



## MES ENERGY SERVICES

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23<sup>rd</sup> August 2013

Robert Walker  
Cranbrook Basements Ltd.  
26-28 Hammersmith Grove,  
London,  
W8 7BA

Dear Robert,

### Ref: Carbon dioxide emissions from foul water pump.

Following your enquiry regarding the calculation the operational lifecycle carbon in kgCO<sub>2</sub> of a foul sewer pump associated with a basement development I have undertaken some simple calculations based on the information you provided:

If you assume:

A 1.25kW pump will complete 4.5 cycles of 10 second duration per day and a carbon factor for mains generated electricity of 0.517kgCO<sub>2</sub>/kWh as defined in SAP2009 and used in current Part L Building Regulations.

The annual CO<sub>2</sub> emissions for the pump can be calculated as follows:

$$1.25 \times 0.0125 \times 0.517 \times 365 = 2.95\text{kgCO}_2/\text{yr}$$

Where:

1.25 = Rated output of the pump (kW)

0.0125 = Time pump runs per day (hrs)

0.517 = Carbon factor of mains electricity (kgCO<sub>2</sub>/kWh)

365 = Days in year

Therefore:

Annual emissions are: 2.95kgCO<sub>2</sub>

30 year emissions are: 88.45kgCO<sub>2</sub>

60 year emissions are: 176.91kgCO<sub>2</sub>

If you have any queries at all, or want to discuss the project further please don't hesitate to contact me.

Kind regards.

Chris.

**Chris Jones BEng(Hons) MSc**  
Technical Director

SUSTAINABLE BUILDING SOLUTIONS

Midland Energy Services Ltd. Company No: 5945430  
Reg. Office: Cabourn House, Station Street, Bingham, Notts NG13 8AQ

## Submersible motor pumps 50 Hz



### Fields of Application

Pumping of waste water containing solid matter or domestic sewage such as waste from toilets, washing machines, dishwashers etc.

Surface water or rain water pumping such as car park drainage.

Drainage of sumps liable to flooding.

### Operating characteristics

Q : up to 40 m<sup>3</sup>/h, (11 l/s).

H : up to 16 m.

Motor Power ;

1.5 kw maximum for three phase motor

1.1 kw maximum for single phase motor

Operating temperature up to 40°C

Intermittently 70°C (3 to 5 min.).

### Materials

Casing : EN.GJL-200 / JL 1030 / FGL 200 / GG 20.

Impeller : EN.GJL-200 / JL 1030 / FGL 200 / GG 20.

Shaft : Chrome steel 1.4021 / X20 Cr13 / Z20 C13.

Shaft seal : (Motor side) Lip seal

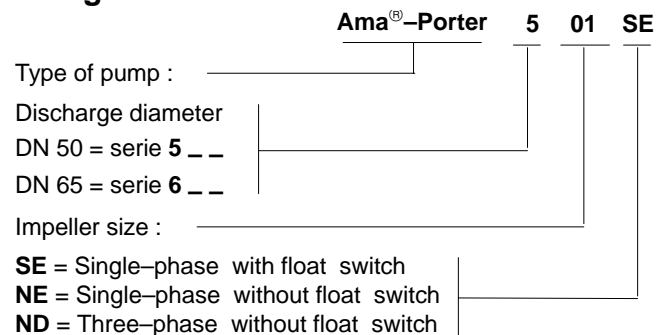
Shaft seal : (Pump side) Mechanical seal  
Silicium Carbide/Alumin Oxide

Nuts & bolts : Stainless steel

Elastomers : Nitrile rubber

Float switch : Polypropylene

### Designation



### Pump type

Vertical single casing submersible motor pump.

### Shaft seal

Twin shaft seal with intermediate oil chamber.

Motor side : Single lip seal

Pump side : Single mechanical seal independent of direction of rotation

### Motor

Single phase : 230 V – 50 Hz with built in thermal overload protection

Three phase : 400 V – 50 Hz direct on-line starting

Motor protection : IP68, Class F insulation in accordance with EN 60529 / IEC 529.

### Bearings

Sealed for life radial ball bearings.

CE – EN 12 050

The pump must not be used in countries where pumps handling sewage with faeces are subject to explosion protection regulations.

## Scope of Supply

Pump complete ready for installation with either stationary or transportable mounting kits.

The **SE** versions are fitted with an integral float switch.

## Details

- Manufactured in cast iron construction  
EN.GJL-200 / JL 1030 / FGL 200 / GG 20.
- Non-flameproof motor.
- Unique resin imbedded, plug connection.
- Single phase version are supplied with a 10 m electrical cable and plug.
- Three phase version supplied with a 10 m electrical cable.
- Integral cast handle for easy hanging or lifting.
- Paint coating:
  - Surface treatment: SA 2<sup>1</sup>/<sub>2</sub>, Sis 055900
  - Primer : Ferritic Oxide 35 to 40 µm
  - Top coat : environmentally-friendly KSB-standard coating, approx.40 µm, RAL 5002 (ultramarine blue).

## Description of installation kits

Series	5 – – SE/NE/ND	6 – – SE/NE/ND
Version		
<b>Transportable</b>	3 feet in stainless steel Discharge elbow (2") Hosetail (2") Hose clip (Ø 60 to 80) Nuts and bolts for feet and elbow	3 feet in stainless steel Discharge elbow (2") Hosetail (2" <sup>1</sup> / <sub>2</sub> ) Hose clip (Ø 80 to 100) Nuts and bolts for feet and elbow
<b>Stationary</b> Guide rope or rail or hoop (vertical discharge connection)	Duckfoot bend 50/50 mm Claw Bracket Guiding rope or hoop Rail not included Anchor bolts Chain	Duckfoot bend 65/65 mm Claw Bracket Guiding rope or hoop Rail not included Anchor bolts Chain
<b>Stationary</b> Guide rope or rail or hoop (horizontal discharge connection)	Duckfoot bend 50/2" Claw Bracket Guiding rope or hoop Rail not included Anchor bolts Chain	Pump pedestal 65/2" <sup>1</sup> / <sub>2</sub> Claw Bracket Guiding rope or hoop Rail not included Anchor bolts Chain

## Thermal overload protection

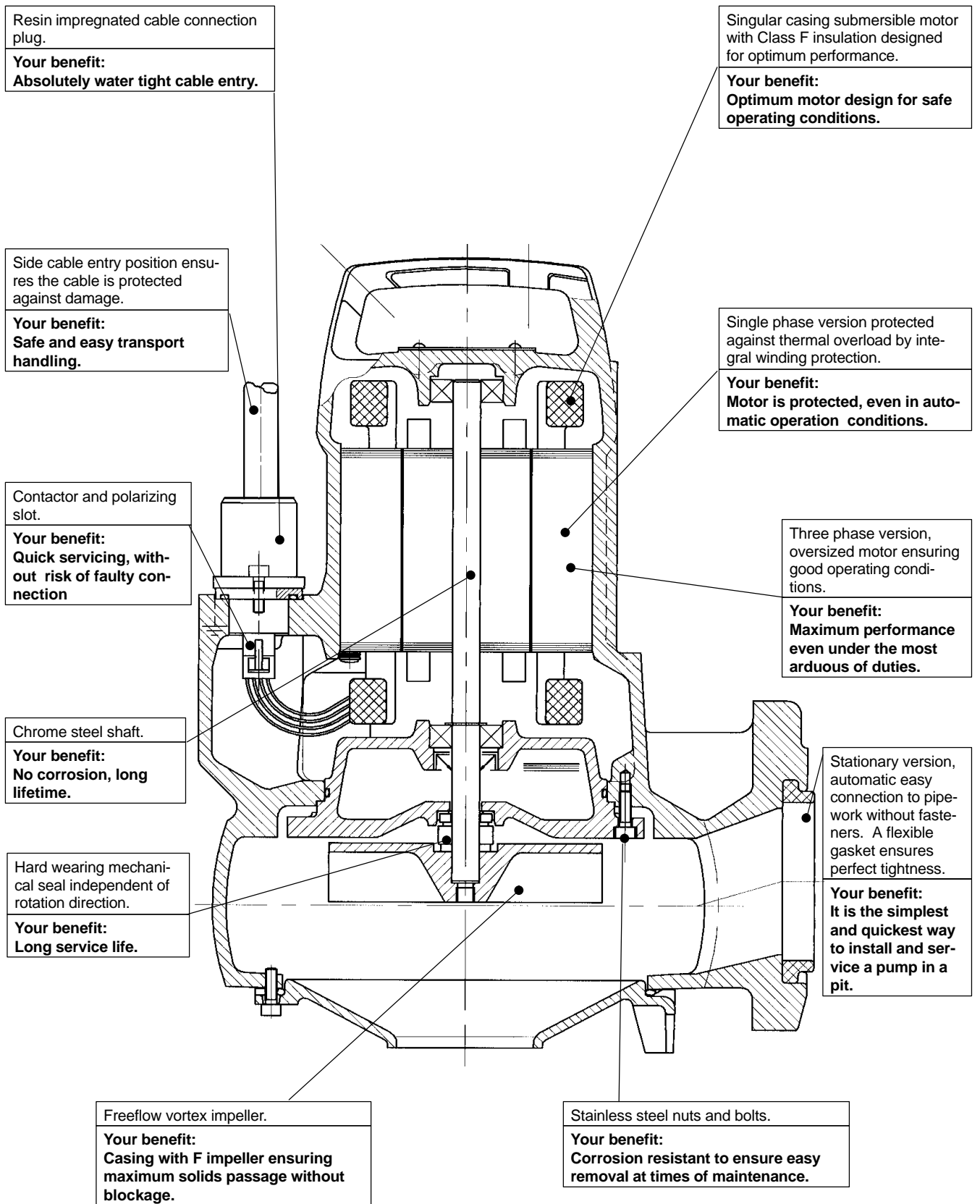
### Single phase version

Integral thermal overload protection within motor windings.

### Three phase version

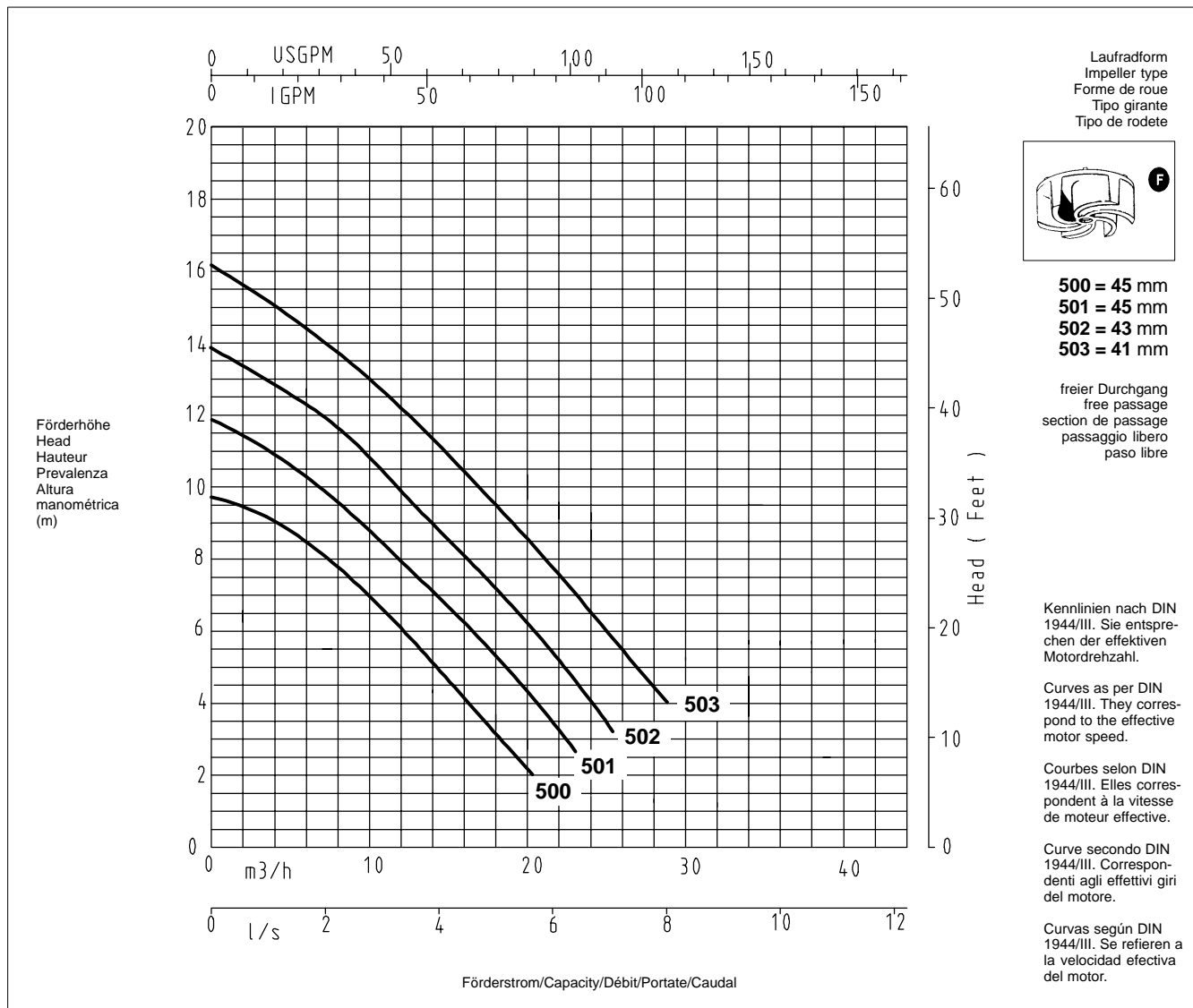
No thermal protection of the windings, current supply should be protected via a thermal overload relay installed inside the control panel and set to the current value indicated on the rating plate +15%

Advantages offered by the Ama<sup>®</sup>-Porter pump.



Ama®-Porter sizes 5 -- SE/NE/ND

2 900 1/min



50 Hz – 1 ~ 230 V

Type	Impeller diameter mm	P <sub>1</sub> kW	P <sub>2</sub> kW	I <sub>N</sub> (A)	I <sub>D</sub> (A)	Temp t°C	Electric cable	Outer diameter mm	Weight kg	Ident. Nr
500 SE	100	1,0	0,55	5,0	18,2	40	3 x 1 mm <sup>2</sup>	9,0	22	39 017 187
501 SE	110	1,25	0,75	6,0	18,2	40	3 x 1 mm <sup>2</sup>	9,0	22	39 017 100
502 SE	120	1,8	1,1	8,2	18,2	40	3 x 1 mm <sup>2</sup>	9,0	22	39 017 101
503 SE	130	1,8	1,1	8,2	18,2	40	3 x 1 mm <sup>2</sup>	9,0	22	39 017 102
500 NE	100	1,0	0,55	5,0	18,2	40	3 x 1 mm <sup>2</sup>	9,0	22	39 017 195
501 NE	110	1,25	0,75	6,0	18,2	40	3 x 1 mm <sup>2</sup>	9,0	22	39 017 188
502 NE	120	1,8	1,1	8,2	18,2	40	3 x 1 mm <sup>2</sup>	9,0	22	39 017 189
503 NE	130	1,8	1,1	8,2	18,2	40	3 x 1 mm <sup>2</sup>	9,0	22	39 017 190

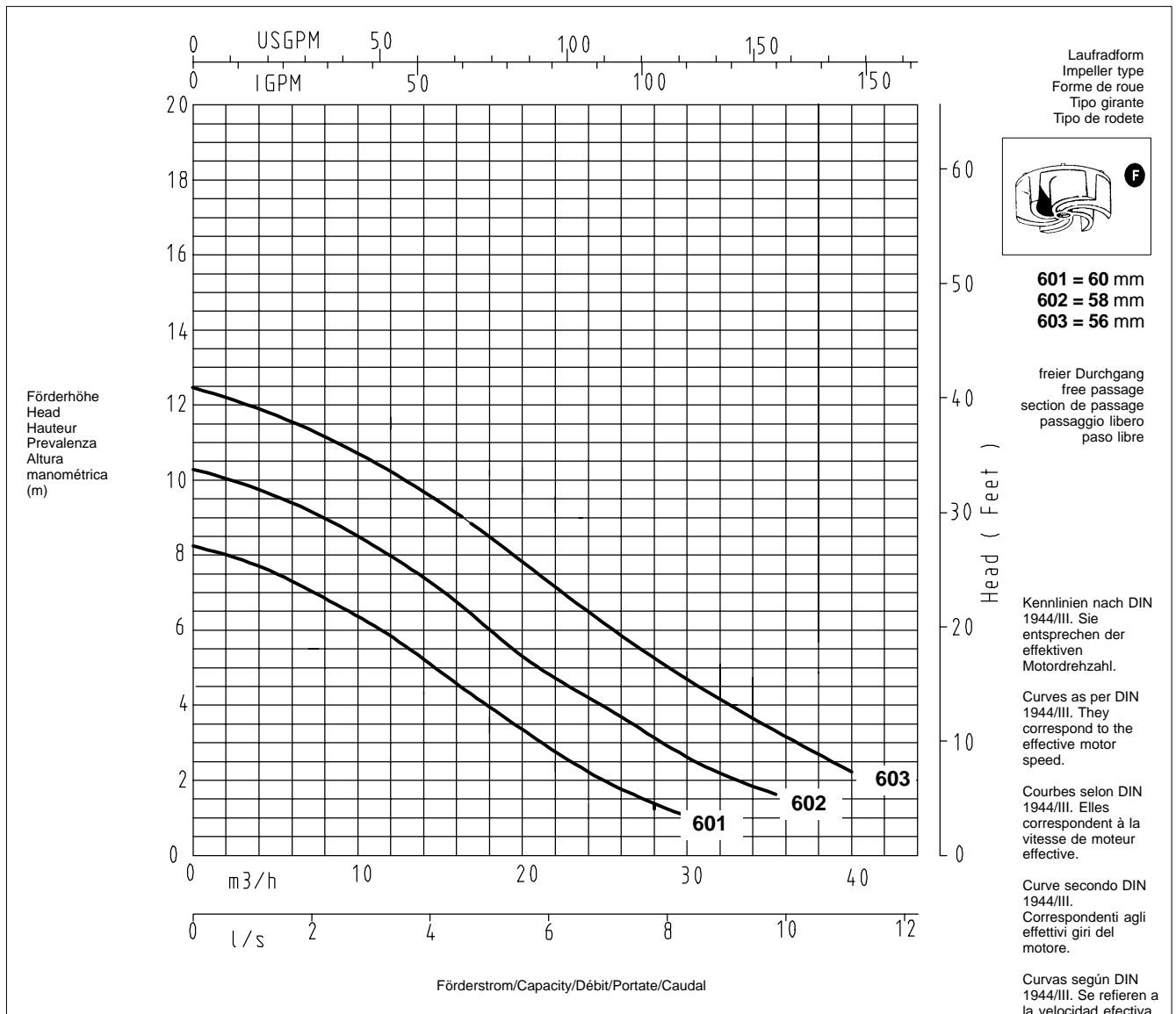
50 Hz – 3 ~ 400 V

500 ND	100	0,9	0,55	2,3	18,3	40	4 x 1 mm <sup>2</sup>	10	22	39 017 191
501 ND	110	1,1	0,75	2,8	18,3	40	4 x 1 mm <sup>2</sup>	10	22	39 017 103
502 ND	120	1,5	1,1	3,0	18,3	40	4 x 1 mm <sup>2</sup>	10	22	39 017 104
503 ND	130	2,05	1,5	3,5	18,3	40	4 x 1 mm <sup>2</sup>	10	22	39 017 105

The diagrams refer to the effective speed of the motor.  
 Density=1 kg/dm<sup>3</sup>, viscosity=1 cSt.

Ama®-Porter sizes 6 -- SE/NE/ND

2 900 1/min



50 Hz – 1 ~ 230 V

Type	Impeller diameter mm	P <sub>1</sub> kW	P <sub>2</sub> kW	I <sub>N</sub> (A)	I <sub>D</sub> (A)	Temp t°C	Electric cable	Outer diameter mm	Weight kg	Ident. Nr
601 SE	110	1,25	0,75	6,0	18,2	40	3 x 1 mm <sup>2</sup>	9,0	25	39 017 106
602 SE	120	1,8	1,1	8,2	18,2	40	3 x 1 mm <sup>2</sup>	9,0	25	39 017 107
603 SE	130	1,8	1,1	8,2	18,2	40	3 x 1 mm <sup>2</sup>	9,0	25	39 017 108
601 NE	110	1,25	0,75	6,0	18,2	40	3 x 1 mm <sup>2</sup>	9,0	25	39 017 192
602 NE	120	1,8	1,1	8,2	18,2	40	3 x 1 mm <sup>2</sup>	9,0	25	39 017 193
603 NE	130	1,8	1,1	8,2	18,2	40	3 x 1 mm <sup>2</sup>	9,0	25	39 017 194

50 Hz – 3 ~ 400 V

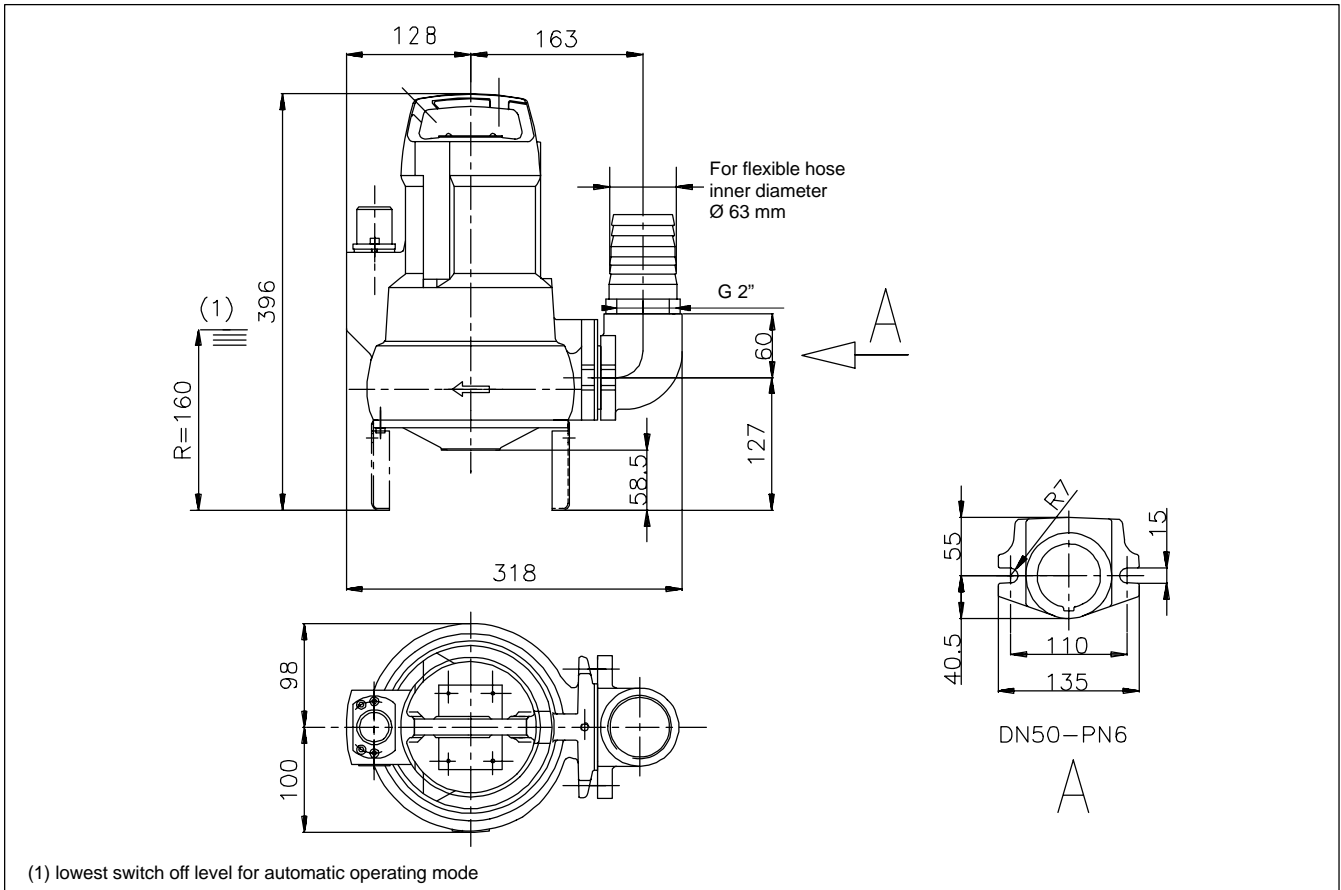
601 ND	110	1,1	0,75	2,8	18,3	40	4 x 1 mm <sup>2</sup>	10	25	39 017 109
602 ND	120	1,5	1,1	3,0	18,3	40	4 x 1 mm <sup>2</sup>	10	25	39 017 110
603 ND	130	2,05	1,5	3,5	18,3	40	4 x 1 mm <sup>2</sup>	10	25	39 017 111

The diagrams refer to the effective speed of the motor.  
 Density=1 kg/dm<sup>3</sup>, viscosity=1 cSt.

Dimensions

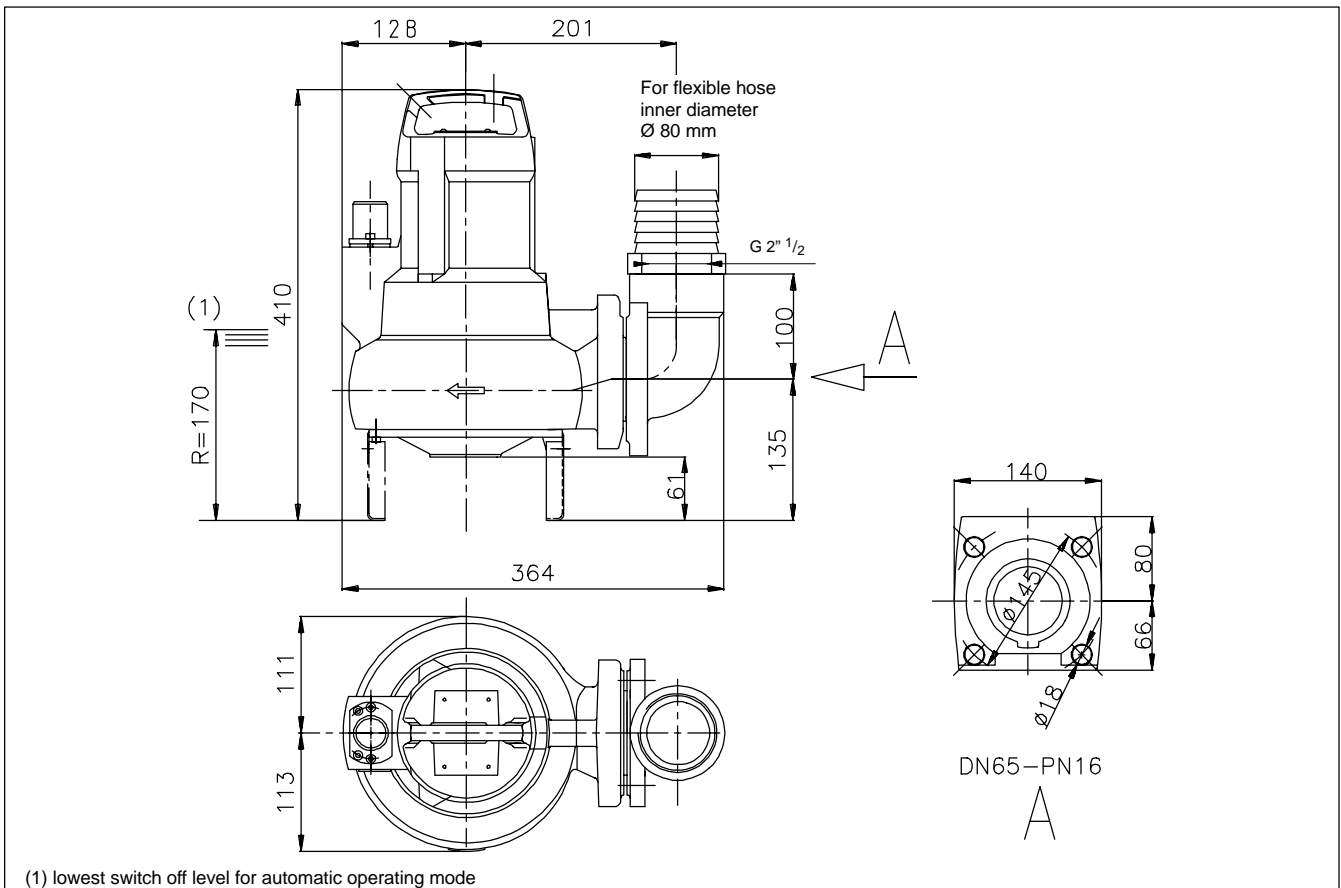
Ama<sup>®</sup>-Porter sizes 5 --

Transportable version

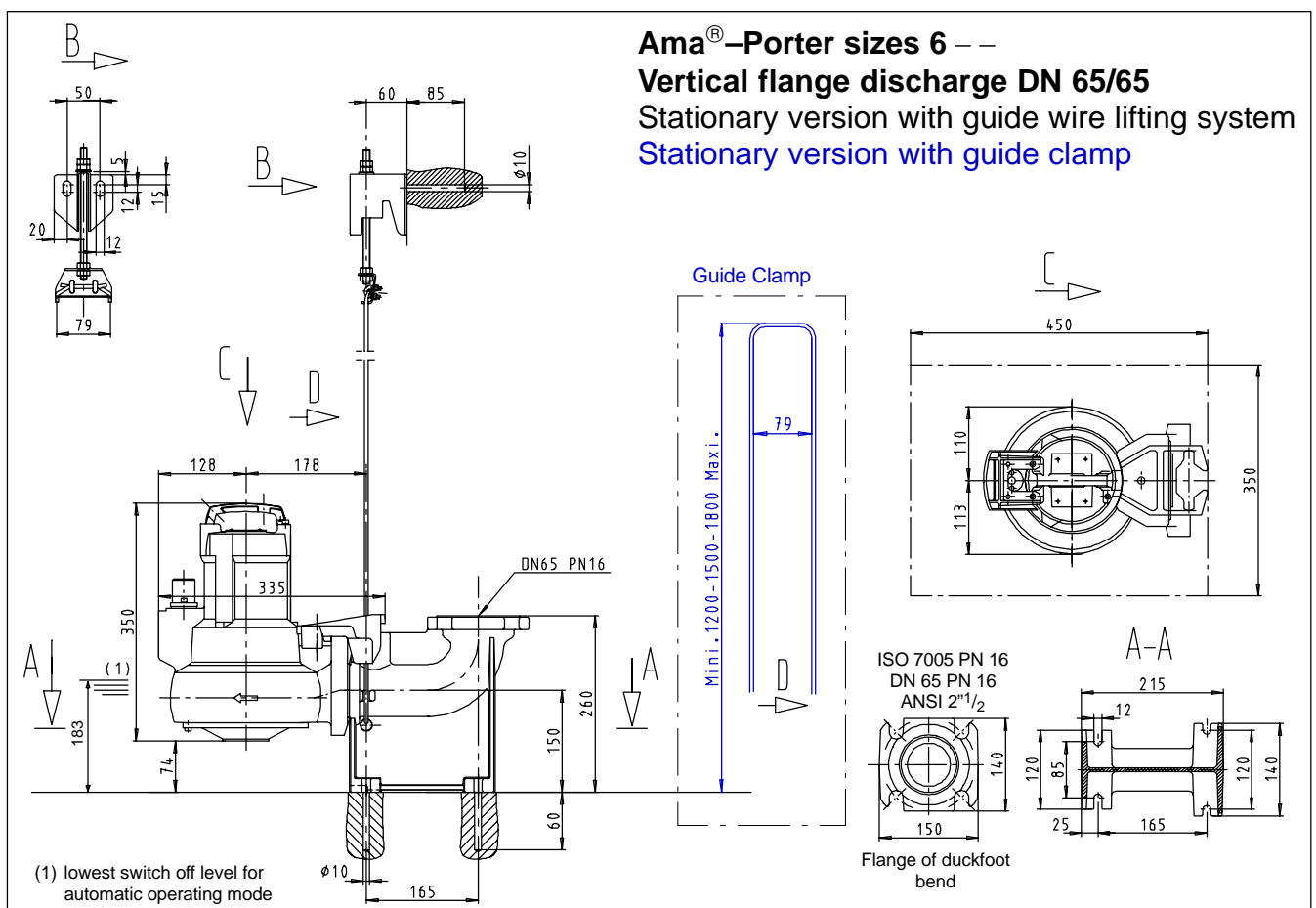
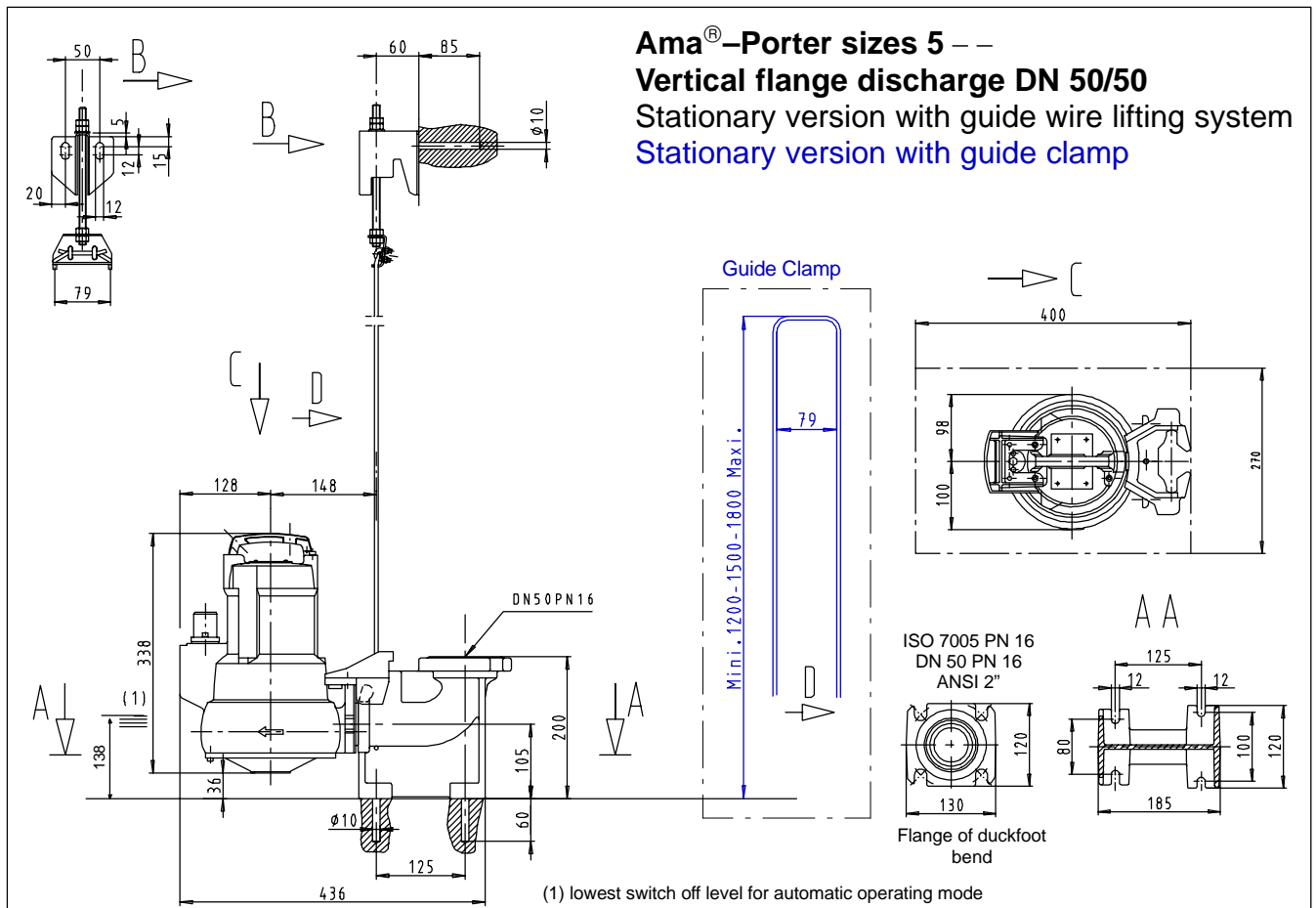


Ama<sup>®</sup>-Porter sizes 6 --

Transportable version

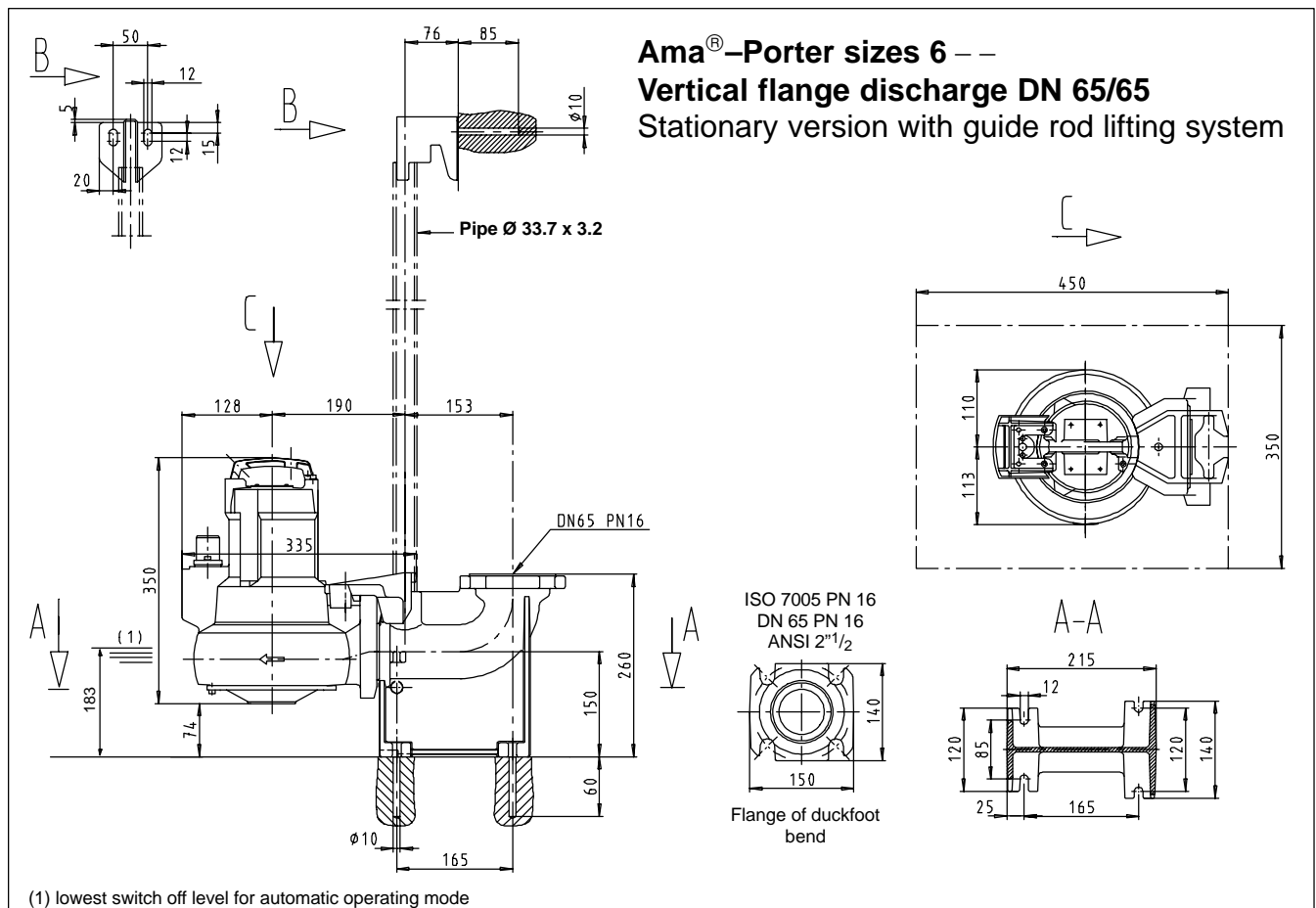
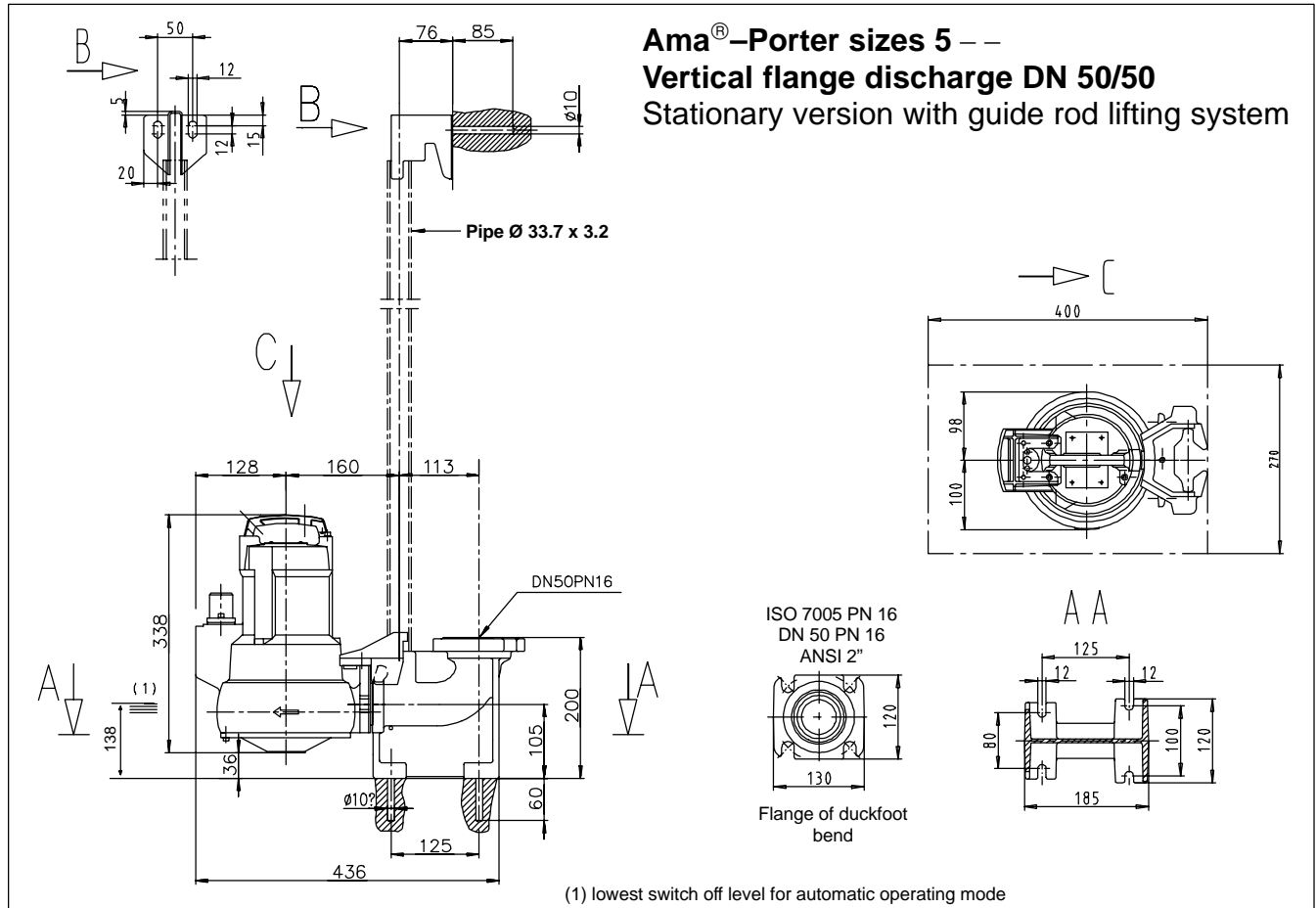


**Dimensions**

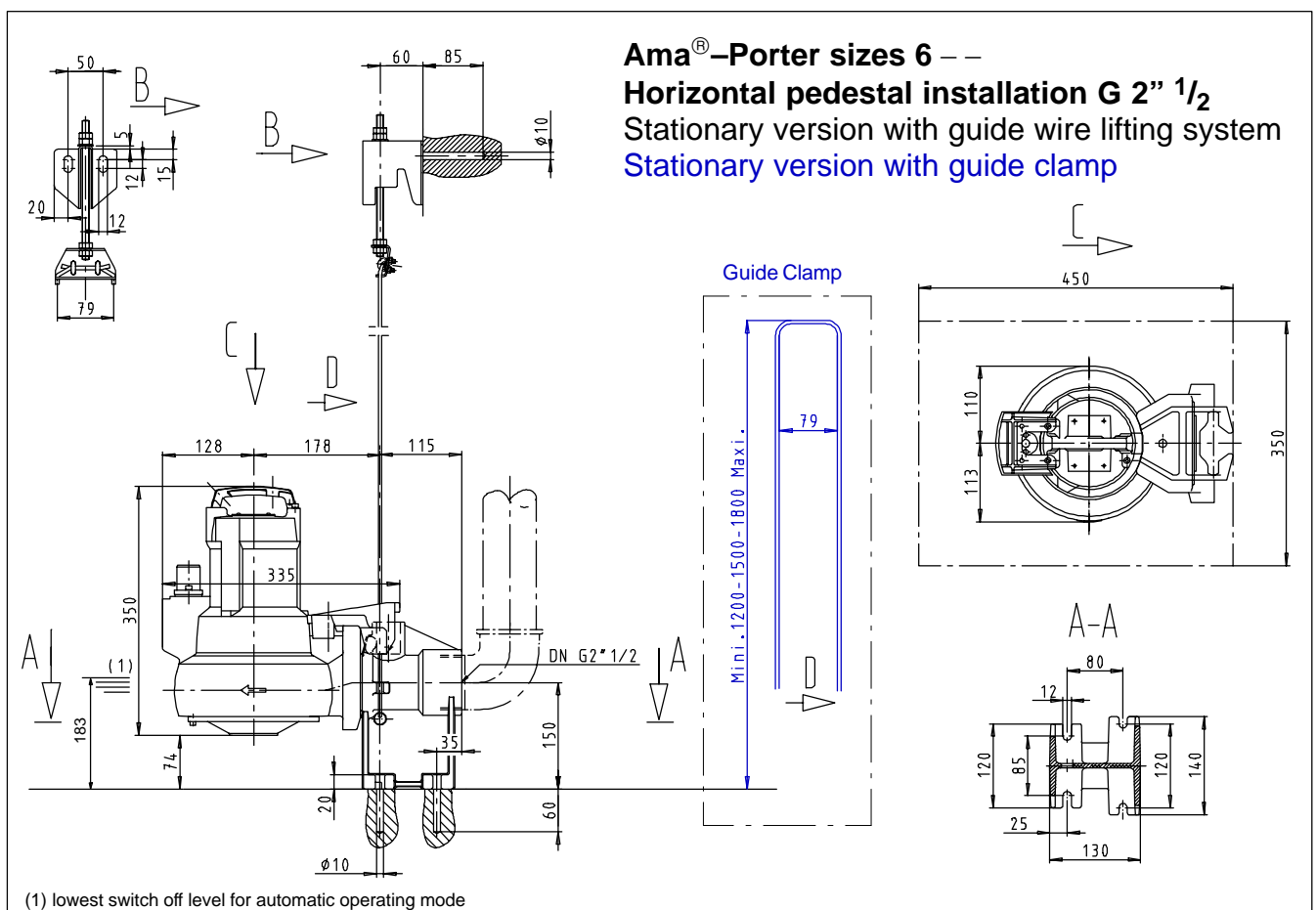
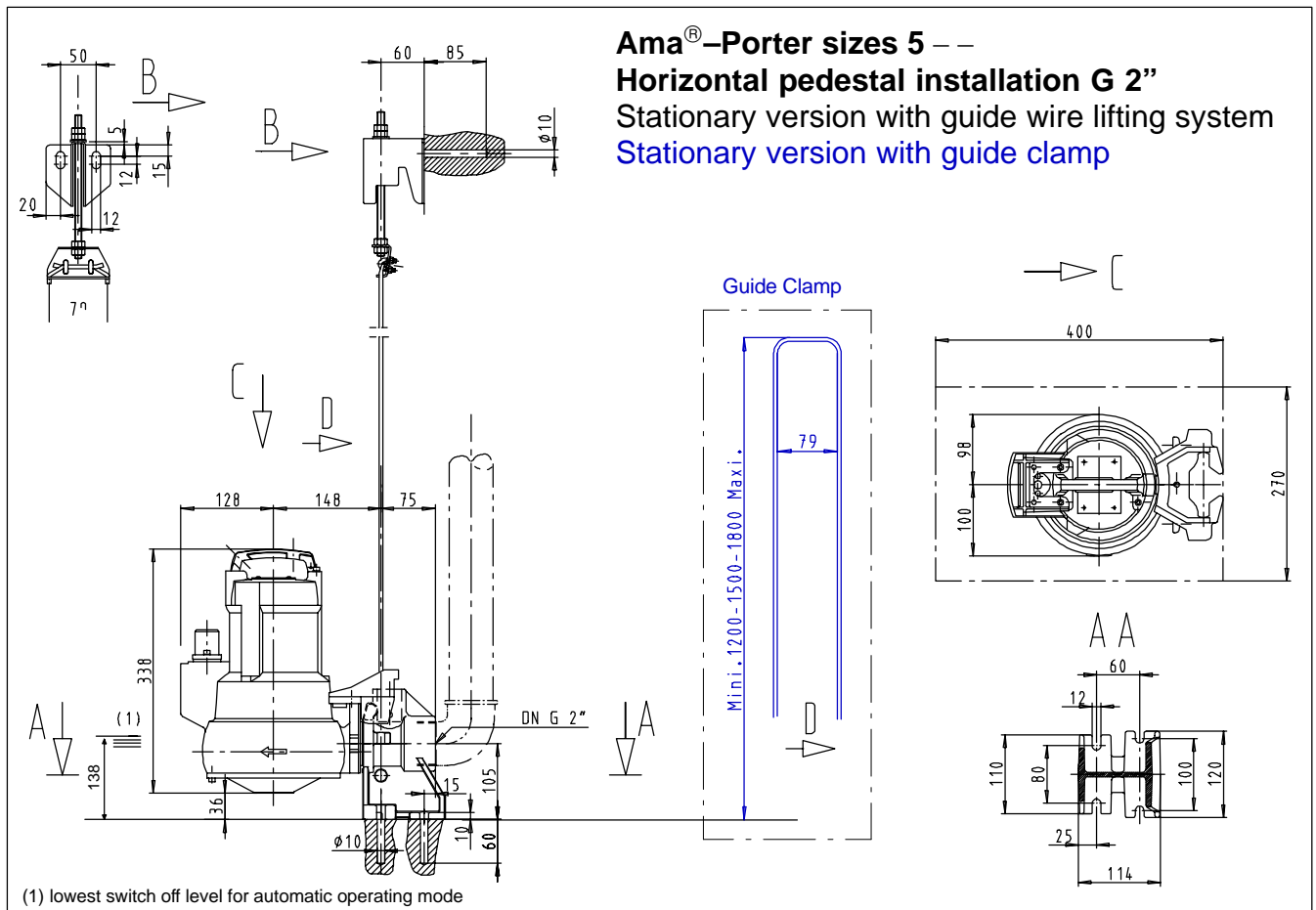




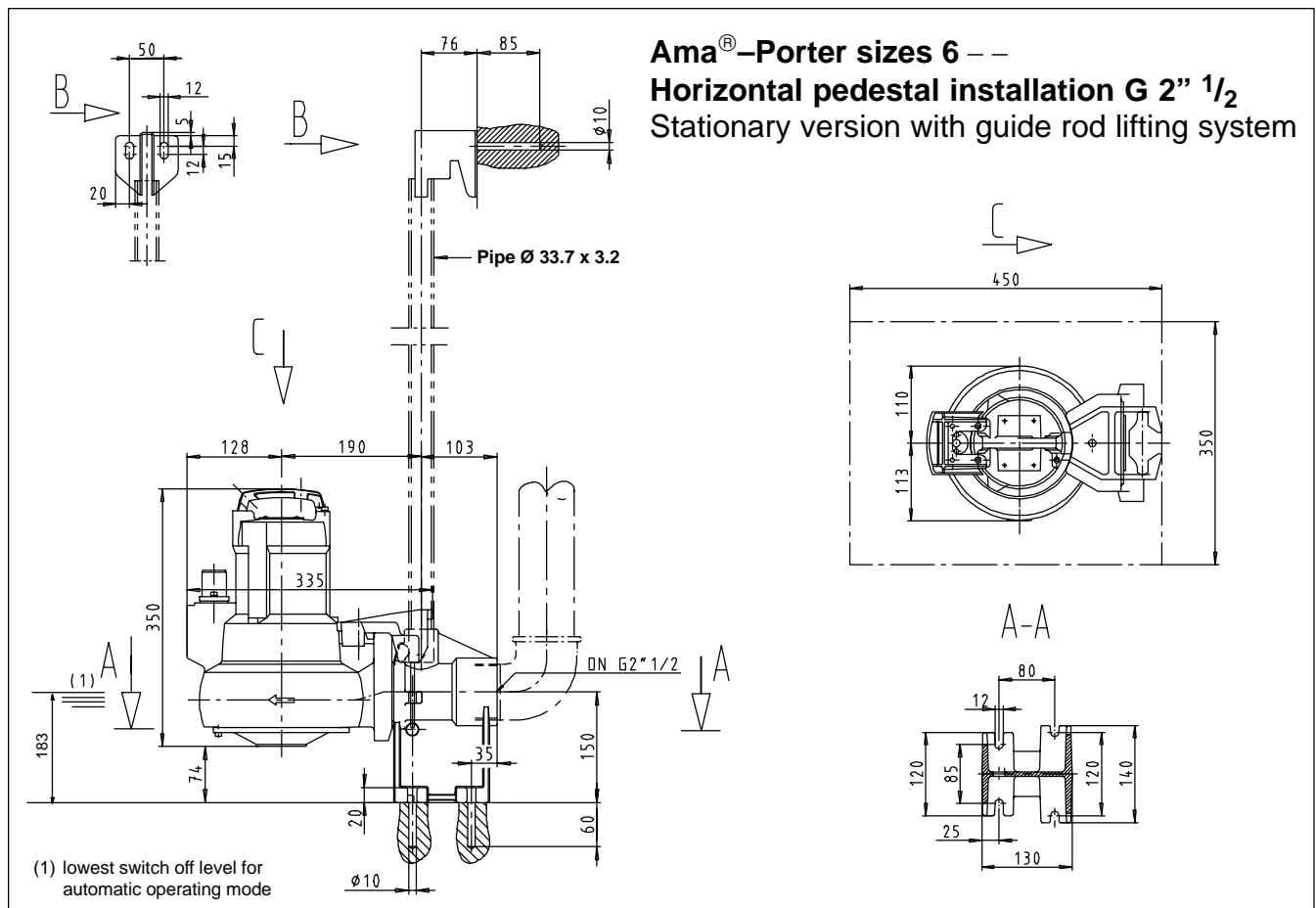
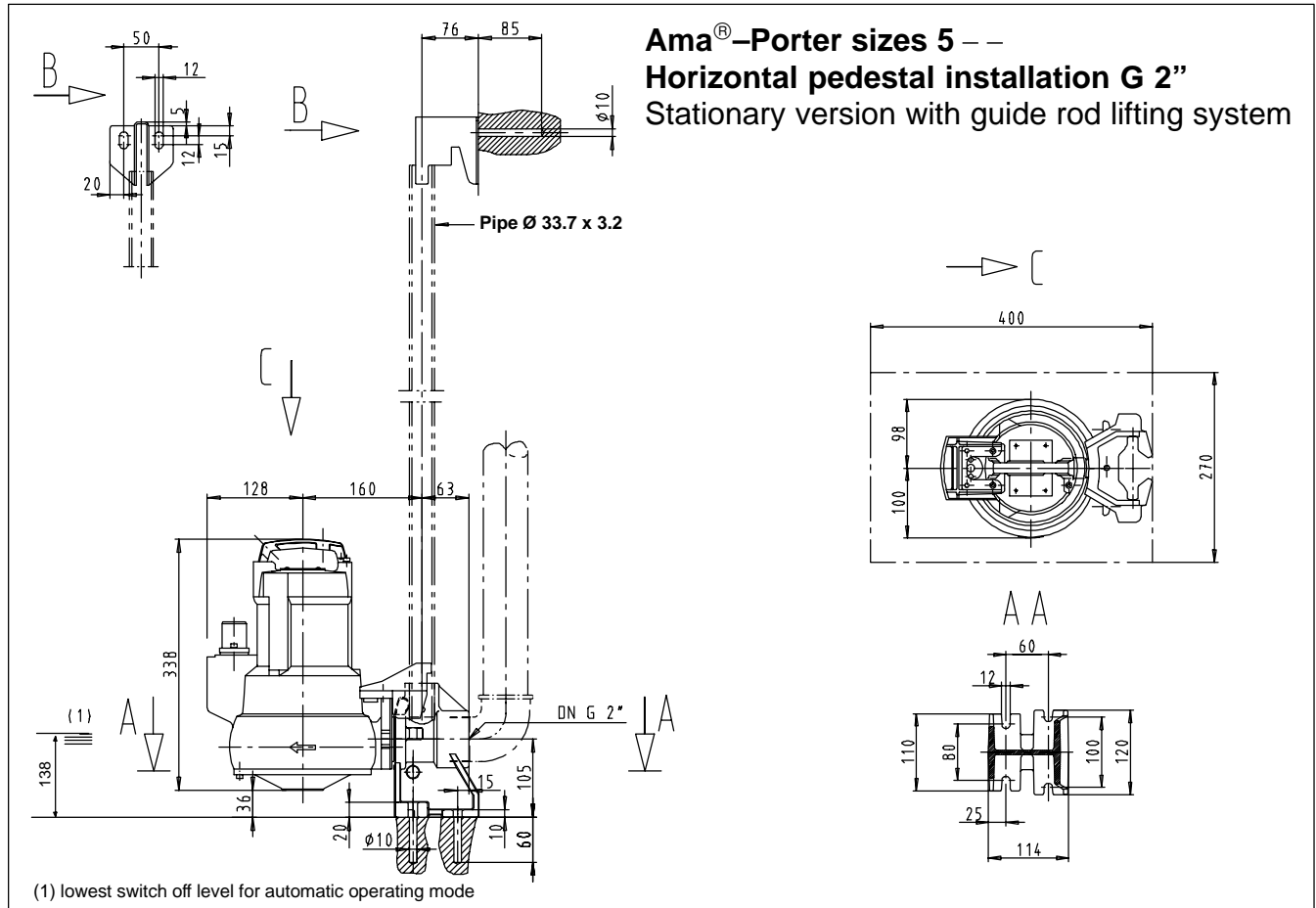
**Dimensions**



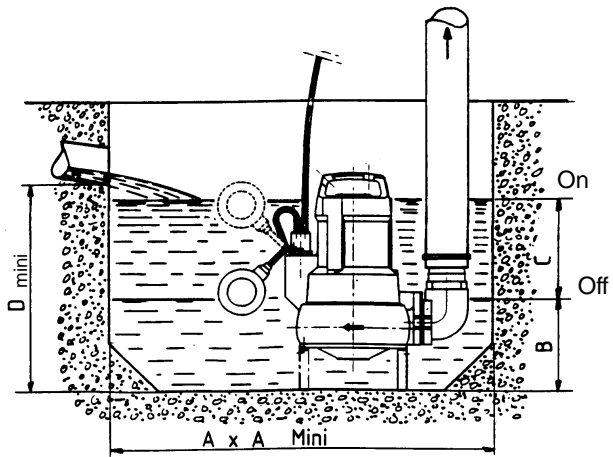
Dimensions



Dimensions



Installation in a sump



Dimensions in mm

	A	B	C	D
<b>Ama-Porter 5</b> --	600 x 600	160	190	450
<b>Ama-Porter 6</b> --	600 x 600	170	190	480



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