Hz:

MF 054W and W/KS
MF 154/254W and W/KS
MF 324W and W/KS
MF 354W and W/KS
MF 504W and W/KS
MF 565W and W/KS
Piranha 08/09W and W/KS

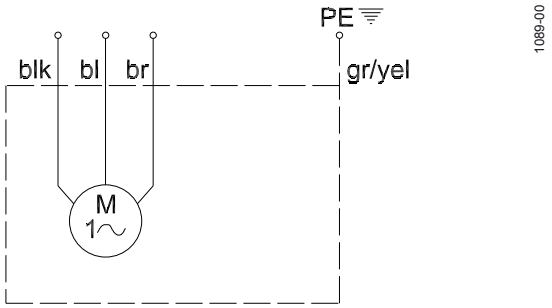


Figure 3 Three Phase Wiring

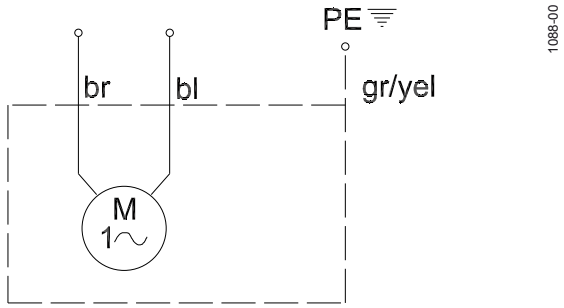


Figure 4 Single Phase Wiring

NOTE:

U1,V1,W1,U	=	Live	bl	=	blue
PE	=	Earth	br	=	brown
gr/yel	=	green/yellow	N	=	Neutral (common)
blk	=	black			

4.3.2 Checking direction of rotation

The safety hints in the previous sections must be observed!

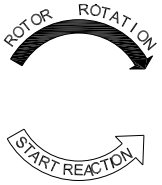
When three phase units are being commissioned for the first time and also when used on a new site, the direction of rotation must be carefully checked by a qualified person.

When checking the direction of rotation, the submersible pump should be secured in such a manner that no danger to personnel is caused by the rotating impeller, or by the resulting air flow. Do not place your hand into the hydraulic system!

The direction of rotation should only be altered by a qualified person.

When carrying out the direction of rotation check as well as when starting the unit pay attention to the **START REACTION**. This can be very powerful

ATTENTION
The direction of rotation is correct if the imeller/propeller rotates in a clockwise manner when viewing down from the top of the placed unit



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ATTENTION
The start reaction is anti clockwise

Figure 5 Rotor rotation

NOTE ***If a number of pumps are connected to a single control panel then each unit must be individually checked.***

ATTENTION ***The mains supply to the control panel should have a clockwise rotation. If the leads are connected in accordance with the circuit diagram and lead designations, the direction of rotation will be correct..***

4.3.3 Changing direction of rotation

The safety hints in the previous sections must be observed!

The direction of rotation should only be altered by a qualified person.

If the direction of rotation is incorrect then this is altered by changing over two phases of the power supply cable in the control panel. The direction of rotation should then be rechecked

NOTE ***The direction of rotation measuring device monitors the direction of rotation of the mains supply or that of an emergency generator***

5 Commissioning

The safety hints in the previous sections must be observed!

Before commissioning the unit should be checked and a functional test carried out. Particular attention should be paid to the following:

- Have the electrical connections been carried out in accordance with regulations?
- Is the motor overload switch correctly set?
- Was the sump cleaned out?

- Have the inflow and outflows of the pump station been cleaned and checked?
- Is the direction of rotation correct - even if run via an emergency generator?
- Are the level controls functioning correctly?
- Are the required gates valves (where fitted) open?
- Do the non-return valves (where fitted) function easily?
- Does the pump sit correctly on the pedestal?
- Are the switching On and switching Off levels set correctly?

6 Maintenance

Before commencing any maintenance work the pump should be completely disconnected from the mains by a qualified person and care should be taken that it cannot be inadvertently switched back on.

When carrying out any repair or maintenance work, the safety regulations covering work in enclosed areas of sewage installations as well as good general technical pratices should be followed.

NOTE ***The maintenance hints given here are not designed for "do-it-yourself" repairs as special technical knowledge is required.***

NOTE ***A maintenance contract with our works service department will guarantee you the best technical service under all circumstances.***

6.1 General maintenance hints

ABS submersible pumps are reliable quality products each being subjected to careful final inspection. Lubricated-for-life ball bearings together with monitoring devices ensure optimum pump reliability provided that the pump has been connected and operated in accordance with the operating instructions.

Should, nevertheless, a malfunction occur, do not improvise but ask your ABS customer service department for assistance.

This applies particularly if the pump is continually switched off by the current overload in the control panel or by the alarm.

Regular inspection and care is recommended to ensure a long service life.

NOTE **The ABS service organisation would be pleased to advise you on any applications you may have and to assist you in solving your pumping problems.**

NOTE ***The ABS warranty conditions are only valid provided that any repair work has been carried out in ABS approved workshop and where original ABS spare parts have been used.***

6.2 Piranha Shredding system

The shredding system of the Piranha is a wearing part, and as such may need to be replaced. A reduction in cutting performance can reduce the output. We recommend that the shredding be inspected regularly. This is particularly so if sewage containing sand is being pumped.Regular inspection and care is recommended to ensure a long service life.

ATTENTION ***Before starting the pump ensure that the shredding rotor can rotate freely***

6.3 Commentary on maintenance of Lifting Stations in accordance with EN 12056.

It is recommended that the lifting station be inspected monthly and its function checked.
In accordance with EN regulations, the lifting station should be maintained by a qualified person at the following intervals:

- in commercial premises - every three months.
- in apartment blocks - every six months.
- in a single family home - once a year.

In addition we recommend that a maintenance contract be taken out with a qualified company.

6.4 Oil filling and Oil changing

The oil chamber between the motor and the hydraulic section has been filled at the works with lubricating oil.

Oil Fill Quantity Motor			
Pump Type	Litres	Pump Type	Litres
MF 334D and D/KS	N/A	MF 054W and W/KS	N/A
MF 404D and D/KS	0.5	MF 154W and W/KS	N/A
MF 604D and D/KS	0.5	MF 254W and W/KS	N/A
MF 665D and D/KS	0.5	MF 324W and W/KS	N/A
MF 804D and D/KS	0.5	MF 354W and W/KS	0.5
Piranha 08/09D and D/KS	0.5	MF 504W and W/KS	0.5
		MF 565W and W/KS	0.5
		Piranha 08/09W and W/KS	0.5

Oil Fill Oil Chamber			
Pump Type	Litres	Pump Type	Litres
MF 334D and D/KS	0.02	MF 054W and W/KS	0.02
MF 404D and D/KS	0.02	MF 154W and W/KS	0.02
MF 604D and D/KS	0.02	MF 254W and W/KS	0.02
MF 665D and D/KS	0.02	MF 324W and W/KS	0.02
MF 804D and D/KS	0.02	MF 354W and W/KS	0.02
Piranha 08/09D and D/KS	0.02	MF 504W and W/KS	0.02
		MF 565W and W/KS	0.02
		Piranha 08/09W and W/KS	0.02

An oil change is only necessary if a fault occurs.

6.5 Cleaning

If the pump is used for transportable applications then it should be cleaned after each usage by pumping clear water in order to avoid deposits of dirt and encrustation. In the case of fixed installation, we recommend that the functioning of the automatic level control system be checked regularly. By switching the selection switch (switch setting “HAND”) the sump will be emptied. If deposits of dirt are visible on the floats then these should be cleaned. After cleaning, the pump should be rinsed out with clear water and a number of automatic pumping cycles carried out.

Declaration of conformity

As defined by: Machinery Directive 98/37/EC, EMC-Directive 89/336/EC, Low Voltage Directive 73/23EC, Construction Directive 89/106/EC

GB:	**Declaration of conformity**	**NL:**	**Overeenkomstigheidsverklaring**	**HU:**	**Megfelelõségi nyilatkozat**
DE:	**Konformitätserklärung**	**SE:**	**Försäkran om överensstämmelse**	**GR:**	**Δήλωση εναρμόνισης**
FR:	**Déclaration de Conformité**	**NO:**	**Samsvarserklæring**	**ET:**	**Vastavusdeklaratsioon**
ES:	**Declaración de Confirmidad**	**DK:**	**Overensstemmelseserklæring**	**CZ:**	**Prohlášení o shodšì**
PT:	**Declaracão de conformidade**	**FI:**	**Vaatimustenmukaisuusvakuutus**	**SI:**	**Izjava o skladnosti**
IT:	**Dichiarazione di conformità**	**PL:**	**Deklaracja zgodnosci**	**SK:**	**Vyhlásenie o zhode**

ABS Production Wexford Ltd, Clonard Road, Wexford, IRELAND

GB: Declare under our sole responsibility that the products
DE: Erklärt eigenverantwortlich, daß die Produkte
FR: Déclarons sous notre seule responsabilité que les produits
ES: Declaramos bajo nuestra exclusiva responsabilidad que los productos
PT: Declaramos sob nossa única responsabilidade que os produtos
IT: Dichiariamo sotto la nostra esclusiva responsabilità che i prodotti
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DK: Erklærer på eget ansvar, at følgende produkter
FI: Vakuutamme yksinomaan omalla vastuullamme, että seuraavat tuotteet
PL: Deklaruje z pelna odpowiedzialnoscia, ze urzadzenia typu
HU: Felelösségünk teljes tudatában kijelentjük, hogy a termékek
GR: Dhlönoyme me apokleistikq maw eyuýnh óti ta proïónta
ET: Deklareerime ainuvastutajana, et tooted
CZ: Prohlašuje na vlastní odpovìdnost, že výrobky
SI: Izjavljamo, da so z našo izkljuèno odgovornostjo izdelki
SK: Vyhlasujeme na našu zodpovednost', že výrobky

Products:
ABS light wastewater pump MF 054 - 804
ABS submersible grinder pump Piranha 08/09

GB: To which this declaration relates are in conformity with the following standards or other normative documents

DE: Auf die sich diese Erklärung bezieht, den folgenden und/oder anderen normativen Dokumenten entsprechen

FR: Auxquels se réfère cette déclaration sont conformes aux normes ou à d'autres documents normatifs

ES: Objeto de esta declaración, están conformes con las siguientes normas u otros documentos normativos

PT: Aque se refere esta declaracáo está em conformidade com as Normas our outros documentos normativos

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NL: Waarop deze verklaring betrekking heeft, in overeenstemming zijn met de volgende normen of andere normatieve documenten

SE: Som omfattas av denna försäkran är i överensstämmelse med följande standarder eller andra regelgivande dokument

NO: Som dekkes av denne erklæringen, er i samsvar med følgende standarder eller andre normative dokumenter

DK: Som er omfattet af denne erklæring, er i overensstemmelse med følgende standarder eller andre normative dokumenter

FI: Joihin tämä vakuutus liitty, ovat seuraavien standardien sekä muiden sääntöämääräävien asiakirjojen mukaisia

PL: Do których odnosi sie niniejsza deklaracja sa zgodne z nastepujacymi normami lub innymi dokumentami normatywnymi.

HU: Amelyekre ez a nyilatkozat vonatkozik, megfelelnek a következõszabványokban és egyéb szabályozó dokumentumokban leírtaknak.

GR: Τα οποία αφορά η παρούσα δήλωση είναι σύμφωνα με τα ακόλουθα και/ή άλλα πρότυπα κανονιστικά έγγραφα

ET: Mida käespöev deklaratsioon puudutab, on vastavuses järgmiste standardite ja muude normatiivdokumentidega.

CZ: Na které se toto prohlášeni vztahuje, jsou v souladu s následujícími normami nebo jinými normativními dokumenty.

SI: Na katere se ta izjava nanaša, skladni z naslednjimi standardi ali drugimi normativnimi dokumenti.

SK: Na ktoré sa vz ahuje toto vyhlásenie, zodpovedajú nasledujúcim štandardom a iným záväzným dokumentom.

DIN EN 12050-2, EN 60335, EN 13463, EN ISO 12100-1 & EN ISO 12100-2

29-03-2006

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We know how water works

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