

# MC

## Submersible pumps **DOUBLE-CHANNEL**

 Sewage water

 Domestic use

 Civil use

 Industrial use

- ※ An innovative project by Pedrollo's Research and Development department, has resulted in the new **MC**, a complete range of extremely robust and reliable electric pumps.
- ※ Thanks to the enhanced oversizing of the oil-bath electric motor, shaft and bearings, the new **MC** electric pumps guarantee an unprecedented service life, with high hydraulic performance, low operating costs and easy maintenance. The oil-bath motor also allows continuous operation of the electric pump, even if partially uncovered.
- ※ They are recommended in all installations for pumping waste water with suspended solid bodies up to 65 mm diameter.
- ※ The **MC** series is equipped with a double-channel impeller, ideal for the discharge of large volumes of waste water.



### PERFORMANCE RANGE

- Flow rate up to **1600 l/min** (96 m<sup>3</sup>/h)
- Head up to **25 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of solids:
  - up to **Ø 50 mm** for MC /50
  - up to **Ø 65 mm** for MC /65
- Minimum immersion depth for continuous service:
  - **320 mm** for MC /50
  - **360 mm** for MC /65

### CONSTRUCTION AND SAFETY STANDARDS

- **10 m** long power cable
- External float switch and control box for single-phase versions

### INSTALLATION AND USE

**MC** series pumps, made from heavy gauge robust cast iron, resistant to abrasion and long-lasting, are fitted with a **DOUBLE-CHANNEL** impeller and are capable of pumping liquids containing short fibred suspended solids. They are ideal for pumping **sewage, waste water, water mixed with mud, groundwater and surface water** in locations such as blocks of flats, public buildings, factories, multi-storey and underground car parks, washing areas, etc.

### PATENTS - TRADE MARKS - MODELS

- Patent n° IT0001428923

### OPTIONS AVAILABLE ON REQUEST

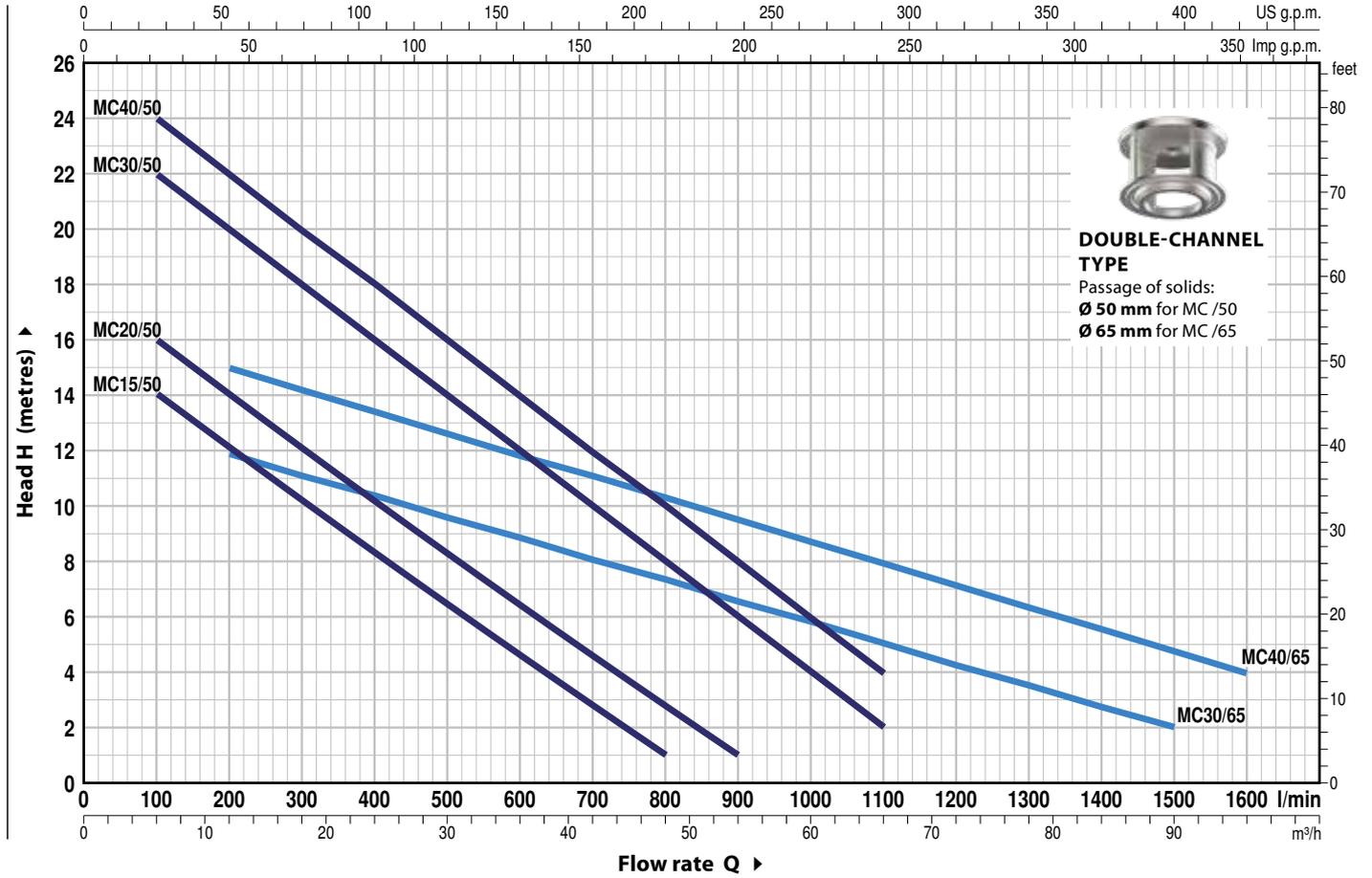
- **QES** control box for three-phase pumps
- Single-phase pumps without float switch
- Other voltages or 60 Hz frequency

### GUARANTEE

- ▣ **For the following versions, to validate the guarantee, the built-in thermal overload protector must be connected to the control box:**
  - three-phase
    - **MC 15-20-30-40/50**
    - **MC 30-40/65**

## CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz n= 2900 min<sup>-1</sup>



MODEL		POWER (P <sub>2</sub> )		Q	H metres																
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	6	12	18	24	30	36	42	48	54	60	66	72	90	96	
				l/min	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1500	1600		
MCm 15/50	MC 15/50	1.1	1.5	H metres	16	14	12.5	10.5	8.5	6.5	4.5	3	1								
MCm 20/50	MC 20/50	1.5	2		18	16	14	12.5	10.5	8.5	6.5	5	3	1							
MCm 30/50	MC 30/50	2.2	3		24	22	20	18	16	14	12	10	8	6	4	2					
-	MC 40/50	3	4		25	24	22	20	18	16	14	12	10	8	6	4					
MCm 30/65	MC 30/65	2.2	3		13	-	12	11	10.5	9.7	9	8	7.5	6.5	6	5	4.5	2			
-	MC 40/65	3	4		17	-	15	14	13.5	12.5	12	11	10.5	9.5	8.5	8	7	4.8	4		

Q = Flow rate H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

**POS. COMPONENT CONSTRUCTION CHARACTERISTICS**

<b>1 PUMP BODY</b>	Cast iron with an Epoxy Electro Coating treatment, with threaded ports in compliance with ISO 228/1
<b>2 IMPELLER</b>	Precision cast stainless steel AISI 304 DOUBLE-CHANNEL type
<b>3 MOTOR CASING</b>	Cast iron with an Epoxy Electro Coating treatment
<b>4 MOTOR CASING PLATE</b>	Cast iron with an Epoxy Electro Coating treatment
<b>5 MOTOR SHAFT</b>	Stainless steel AISI 431

**6 TWO MECHANICAL SEALS SEPARATED BY AN OIL CHAMBER**

Seal Model	Shaft Diameter	Position	Materials		
			Stationary ring	Rotational ring	Elastomer
STA-22	Ø 22 mm	Motor side	Ceramic	Graphite	NBR
STA-20	Ø 20 mm	Pump side	Silicon carbide	Silicon carbide	NBR

**7 BEARINGS 6305 CM D 6 / 6204 ZZ - C3**

**8 ELECTRIC MOTOR**

**MCm 15-20-30:** single-phase 230 V - 50 Hz with thermal overload protector incorporated into the winding

**MC:** three-phase 400 V - 50 Hz. with thermal overload protector incorporated into the winding to be connected to the control box (supplied on demand)

- Insulation: class F
- Protection: IP X8

**9 POWER CABLE**

**10 metres** long "H07 RN-F" cable

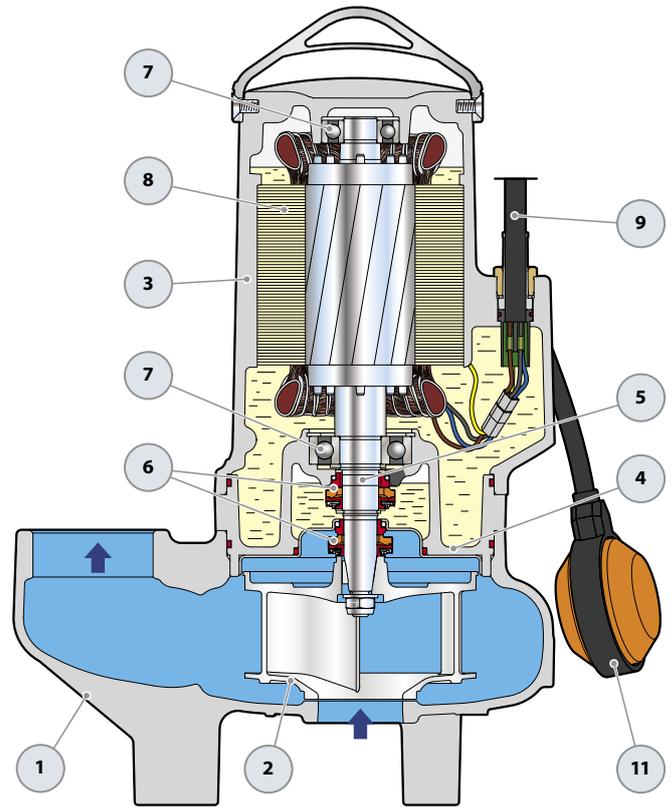
**10 CONTROL BOX for MCm 15-20-30**

(only for single-phase versions)

Complete with capacitor and manual reset motor protector

**11 FLOAT SWITCH**

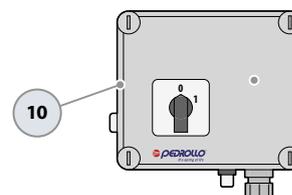
(only for single-phase versions)



**OPTIONAL – Supporting Base**

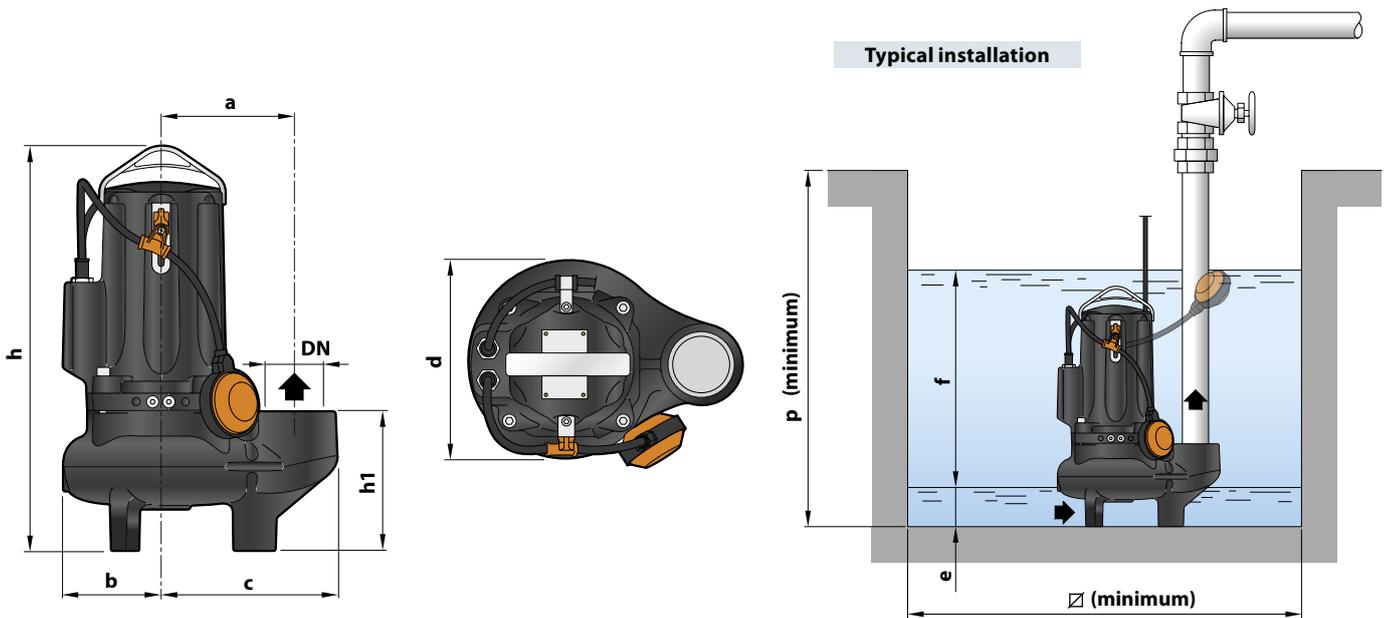


**Standard Equipment**



**Control Box**  
(only for single-phase versions)

## DIMENSIONS AND WEIGHT



MODEL		PORT DN	Passage of solids mm	DIMENSIONS mm										kg	
Single-phase	Three-phase			a	b	c	h	h1	d	e	f	p	Ø	1~	3~
MCm 15/50	MC 15/50	2½"	Ø 50	162	119	212	487	167	242	75	variable	800	800	42.0	40.5
MCm 20/50	MC 20/50						43.0							42.0	
MCm 30/50	MC 30/50						513   487							48.0	43.0
-	MC 40/50						513							-	48.0
MCm 30/65	MC 30/65	3"	Ø 65	180	120	240	547   521	201	246	85	variable	800	800	50.0	45.0
-	MC 40/65						547							-	50.0

## ABSORPTION AND CAPACITORS

MODEL	VOLTAGE	
	Single-phase	230 V
MCm 15/50	10.5 A	10.1 A
MCm 20/50	14.0 A	13.4 A
MCm 30/50	18.0 A	17.3 A
MCm 30/65	14.0 A	13.4 A

MODEL	VOLTAGE		
	Three-phase	230-240 V	400-415 V
MC 15/50	7.8 A	4.5 A	2.8 A
MC 20/50	8.7 A	5.0 A	3.3 A
MC 30/50	10.4 A	6.0 A	4.3 A
MC 40/50	11.2 A	6.5 A	4.8 A
MC 30/65	9.5 A	5.5 A	3.8 A
MC 40/65	13.0 A	7.5 A	5.8 A

MODEL	CAPACITANCE CAPACITORS
	Single-phase
MCm 15/50	50 µF 450 VL
MCm 20/50	50 µF 450 VL
MCm 30/50 MCm 30/65	60 µF 450 VL

# MC-F

## Submersible pumps **DOUBLE-CHANNEL** with flanged ports

-  Sewage water
-  Domestic use
-  Civil use
-  Industrial use

- ※ An innovative project by Pedrollo's Research and Development department, has resulted in the new **MC-F**, a complete range of extremely robust and reliable electric pumps.
- ※ Thanks to the enhanced oversizing of the oil-bath electric motor, shaft and bearings, the new **MC-F** electric pumps guarantee an unprecedented service life, with high hydraulic performance, low operating costs and easy maintenance. The oil-bath motor also allows continuous operation of the electric pump, even if partially uncovered.
- ※ They are recommended in all installations for pumping waste water with suspended solid bodies up to 65 mm diameter.
- ※ The **MC-F** series is equipped with a double-channel impeller, ideal for the discharge of large volumes of waste water.



### PERFORMANCE RANGE

- Flow rate up to **1600 l/min** (96 m<sup>3</sup>/h)
- Head up to **25 m**

### APPLICATION LIMITS

- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40 °C**
- Passage of solids:
  - up to **Ø 50 mm** for MC /50-F
  - up to **Ø 65 mm** for MC /65-F
- Minimum immersion depth for continuous service:
  - **320 mm** for MC /50-F
  - **360 mm** for MC /65-F

### CONSTRUCTION AND SAFETY STANDARDS

- **10 m** long power cable
- External float switch and control box for single-phase versions

### INSTALLATION AND USE

**MC-F** series pumps, made from heavy gauge robust cast iron, resistant to abrasion and long-lasting, are fitted with a **DOUBLE-CHANNEL** impeller and are capable of pumping liquids containing short fibred suspended solids. They are ideal for pumping **sewage, waste water, water mixed with mud, groundwater and surface water** in locations such as blocks of flats, public buildings, factories, multi-storey and underground car parks, washing areas, etc.

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### OPTIONS AVAILABLE ON REQUEST

- **QES** control box for three-phase pumps
- Single-phase pumps without float switch
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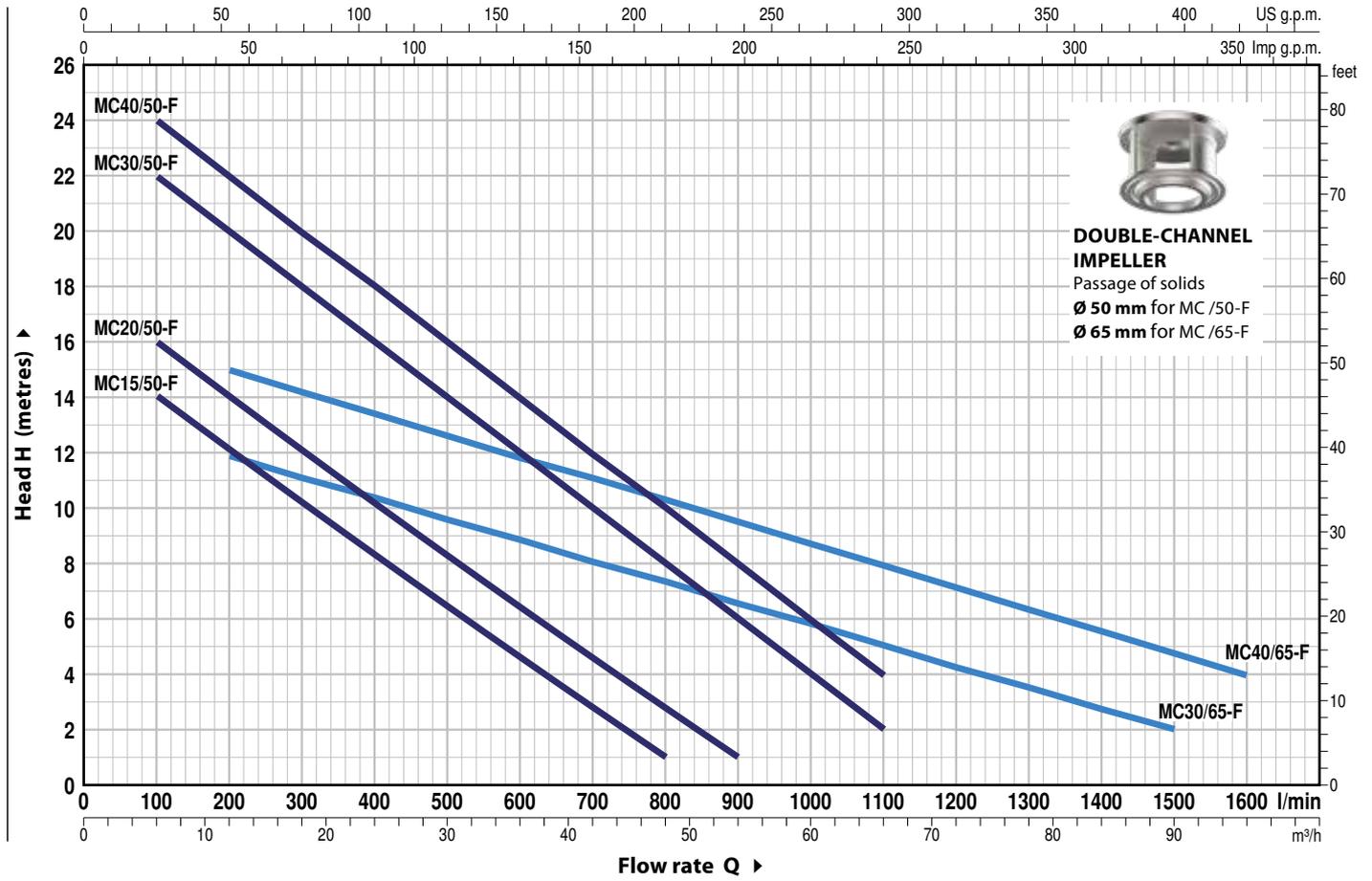
### GUARANTEE

⇒ **For the following versions, to validate the guarantee, the built-in thermal overload guarantee, the built-in thermal overload control box:**

- three-phase
  - **MC 15-20-30-40/50-F**
  - **MC 30-40/65-F**

**CHARACTERISTIC CURVES AND PERFORMANCE DATA**

**50 Hz n= 2900 min<sup>-1</sup>**



MODEL		POWER (P2)		Q	H metres															
Single-phase	Three-phase	kW	HP		m <sup>3</sup> /h	0	6	12	18	24	30	36	42	48	54	60	66	72	90	96
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MCm 20/50-F	MC 20/50-F	1.5	2		18	16	14	12.5	10.5	8.5	6.5	5	3	1						
MCm 30/50-F	MC 30/50-F	2.2	3		24	22	20	18	16	14	12	10	8	6	4	2				
-	MC 40/50-F	3	4		25	24	22	20	18	16	14	12	10	8	6	4				
MCm 30/65-F	MC 30/65-F	2.2	3		13	-	12	11	10.5	9.7	9	8	7.5	6.5	6	5	4.5	2		
-	MC 40/65-F	3	4		17	-	15	14	13.5	12.5	12	11	10.5	9.5	8.5	8	7	4.8	4	

Q = Flow rate H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

## POS. COMPONENT CONSTRUCTION CHARACTERISTICS

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5	<b>MOTOR SHAFT</b>	Stainless steel AISI 431

### 6 TWO MECHANICAL SEALS SEPARATED BY AN OIL CHAMBER

Seal Model	Shaft Diameter	Position	Materials		
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### 8 ELECTRIC MOTOR

**MCm 15-20-30-F:** single-phase 230 V - 50 Hz with thermal overload protector incorporated into the winding

**MC-F:** three-phase 400 V - 50 Hz. with thermal overload protector incorporated into the winding to be connected to the control box (supplied on demand)

- Insulation: class F
- Protection: IP X8

### 9 POWER CABLE

10 metres long "H07 RN-F" cable

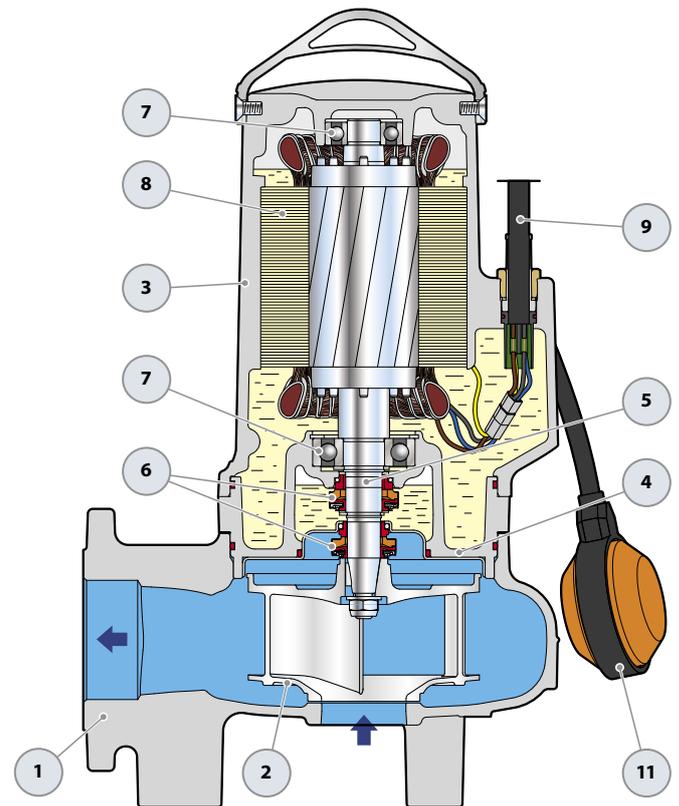
### 10 CONTROL BOX for MCm 15-20-30-F

(only for single-phase versions)

Complete with capacitor and manual reset motor protector

### 11 FLOAT SWITCH

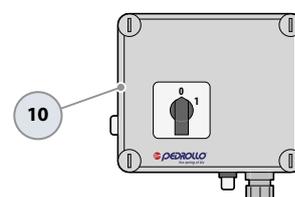
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### OPTIONAL – Supporting Base

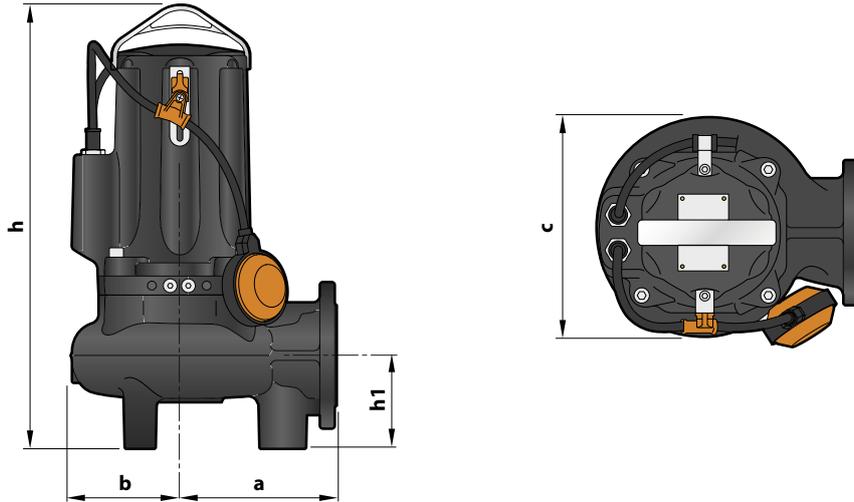


### Standard Equipment



Control Box  
(only for single-phase versions)

## DIMENSIONS AND WEIGHT



MODEL		Passage of solids mm	DIMENSIONS mm					kg	
Single-phase	Three-phase		a	b	c	h	h1	1~	3~
MCm 15/50-F	MC 15/50-F	Ø 50	170	119	242	487	102	43.5	42.0
MCm 20/50-F	MC 20/50-F					513   487		44.5	43.5
MCm 30/50-F	MC 30/50-F					513		49.5	44.5
-	MC 40/50-F					-		49.5	
MCm 30/65-F	MC 30/65-F	Ø 65	210	120	246	547   521	123	52.0	47.0
-	MC 40/65-F					547		-	52.0

## ABSORPTION AND CAPACITORS

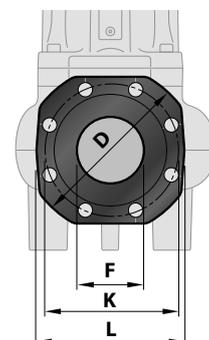
MODEL	VOLTAGE	
Single-phase	230 V	240 V
MCm 15/50-F	10.5 A	10.1 A
MCm 20/50-F	14.0 A	13.4 A
MCm 30/50-F	18.0 A	17.3 A
MCm 30/65-F	14.0 A	13.4 A

MODEL	VOLTAGE		
Three-phase	230-240 V	400-415 V	690-720 V
MC 15/50-F	7.8 A	4.5 A	2.8 A
MC 20/50-F	8.7 A	5.0 A	3.3 A
MC 30/50-F	10.4 A	6.0 A	4.3 A
MC 40/50-F	11.2 A	6.5 A	4.8 A
MC 30/65-F	9.5 A	5.5 A	3.8 A
MC 40/65-F	13.0 A	7.5 A	5.8 A

MODEL	CAPACITANCE CAPACITORS
Single-phase	(230 V or 240 V)
MCm 15/50-F	50 µF 450 VL
MCm 20/50-F	50 µF 450 VL
MCm 30/50-F	60 µF 450 VL
MCm 30/65-F	60 µF 450 VL

## PORT FLANGE

MODEL	FLANGE	F	K mm	D mm	L mm	HOLES	
						N°	Ø (mm)
MC /50-F	DN65 (PN10)	2½"	145	185	160	4	18
MC /65-F	DN80 (PN10)	3"	160	200	180	8	18



# SEWAGE LIFTING SYSTEM VXC-F – MC-F



## HORIZONTAL DELIVERY VERSION WITH ¾" GUIDE TUBES

For <b>VXC /50-F, MC /50-F</b>	Cod. ASSVXCF051	DN <b>2"</b>
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Kit consisting of:

1. footing connection
2. slide guide with screws and seals
3. support for the guide tubes



## VERTICAL DELIVERY VERSION WITH ¾" GUIDE TUBES

For <b>VXC /50-F, MC /50-F</b>	Cod. ASSVXCF051V	DN <b>2½"</b>
For <b>VXC /65-F, MC /65-F</b>	Cod. ASSVXCF071V	DN <b>3"</b>

Kit consisting of:

1. footing connection completo di controflangia
2. slide guide with screws and seals
3. support for the guide tubes



## VERTICAL DELIVERY VERSION WITH 2" GUIDE TUBES

For <b>VXC /50-F, MC /50-F</b>	Cod. ASSVXCF0704V	DN <b>3"</b>
For <b>VXC /65-F, MC /65-F</b>	Cod. ASSVXCF0705V	

Kit consisting of:

1. footing connection completo di controflangia
2. slide guide with screws and seals
3. support for the guide tubes

## ACCESSORIES CAN BE ORDERED

### SLIDE GUIDE (Also to be ordered separately)

For <b>VXC /50-F, MC /50-F</b> with guide tubes Ø ¾"	Cod. ASSFL0017
For <b>VXC /65-F, MC /65-F</b> with guide tubes Ø ¾"	Cod. ASSFL0018
For <b>VXC /50-F, MC /50-F</b> with guide tubes Ø 2"	Cod. ASSFL071
For <b>VXC /65-F, MC /65-F</b> with guide tubes Ø 2"	Cod. ASSFL072

Complete with screws and seals

### INTERMEDIATE SUPPORT (To be ordered separately)

For guide tubes Ø ¾"	Cod. 859SV340INTFA
For guide tubes Ø 2"	Cod. 859SV349INTFA

**In order to ensure stability, insert the intermediate support:**

- every 2 metres with ¾" guide tubes (compulsory)
- every 3 metres with 2" guide tubes (recommended)

### GUIDE TUBES (AISI 304 stainless steel)

Guide tube Ø ¾"	Cod. 54SARTG005
Guide tube Ø 2"	Cod. 54SARTG006

Maximum length of the tube plank: 6 metres

### INTERMEDIATE SUPPORT

For guide tubes Ø ¾"

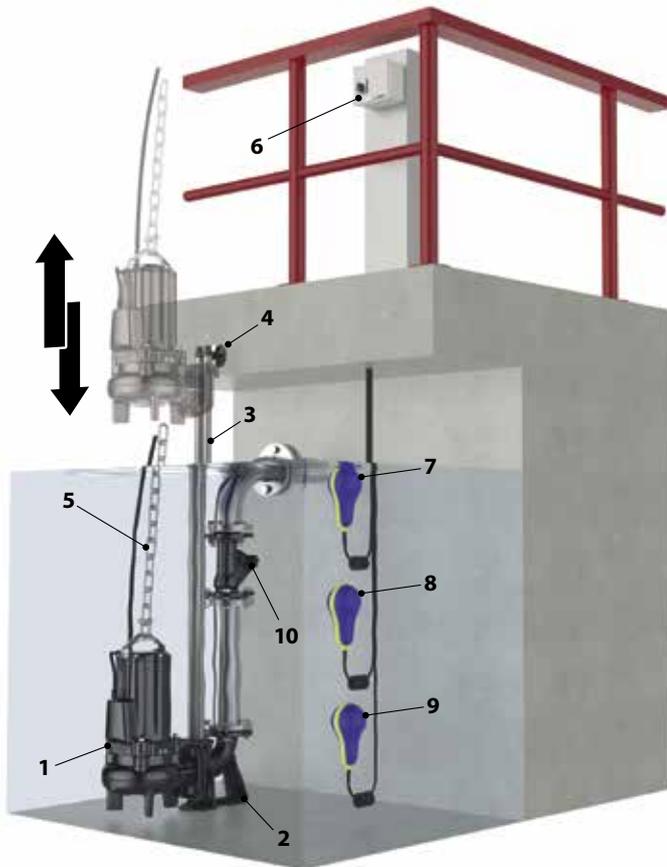


For guide tubes Ø 2"





## STANDARD INSTALLATION



1. Pump
2. Footing connection
3. Guide tubes
4. Support for the guide tubes
5. Lifting chain
6. Control box
7. Alarm float switch
8. Starting float switch
9. Stop float switch
10. Non-return valve



### Pedrollo S.p.A.

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**MADE IN ITALY**