TRITUS®

Submersible electric pumps with grinder

MADE IN ITALY

PEDROLLO®

the spring of life

TRITUS

Submersible electric pumps with grinder

Sewage water

Domestic use

Industrial use

TRITUS submersible shredder pumps are recognised for their reliability and high operational safety: not subject to locking. The grinding unit with its offset cutting system drastically reduces the motor torque requirement. It grinds thoroughly, using less power, and eliminates clogging caused by particularly problematic objects such as plastic, rubber, fabric items, sanitary pads, wet wipes, protective masks, latex gloves and other hygiene products.

These grinder pumpsare therefore recommended where it is necessary to convey wastewater over long distances or through pipes of a compact size, for plants not suited for being fitted with gravity systems or located in areas not served by sewerage systems.

They are recommended for:
- **waste from slaughterhouses**
- **food industries**
- **paper mills**
- **farms**
- **other manufacturing activities**
- **for toilet systems**

※ The shredder is manufactured entirely of high strength **AISI 440 C** tempered stainless steel

※ Double mechanical seal with an interposed oil chamber

※ All cast iron parts with **cataphoresis treatment**

※ Control box with a manual reset motor protection and with a starting and operating condenser (only for single phase versions)

PERFORMANCE RANGE
- Flow rate up to **410 l/min** (24.6 m^3/h)
- Head up to **44.5 m**

APPLICATION LIMITS
- **10 m** maximum immersion depth (with a sufficiently long power cable)
- Maximum liquid temperature **+40°C**
- Suction down to:
  – **85 mm** for TR 0.75, TR 0.9, TR 1.1, TR 1.3
  – **95 mm** for TR 1.5, TR 2.2, TR 2.2 AP, TR 3 AP, TR 3, TR 4
- Minimum immersion depth for continuous service:
  – **300 mm** for TR 0.75, TR 0.9, TR 1.1, TR 1.3
  – **350 mm** for TR 1.5, TR 2.2, TR 2.2 AP, TR 3 AP, TR 3, TR 4

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

INSTALLATION AND USE
The **TRITUS** series of grinder pumps, built in thick cast iron, exceptional strength, abrasion resistance and durability, are fitted with a **GRINDER in tempered stainless steel of great resistance** which completely grinds up solid bodies and fibres in waste and refluent water from domestic, civil and industrial applications and conveys it under pressure into the sewers through small diameter pipes.

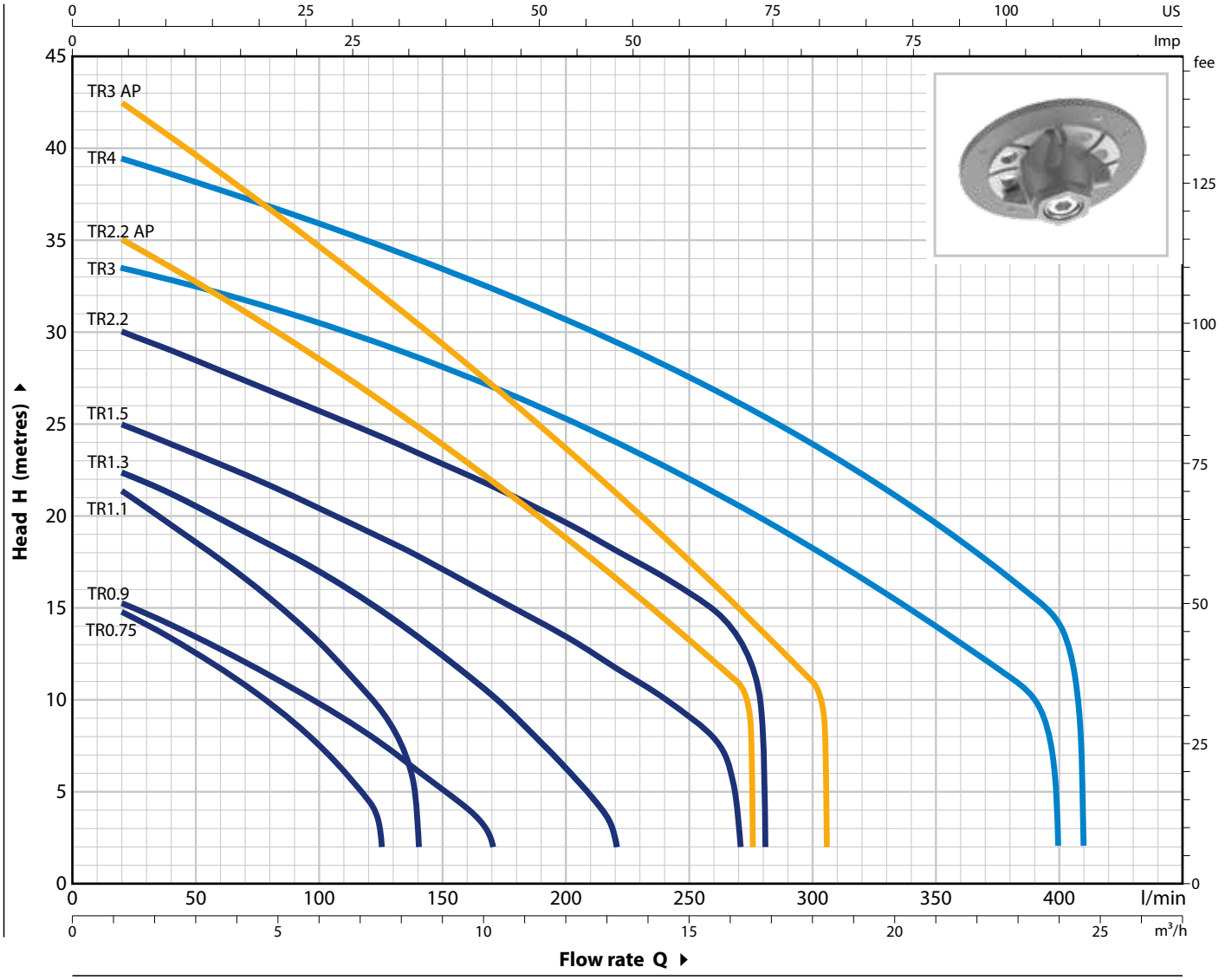
PATENTS - TRADEMARKS - MODELS
- Patent No. EP2313658
- Patent No. IT0001428923
- Registered EU Design No. 002501486-0002, 008625685-0005, 008625685-0006
- TRITUS® Registered trademark No. 013017181

OPTIONS AVAILABLE ON REQUEST
- Single-phase electric pumps without a float switch
- Other voltages or 60 Hz frequency

WARRANTY
2 years as per our general terms and conditions of sale

CHARACTERISTIC CURVES AND PERFORMANCE DATA

50 Hz



MODEL		POWER (P2)		Q														
Single-phase	Three-phase	kW	HP		m³/h	0	1.2	2.4	3.6	4.8	6	7.5	8.4	10.2	12	13.2	14.4	16.2	16.8
					l/min	**0**	**20**	**40**	**60**	**80**	**100**	**125**	**140**	**170**	**200**	**220**	**240**	**270**	**280**
TRm 0.75	**TR 0.75**	0.75	1	**H**	metres	16.5	15	13.5	11.8	10	7.5	2							
TRm 0.9	**TR 0.9**	0.9	1.25			16	15	13.8	12.5	11.1	9.6	7.5	6	2					
TRm 1.1	**TR 1.1**	1.1	1.5			23	21.5	19.5	17.5	15.5	13	9.5	2						
TRm 1.3	**TR 1.3**	1.3	1.75			23.5	22.5	21.2	19.8	18.4	17	14.8	13.4	10.2	6.2	2			
TRm 1.5	**TR 1.5**	1.5	2			26	25	24	22.8	21.7	20.4	18.8	17.8	15.6	13.4	11.7	10	2	
–	**TR 2.2**	2.2	3			31	30	29	28	26.8	25.7	24.3	23.5	21.5	19.5	18	16.5	13.2	2

MODEL		POWER (P2)		Q										
Single-phase	Three-phase	kW	HP		m³/h	0	1.2	3	6	9	12	15	16.5	18	18.3
					l/min	**0**	**20**	**50**	**100**	**150**	**200**	**250**	**275**	**300**	**305**
TRm 2.2 AP	**TR 2.2 AP**	2.2	3	**H**	metres	36.5	35	33	28.5	23.8	18.7	13.2	2		
–	**TR 3 AP**	3	4			44.5	42.5	40	35	29.5	23.7	17.5	14.3	11	2

MODEL	POWER (P2)		Q												
Three-phase	kW	HP		m³/h	0	1.2	3	6	9	12	15	16.5	18	21	24	24.6
				l/min	**0**	**20**	**50**	**100**	**150**	**200**	**250**	**275**	**300**	**350**	**400**	**410**
TR 3	3	4	**H**	metres	34.5	33.5	32.5	30.4	28	25.2	22	20.3	18.4	14.2	2	
TR 4	4	5.5			40	39.5	38	35.7	33.3	30.6	27.4	25.7	23.8	19.4	14.3	2

Q = Flow rate **H** = Total manometric head

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

TRITUS 0.75 ÷ 1.3

POS.	COMPONENT	CONSTRUCTION CHARACTERISTICS
1	**PUMP BODY**	Cast iron with an epoxy electro coating treatment, with threaded port in compliance with ISO 228/1
2	**IMPELLER**	Technopolymer open type
3	**GRINDER**	Hardened AISI 440C stainless steel
4	**MOTOR SHAFT**	Stainless steel AISI 431
5	**MOTOR CASING**	Cast iron with cataphoresis treatment

6 DOUBLE MECHANICAL SEAL IN OIL CHAMBER

Seal	***Shaft***	*Position*	*Materials*		
Model	***Diameter***		*Stationary ring*	*Rotational ring*	*Elastomer*
MG1-14D SIC	**Ø 14** mm	Motor side	Silicon carbide	Graphite	NBR
		Pump side	Silicon carbide	Silicon carbide	NBR

7 BEARINGS **6203 ZZ-C3E**

8 ELECTRIC MOTOR

TRm: single-phase 230 V - 50 Hz
with thermal overload protector incorporated into the winding

TR: three-phase 400 V - 50 Hz

– Insulation: class F
– Protection: IP X8

9 POWER CABLE

"H07 RN-F" type

- **Standard length 10 metres**

10 EXTERNAL FLOAT SWITCH

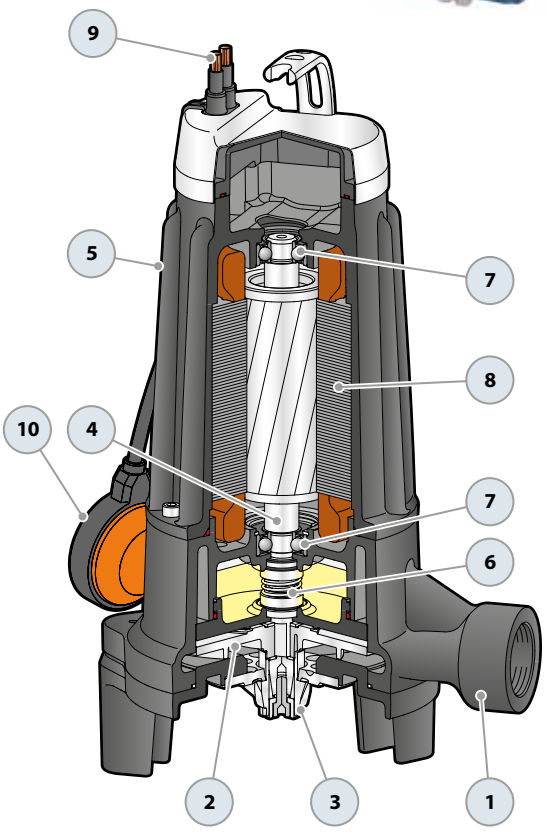
(for single-phase versions only)

11 CONTROL BOX

(for single-phase versions only)

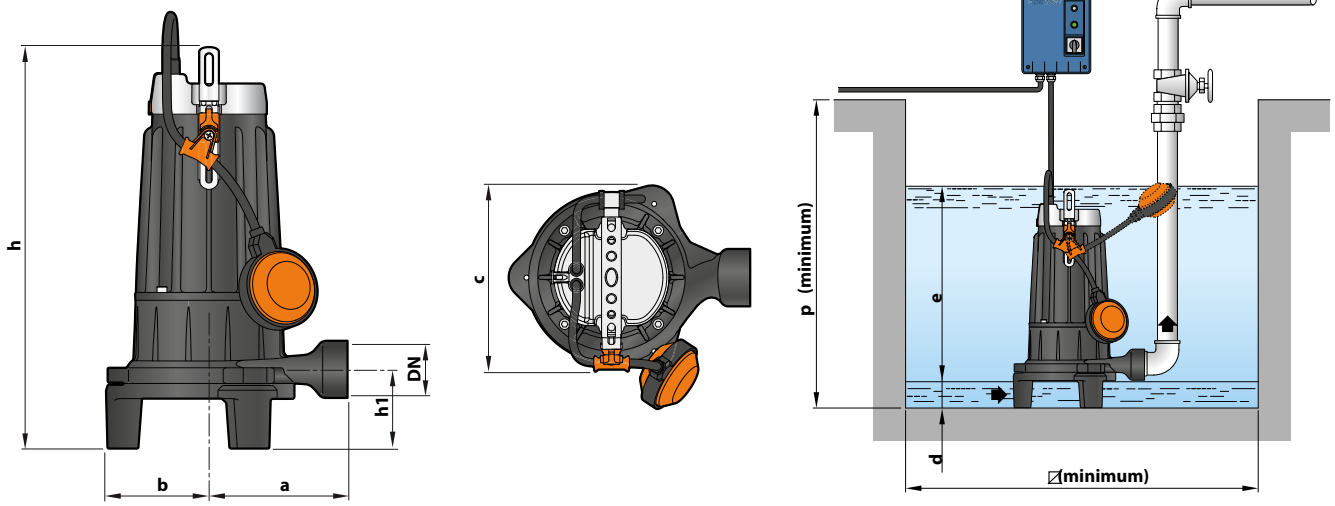
With manual overload cut-out and with starting and operating capacitors.

Standard equipment
Control box
(for single-phase versions only)



DIMENSIONS AND WEIGHTS

Typical installation (for single-phase version)



MODEL		PORT	DIMENSIONS mm									kg *	
Single-phase	**Three-phase**	**DN**	a	b	c	h	h1	d	e	p	⍁	1~	3~
TRm 0.75	**TR 0.75**	**1¼"**	140	104	186	406	80	85	adjustable	500	500	**24.0**	**22.0**
TRm 0.9	**TR 0.9**											**23.9**	**22.2**
TRm 1.1	**TR 1.1**											**25.7**	**23.2**
TRm 1.3	**TR 1.3**											**25.5**	**23.1**

(* weight of pump without control box)

ABSORPTION

MODEL	VOLTAGE	
Single-phase	230 V	240 V
TRm 0.75	**5.5** A	**5.4** A
TRm 0.9	**6.0** A	**5.8** A
TRm 1.1	**7.4** A	**7.1** A
TRm 1.3	**9.0** A	**8.6** A

MODEL	VOLTAGE			
Three-phase	230 V	400 V	240 V	415 V
TR 0.75	**4.3** A	**2.5** A	**4.2** A	**2.4** A
TR 0.9	**4.5** A	**2.6** A	**4.3** A	**2.5** A
TR 1.1	**5.2** A	**3.0** A	**5.0** A	**2.9** A
TR 1.3	**6.6** A	**3.8** A	**6.2** A	**3.6** A

PALLETIZATION

MODEL	GROUPAGE
Single-phase	no. of pumps
TRm 0.75	**36**
TRm 0.9	**36**
TRm 1.1	**36**
TRm 1.3	**36**

MODEL	GROUPAGE
Three-phase	no. of pumps
TR 0.75	**60**
TR 0.9	**60**
TR 1.1	**60**
TR 1.3	**60**

CAPACITOR

MODEL	CAPACITY	
Single phase (230 V or 240 V)	*Capacitance of the **operating** capacitor*	*Capacitance of the **starting** capacitor*
TRm 0.75	**25** µF 450 VL	**80** µF 450 VL
TRm 0.9		
TRm 1.1		
TRm 1.3		

TRITUS 1.5 - 2.2

POS.	COMPONENT	CONSTRUCTION CHARACTERISTICS
1	**PUMP BODY**	Cast iron with an epoxy electro coating treatment, with threaded port in compliance with ISO 228/1
2	**IMPELLER**	Precision cast stainless steel AISI 304 open type
3	**GRINDER**	Hardened AISI 440C stainless steel
4	**MOTOR SHAFT**	Stainless steel AISI 431
5	**MOTOR CASING**	Cast iron with cataphoresis treatment

6 SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER

Seal	***Shaft***	*Position*		*Materials*	
Model	***Diameter***		*Stationary ring*	*Rotational ring*	*Elastomer*
STA-20	**Ø 20** mm	Motor side	Ceramic	Graphite	NBR
STA-19	**Ø 19** mm	Pump side	Silicon carbide	Silicon carbide	NBR

7 BEARINGS **3304 B-ZZ-C3 / 6304 ZZ-C3**

8 ELECTRIC MOTOR

TRm: single-phase 230 V - 50 Hz
with thermal overload protector incorporated into the winding

TR: three-phase 400 V - 50 Hz
with thermal overload protector incorporated into the winding to connect to the control box

– Insulation: class F
– Protection: IP X8

9 POWER CABLE

"H07 RN-F" type

- **Standard length 10 metres**

10 EXTERNAL FLOAT SWITCH

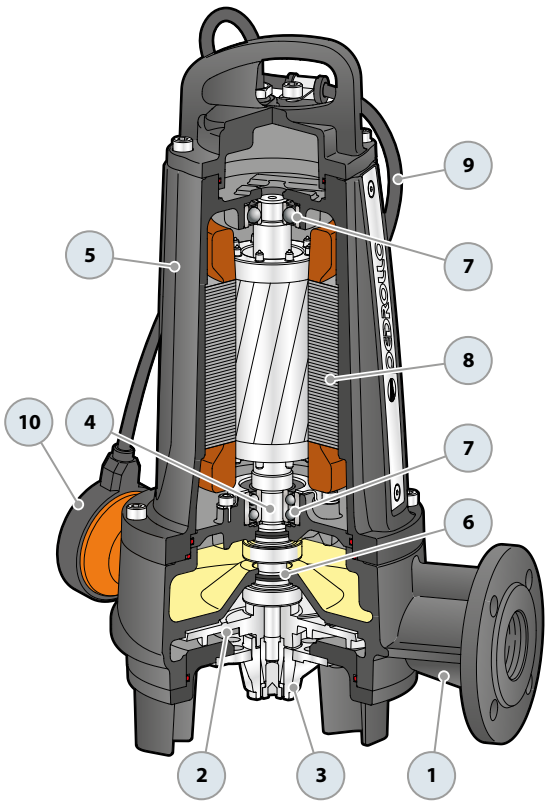
(for single-phase versions only)

11 CONTROL BOX

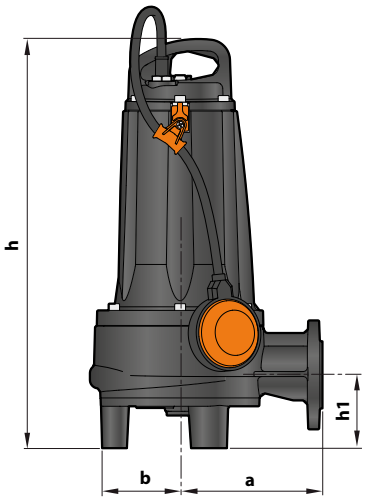
(for single-phase versions only)

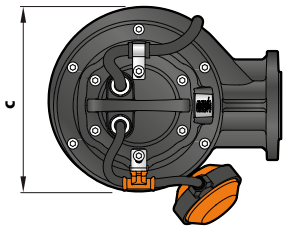
With manual overload cut-out and with starting and operating capacitors.

Standard equipment
Control box
(for single-phase versions only)

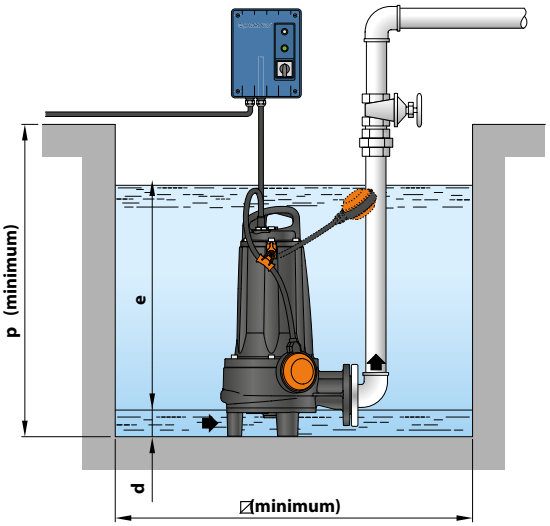


DIMENSIONS AND WEIGHTS





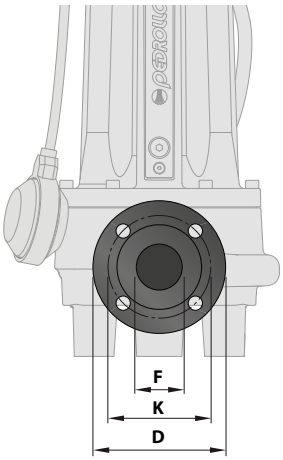
Typical installation (for single-phase version)



MODEL		DIMENSIONS mm									kg	
Single-phase	**Three-phase**	a	b	c	h	h1	d	e	p	⍁	1~	3~
TRm 1.5	**TR 1.5**	172	105	221	489	87.5	95	adjustable	800	800	**45.0**	**44.0**
–	**TR 2.2**										–	**44.0**

PORT FLANGE

MODEL		FLANGE	F	K	D	HOLES	
Single-phase	**Three-phase**	**DN**		**mm**	**mm**	**No.**	**Ø (mm)**
TRm 1.5	**TR 1.5**	**40** (PN6)	1½"	100	130	4	14
–	**TR 2.2**						



ABSORPTION

MODEL	VOLTAGE
Single-phase	230 V
TRm 1.5	**10.0** A

MODEL	VOLTAGE
Three-phase	400 V
TR 1.5	**3.7** A
TR 2.2	**5.5** A

CAPACITOR

MODEL	CAPACITY	
Single phase (230 V or 240 V)	*Capacitance of the **operating** capacitor*	*Capacitance of the **starting** capacitor*
TRm 1.5	**50** µF 450 VL	**80** µF 450 VL

PALLETIZATION

MODEL	PER GROUPAGE no. of pumps
TRm 1.5	**10**
TR 1.5	**12**
TR 2.2	**12**

TRITUS 2.2 ÷ 4

POS.	COMPONENT	CONSTRUCTION CHARACTERISTICS
1	**PUMP BODY**	Cast iron with an epoxy electro coating treatment, with threaded port in compliance with ISO 228/1
2	**IMPELLER**	Precision cast stainless steel AISI 304 open type
3	**GRINDER**	Hardened AISI 440C stainless steel
4	**MOTOR SHAFT**	Stainless steel AISI 431
5	**MOTOR CASING**	Cast iron with cataphoresis treatment
6	**MOTOR BRACKET**	Cast iron with cataphoresis treatment

7 SHAFT WITH DOUBLE MECHANICAL SEAL SEPARATED BY AN OIL CHAMBER

Seal	***Shaft***	*Position*		*Materials*	
Model	***Diameter***		*Stationary ring*	*Rotational ring*	*Elastomer*
STA-24	**Ø 24** mm	Motor side	Ceramic	Graphite	NBR
STA-22	**Ø 22** mm	Pump side	Silicon carbide	Silicon carbide	NBR

8 BEARINGS **3305 B-2RS-EA5 / 6204-ZZ-EA3**

9 ELECTRIC MOTOR

TRm: single-phase 230 V - 50 Hz
with thermal overload protector incorporated into the winding

TR: three-phase 400 V - 50 Hz
with thermal overload protector incorporated into the winding to connect to the control box

– Insulation: class F
– Protection: IP X8

10 POWER CABLE

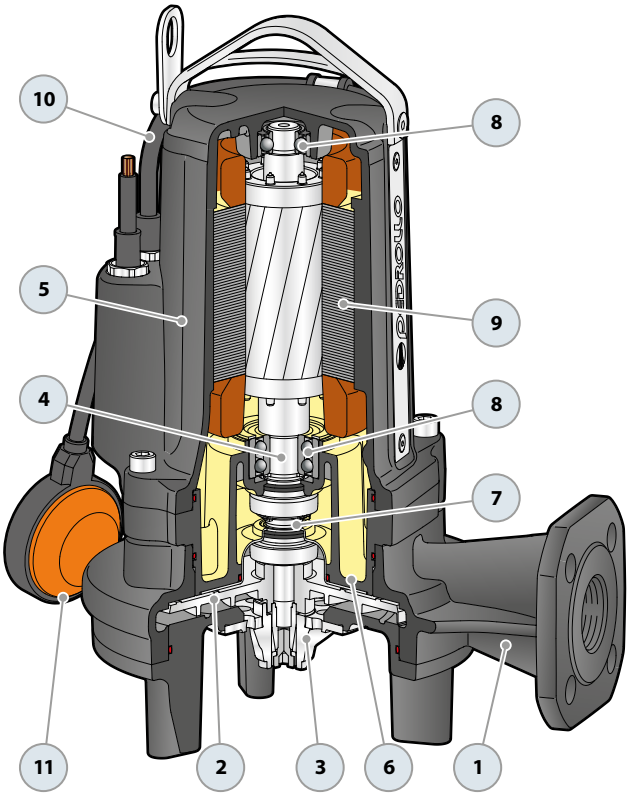
"H07 RN-F" type
Standard length 10 metres

11 EXTERNAL FLOAT SWITCH
(for single-phase versions only)

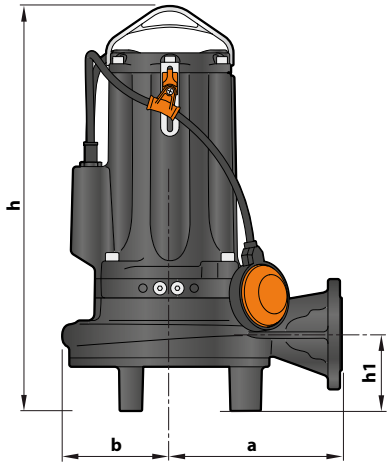
12 CONTROL BOX
(for single-phase versions only)

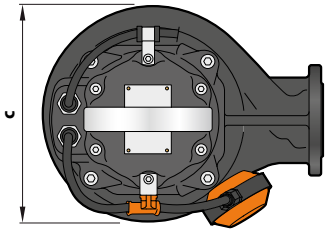
With manual overload cut-out and with starting and operating capacitors.

Standard equipment
Control box
(for single-phase versions only)

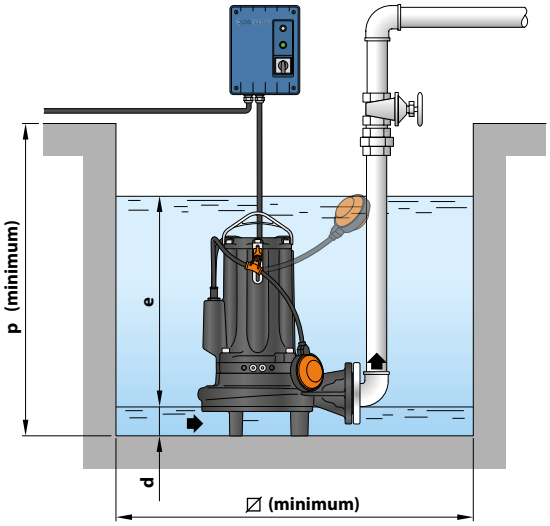


DIMENSIONS AND WEIGHTS





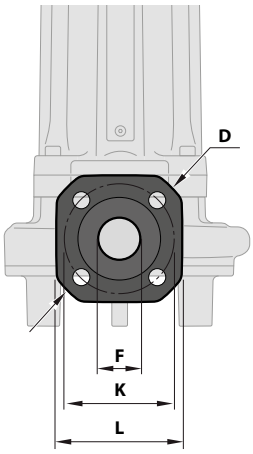
Typical installation



MODEL		DIMENSIONS mm									kg	
Single-phase	**Three-phase**	a	b	c	h	h1	d	e	p	⍁	1~	3~
TRm 2.2 AP	**TR 2.2 AP**	203	126	256	480 | 453	90	95	adjustable	800	800	**53.5**	**47.0**
–	**TR 3 AP**				480						–	**53.0**
	TR 3										–	**53.0**
	TR 4										–	**54.0**

PORT FLANGE

MODEL		FLANGE	F	K	D	L	HOLES	
Single-phase	**Three-phase**	**DN**		mm	mm	mm	No.	Ø mm
TRm 2.2 AP	**TR 2.2 AP**	**40** (PN10)	**1½"**	110	150	130	4	18
–	**TR 3 AP**							
–	**TR 3**							
–	**TR 4**							



ABSORPTION

MODEL	VOLTAGE
Single-phase	230 V
TRm 2.2 AP	**14.0** A

MODEL	VOLTAGE
Three-phase	400 V
TR 2.2 AP	**5.5** A
TR 3 AP	**6.3** A
TR 3	**6.3** A
TR 4	**7.5** A

CAPACITOR

MODEL	CAPACITY	
Single-phase (230 V or 240 V)	*Capacitance of the* ***operating*** *capacitor*	*Capacitance of the* ***starting*** *capacitor*
TRm 2.2 AP	**60** µF 450 VL	**120** µF 450 VL

PALLETIZATION

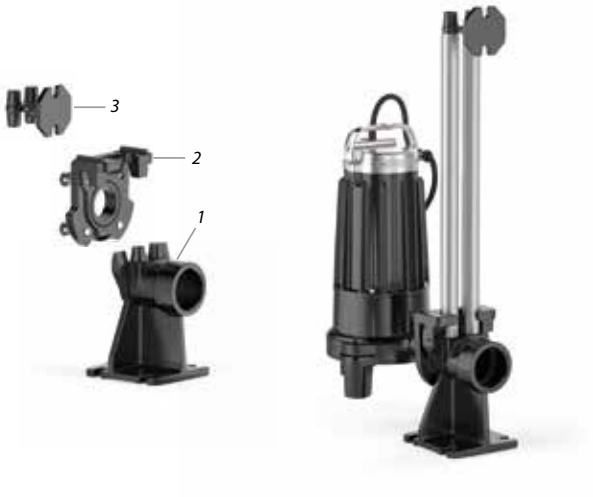
MODEL	PER GROUPAGE
	no. of pumps
TR 2.2 AP	**18**
TR 3 AP	**18**
TR 3	**18**
TR 4	**18**

SEWAGE LIFTING SYSTEM

HORIZONTAL DELIVERY VERSION WITH ¾" GUIDE TUBES

For **TR 0.75, TR 0.9, TR 1.1, TR 1.3**	Code ASSPTRITUS11	**DN 2"**
For **TR 1.5, TR 2.2**	Code ASSPTRITUS22	**DN 2"**

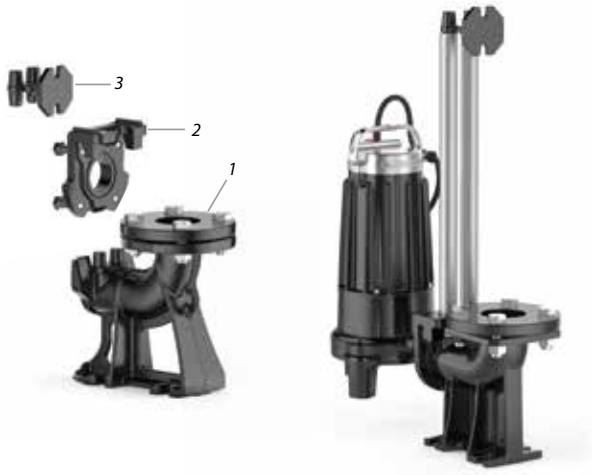
Kit consisting of:
1) footing connection
2) slide guide
(with ring nut and seal for TR 0.75, TR 0.9, TR 1.1, TR 1.3, with screws and seal for TR 1.5 and TR 2.2)
3) support for the guide tubes



VERTICAL DELIVERY VERSION WITH ¾" GUIDE TUBES

For **TR 0.75, TR 0.9, TR 1.1, TR 1.3**	Code ASSPTRI-TUS11V	**DN 2½"**
For **TR 1.5, TR 2.2**	Code ASSPTRI-TUS22V	**DN 2½"**

Kit consisting of:
1) footing connection complete with counterflange
2) slide guide
(with ring nut and seal for TR 0.75, TR 0.9, TR 1.1, TR 1.3, with screws and seal for TR 1.5 e TR 2.2)
3) support for the guide tubes



ORDERABLE ACCESSORIES

SLIDE GUIDE (can also be ordered separately)

For **TR 0.75, TR 0.9, TR 1.1, TR 1.3**	Code ASSFL003
For **TR 1.5, TR 2.2**	Code ASSFL004

With ring nut and seal for TR 0.75, TR 0.9, TR 1.1, TR 1.3
With screws and seal for TR 1.5, TR 2.2

INTERMEDIATE SUPPORT (on request)

For guide tubes Ø **¾"**	Code 859SV340INTFA

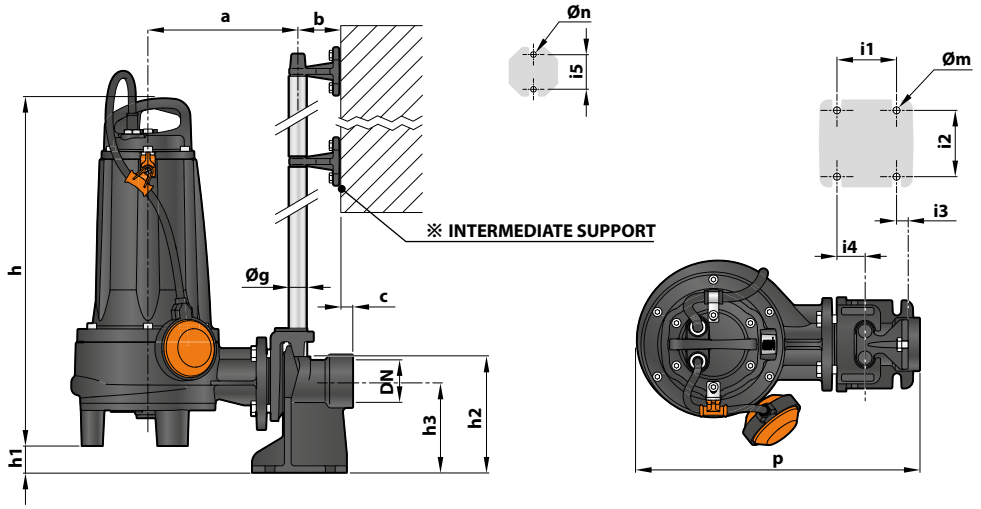
In order to ensure stability, insert the intermediate support every 2 metres of the guide tube

GUIDE TUBE (made of AISI 304 stainless steel)

Guide tube Ø **¾"**	Code 54SARTG005

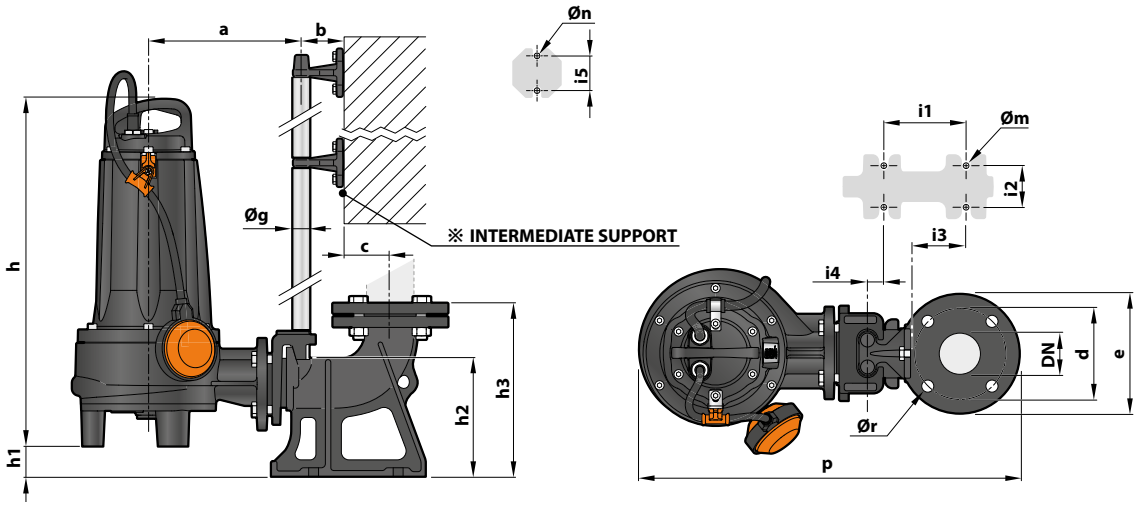
Maximum tube length: 6 metres

DIMENSIONS (horizontal delivery version)



MODEL		PORT	Solids	DIMENSIONS mm													
Single-phase	Three-phase	DN	mm	a	b	c	p	h1	h2	h3	i1	i2	i3	i4	i5	Øg	Øm	Øn
TRm 0.75	TR 0.75	2"	Ø 7	212	61	17	395	50	165	130	85	94	16	40	50	¾"	14	11
TRm 0.9	TR 0.9																	
TRm 1.1	TR 1.1																	
TRm 1.3	TR 1.3																	
TRm 1.5	TR 1.5	2"	Ø 7	215	61	17	400	42.5	165	130	85	94	16	40	50	¾"	14	11
–	TR 2.2																	

DIMENSIONS (vertical delivery version)



MODEL		PORT	Solids	DIMENSIONS mm																	
Single-phase	Three-phase	DN	mm	a	b	c	d	e	p	h1	h2	h3	i1	i2	i3	i4	i5	Øg	Øm	Øn	Ør
TRm 0.75	TR 0.75	2½"	Ø 7	206	61	51.5	125	165	505	48	163.5	215.5	120	72	62	3	50	3/4	14	11	18
TRm 0.9	TR 0.9																				
TRm 1.1	TR 1.1																				
TRm 1.3	TR 1.3																				
TRm 1.5	TR 1.5	2½"		211	61	51.5	125	165	514	40	163.5	215.5	120	72	62	3	50	3/4	14	11	18
–	TR 2.2																				

HORIZONTAL DELIVERY VERSION WITH ¾" GUIDE TUBES

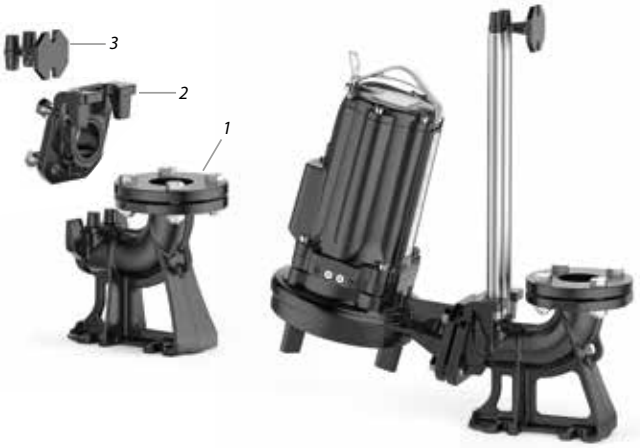
For **TR 2.2. AP, TR 3 AP, TR 3, TR4**	Code ASSPTRITUS61	**DN 2"**

Kit consisting of:
1) footing connection
2) slide guide with screws and seal
3) support for the guide tubes

VERTICAL DELIVERY VERSION WITH ¾" GUIDE TUBES

For **TR 2.2. AP, TR 3 AP, TR 3, TR4**	Code ASSPTRI-TUS61V	**DN 2½"**

Kit consisting of:
1) footing connection complete with counterflange
2) slide guide with screws and seal
3) support for the guide tubes



ORDERABLE ACCESSORIES

SLIDE GUIDE (can also be ordered separately)

For **TR 2.2. AP, TR 3 AP, TR 3, TR4**	Code ASSFL014

With screws and seal

INTERMEDIATE SUPPORT (on request)

For guide tubes Ø **¾"**	Code 859SV340INTFA

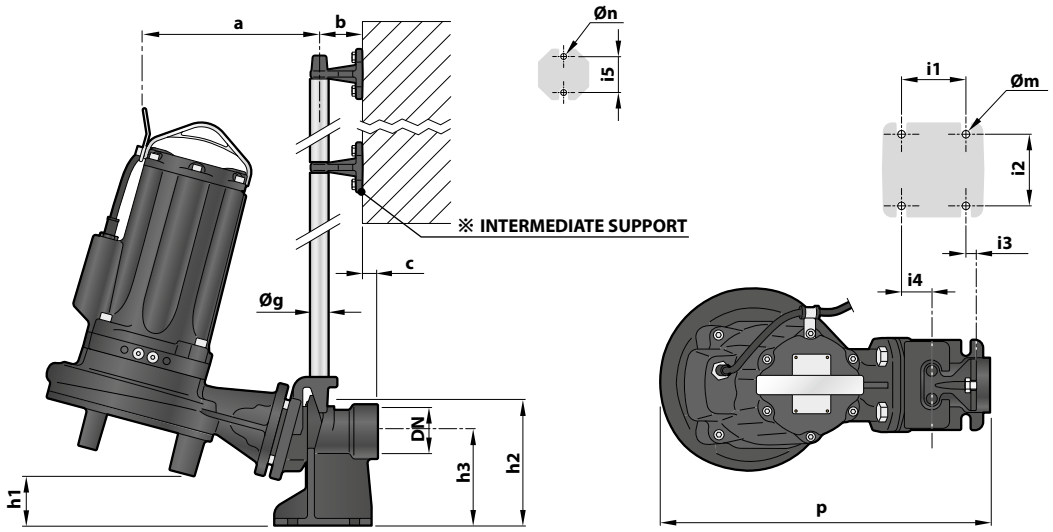
In order to ensure stability, insert the intermediate support every 2 metres of the guide tube

GUIDE TUBE (made of AISI 304 stainless steel)

Guide tube Ø **¾"**	Code 54SARTG005

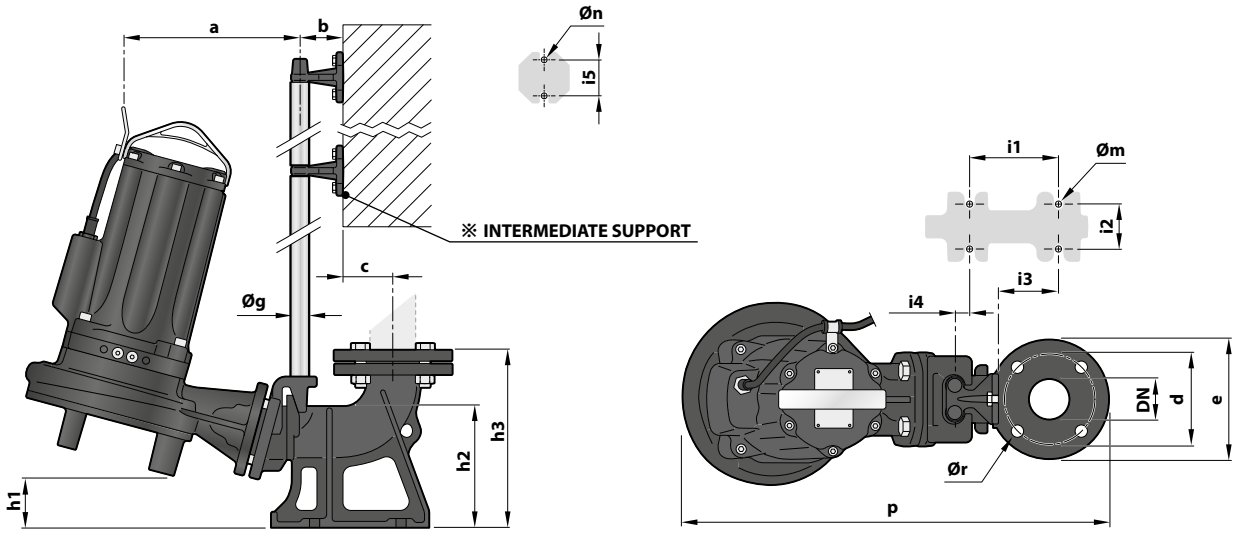
Maximum tube length: 6 metres

DIMENSIONS (horizontal delivery version)



MODEL	PORT	Solids	DIMENSIONS mm														
	DN	mm	a	b	c	p	h1	h2	h3	i1	i2	i3	i4	i5	Øg	Øm	Øn
TR 2.2. AP	2"	Ø 7	228	61	17	455	71	165	130	85	94	16	40	50	3/4	14	11
TR 3 AP			238														
TR 3																	
TR 4																	

DIMENSIONS (vertical delivery version)



MODEL	PORT	Solids	DIMENSIONS mm																	
	DN	mm	a	b	c	d	e	p	h1	h2	h3	i1	i2	i3	i4	i5	Øg	Øm	Øn	Ør
TR 2.2. AP	2½"	Ø 7	225	61	51.5	125	165	569	69	163.5	215.5	120	72	62	3	50	3/4	14	11	18
TR 3 AP			235																	
TR 3																				
TR 4																				

NOTES

NOTES

The data contained in this publication are not to be considered binding.
Pedrollo S.p.A. reserves the right to make any changes it deems appropriate to improve its production.

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