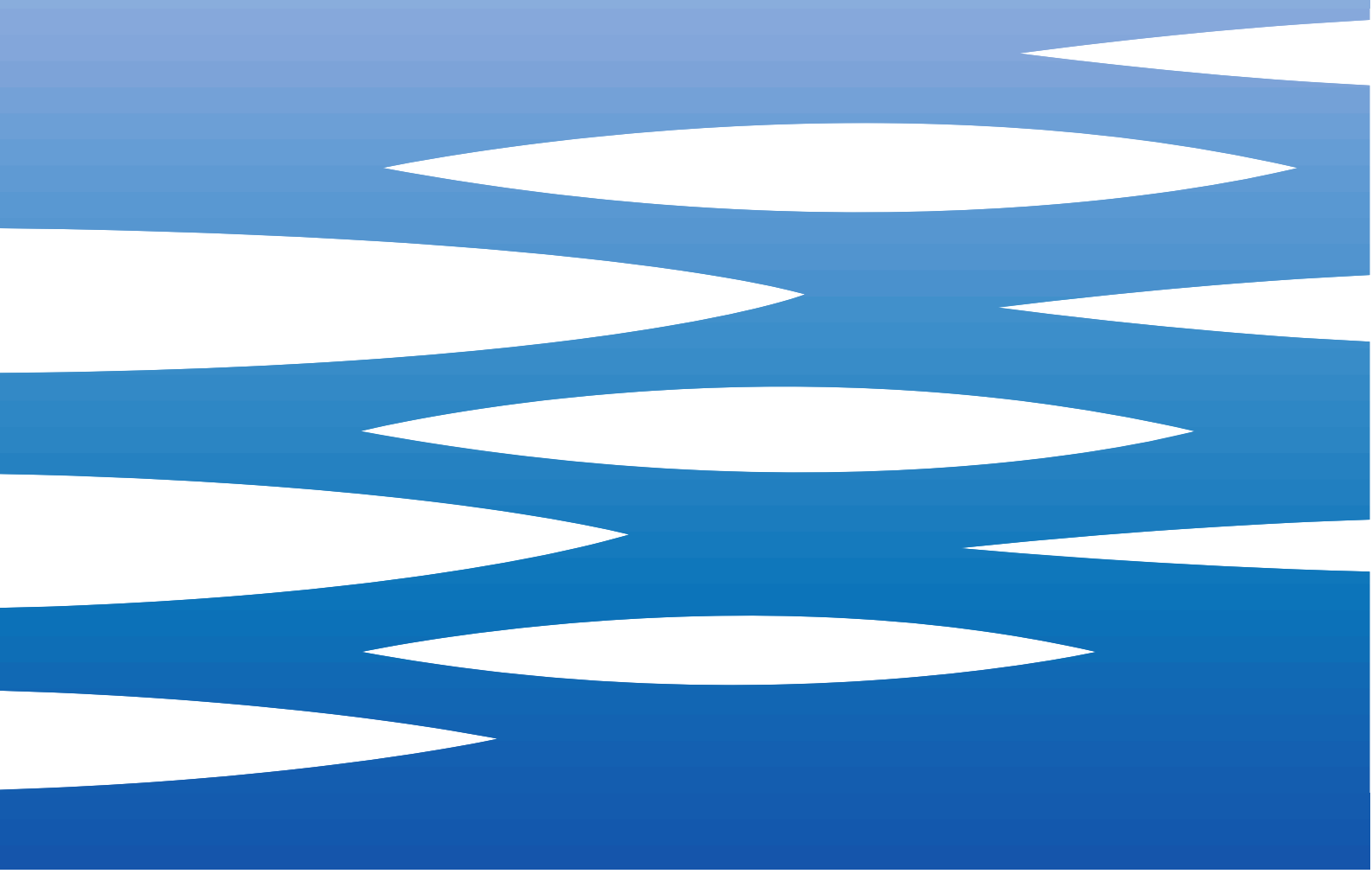




EBARA



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SPECIFICATION

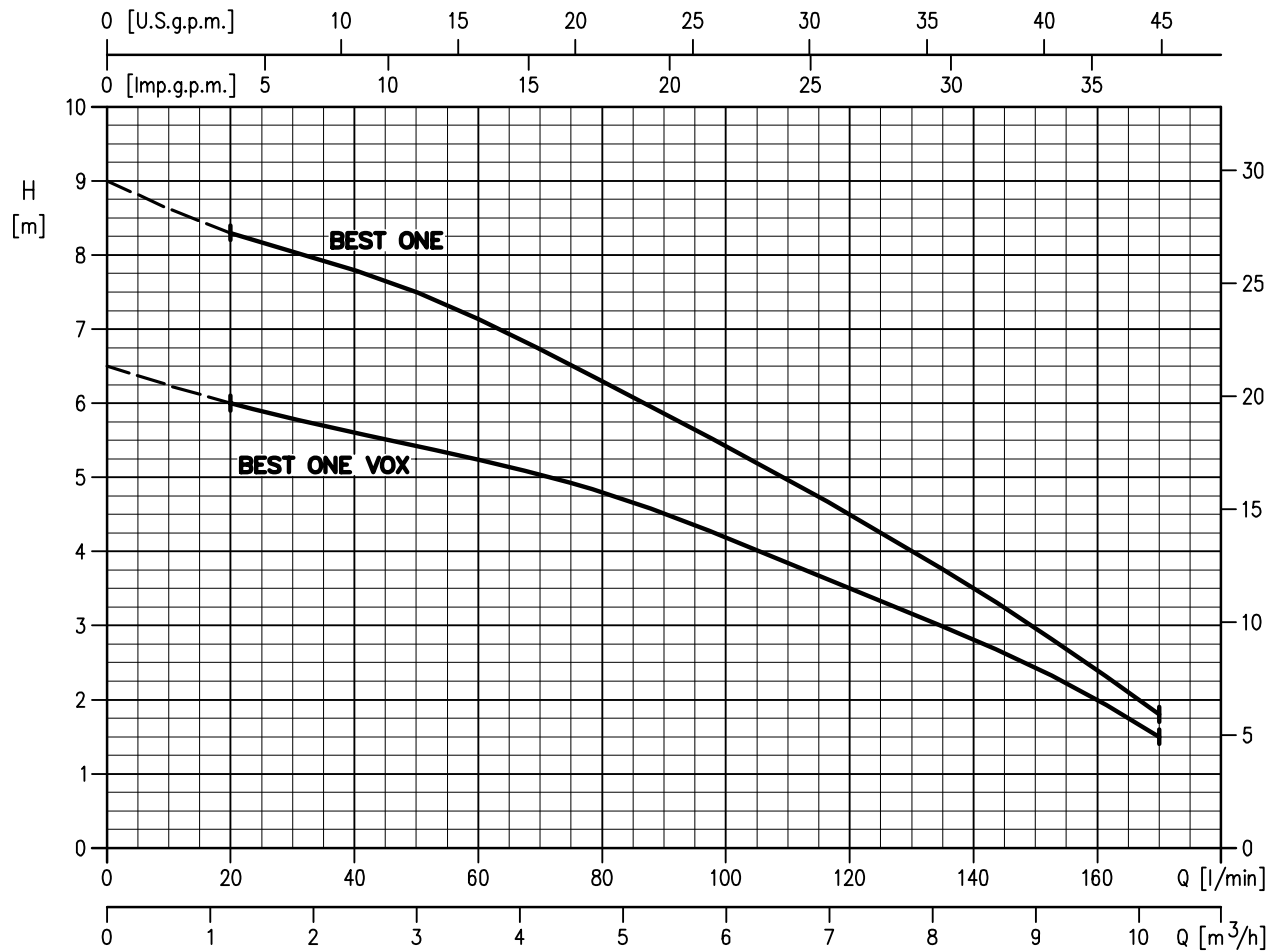
50Hz

Rev. 0

| PUMP | | |
|-----------------------------|-------------------------|---|
| Liquid Handled | Type of liquid | Clear water (Clean water for MS version) |
| | Max temperature [°C] | 50 |
| | Max solids size [mm] | 10 20 (for Vortex version) |
| Maximum immersion | [m] | 2 (with power cable length 5 m) 5 (with power cable length 10 m) |
| Construction | Impeller | Semi-open centrifugal type (BEST ONE) Vortex type (BEST ONE VOX) |
| | Shaft seal type | Oil lubricated mechanical seal (pump side) + lip seal (motor side) |
| | Bearing | Sealed ball bearing |
| Pipe Connection | Suction | Strainer |
| | Discharge nozzle [inch] | G1¼": UNI ISO 228 |
| Material | Pump casing | AISI 304 |
| | Impeller | AISI 304 |
| | Shaft seal | Mechanical seal: Ceramic/Carbon/NBR Lip seal: NBR |
| | Casing cover | AISI 304 |
| | Shaft | AISI 303 + AISI 303 ceramic coated shaft sleeve |
| | Lubricating liquid | White mineral oil: Esso Marcol 152 |
| Applicable standard of test | | ISO 9906:2012 – Grade 3B |

| MOTOR | | | |
|-------------------------------------|----------------------|--------------------------------------|---------|
| Type | Submersible dry type | | |
| | Single Phase | Three Phase | |
| No. of Poles | 2 | | |
| Rotation speed [min ⁻¹] | ≈2800 | | |
| Insulation Class | F | | |
| Protection degree | IP 68 | | |
| Power rating | [kW] | 0.25 | |
| | [HP] | 0.33 | |
| Frequency [Hz] | 50 | | |
| Voltage [V] | 230 ±10% | 400 ±10% | |
| Capacitor | Built in | - | |
| Over load protection | Built in | - | |
| Casing material | AISI 304 | | |
| Switch | float | MA version (no maintenance required) | - |
| | magnetic | MS version (maintenance required) | - |
| Float/magnetic switch cable | material | H07RN-F | - |
| | size | 3G1 | - |
| Power cable | length [m] | 5 (only for internal usage); 10 | |
| | material | H05RN-F | H07RN-F |
| | size | 3G0.75 | 4G1 |
| Cable entry | Cable Gland | | |

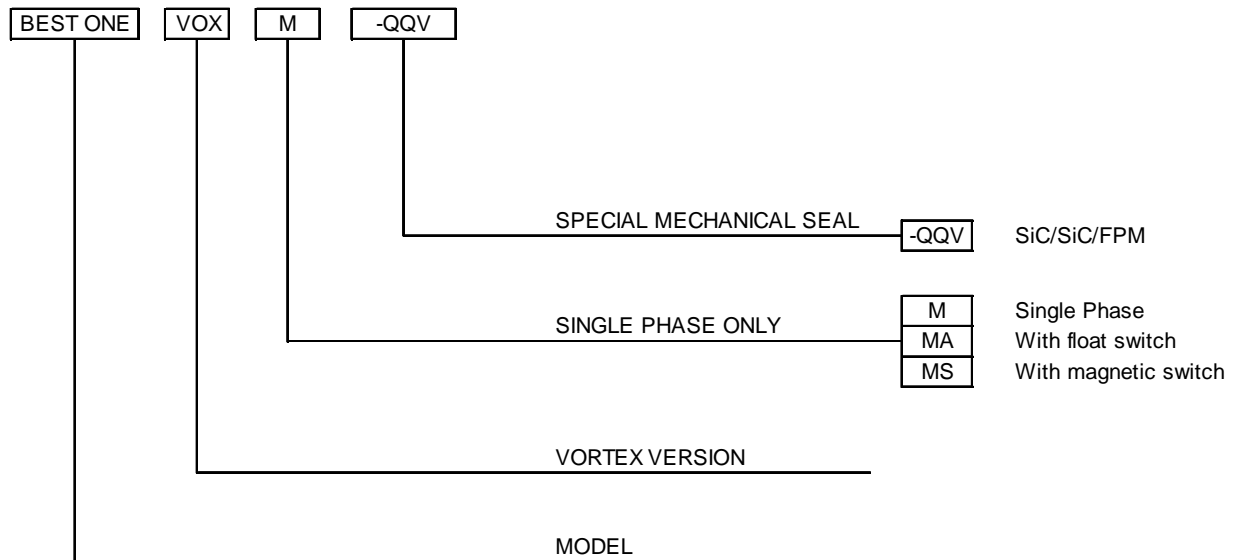
PERFORMANCE CURVE



SELECTION CHART

| Pump Type | | Power | | Q=Capacity | | | | | | | |
|-----------------------------------|--------------|-------|------|-------------------|-----|-----|-----|-----|-----|-----|------|
| Single Phase | Three Phase | [kW] | [HP] | l/min | 0 | 20 | 40 | 80 | 120 | 160 | 170 |
| | | | | m ³ /h | 0 | 1,2 | 2,4 | 4,8 | 7,2 | 9,6 | 10,2 |
| H=Total manometric head in meters | | | | | | | | | | | |
| BEST ONE M | BEST ONE | 0,25 | 0,33 | 9,0 | 8,3 | 7,8 | 6,3 | 4,5 | 2,4 | 1,8 | |
| BEST ONE VOX M | BEST ONE VOX | 0,25 | 0,33 | 6,5 | 6,0 | 5,6 | 4,8 | 3,5 | 2,0 | 1,5 | |

TYPE KEY



PERFORMANCE CURVE SPECIFICATIONS

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906:2012 – Grade 3B

The curves refer to effective speed of asynchronous motors at 50 Hz, 2 poles.

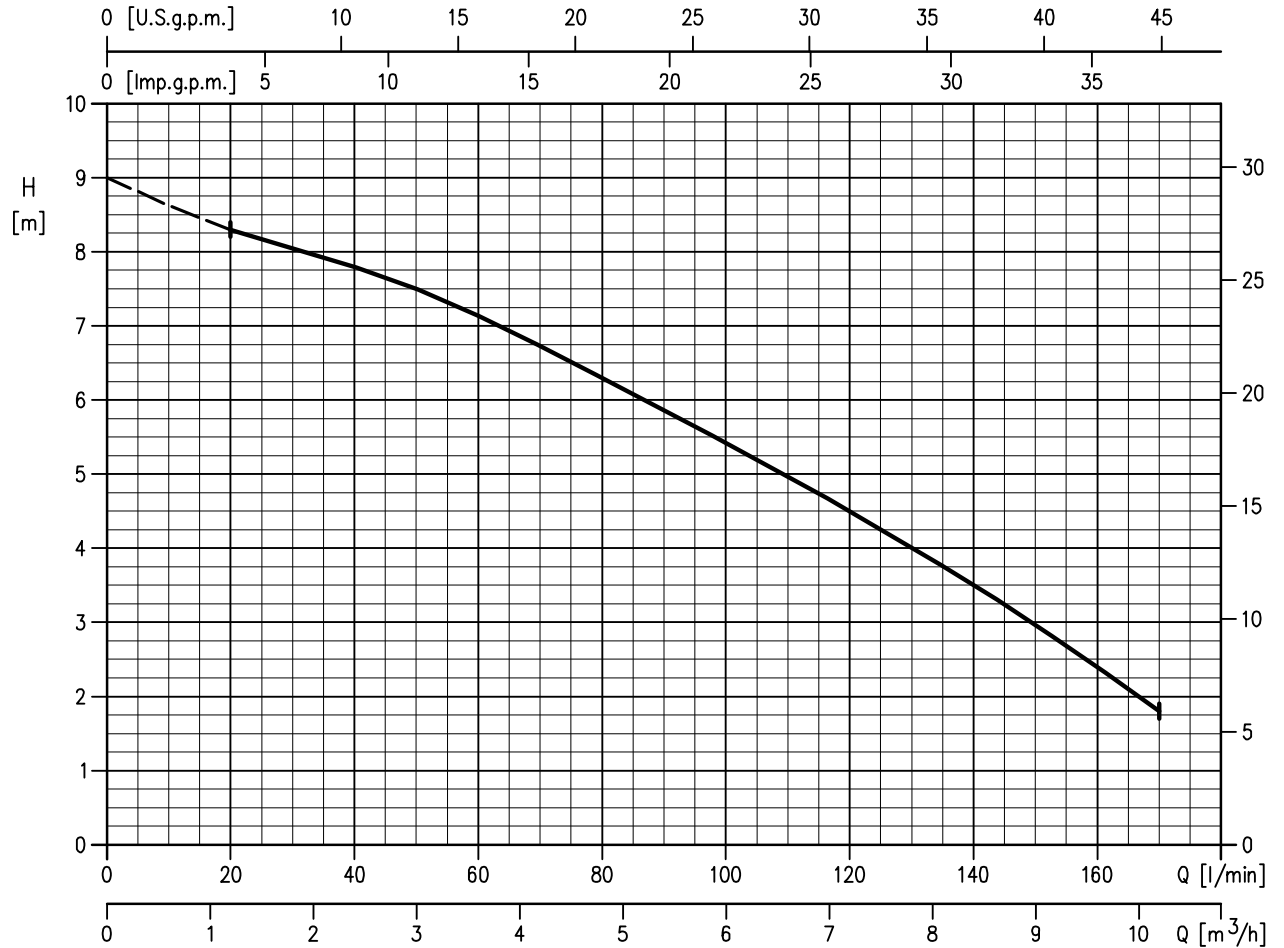
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt)

In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

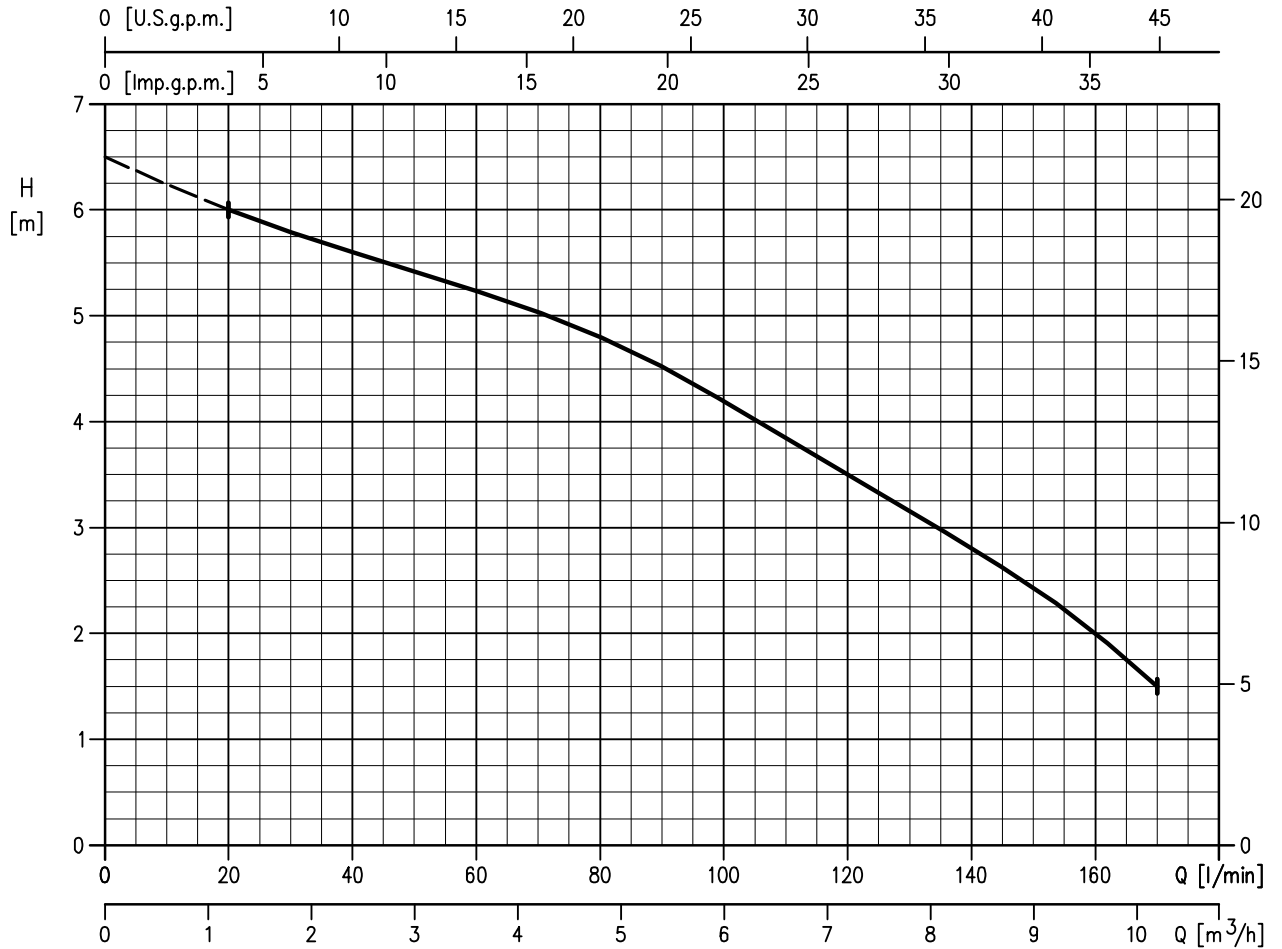
- Q = volume flow rate
- H = total head

BEST ONE (0.25 kW) – impeller diameter = 85 mm



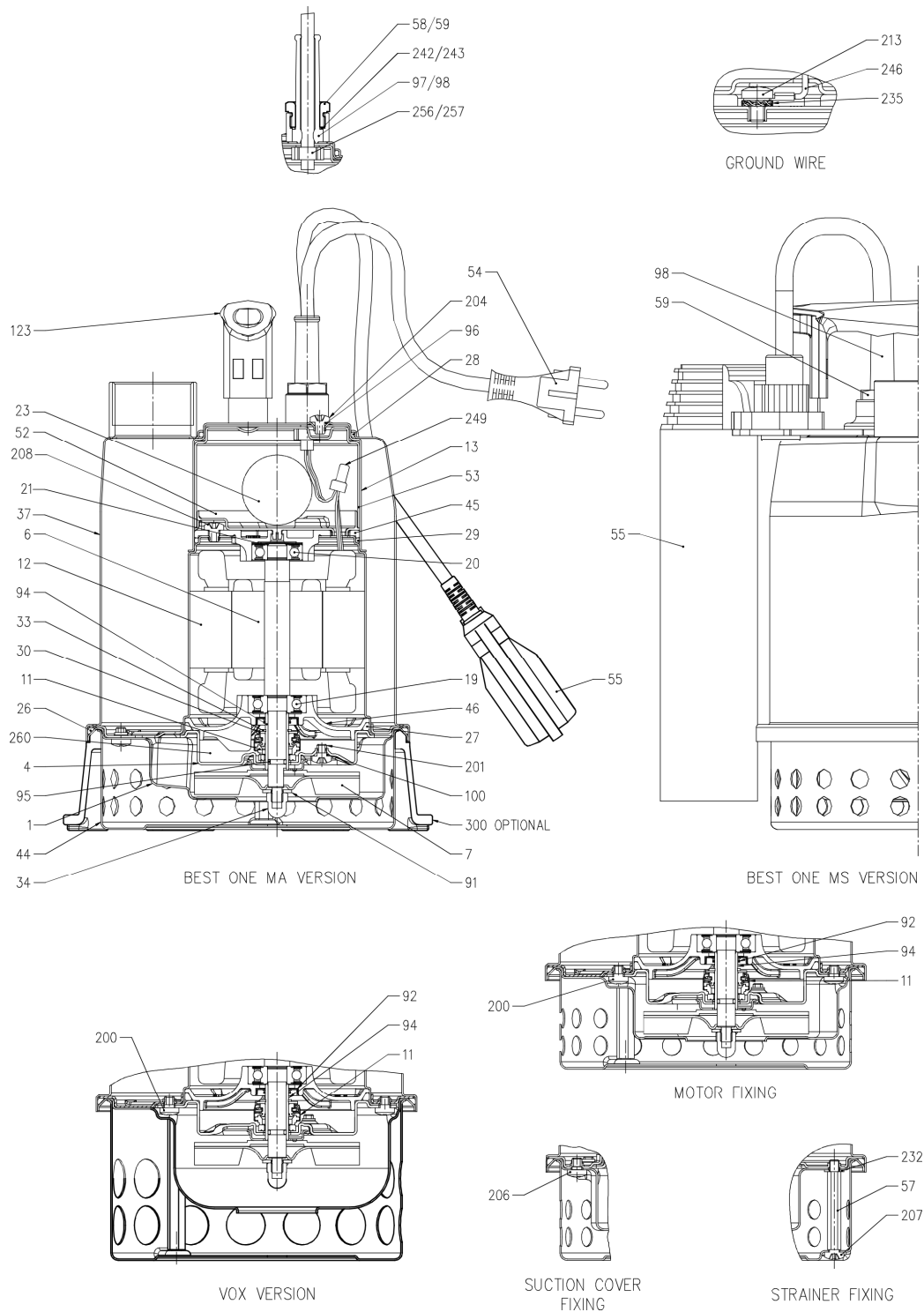
Rotation speed $\approx 2800 \text{ min}^{-1}$
Test standard: ISO 9906:2012 – Grade 3B

BEST ONE VOX (0.25 kW) – impeller diameter = 85 mm



Rotation speed $\approx 2800 \text{ min}^{-1}$
Test standard: ISO 9906:2012 – Grade 3B

SECTIONAL VIEW DRAWING



SECTIONAL VIEW TABLE

| N° | PART NAME | MATERIAL | DIMENSIONS | STANDARD | Q.TY |
|-----|----------------------------|---------------------------------------|-------------|----------|-------|
| 1 | Suction cover | EN 14301(AISI 304) | - | - | 1 |
| 4 | Casing cover | EN 14301(AISI 304) | - | - | 1 |
| 6 | Shaft with rotor | EN 14305 (AISI 303) | - | - | 1 |
| 7 | Impeller | EN 14301(AISI 304) | - | - | 1 |
| 11 | Mechanical seal [1] | [1] | [1] | - | 1 |
| 12 | Motor frame with stator | EN 14301(AISI 304) | - | - | 1 |
| 13 | Motor cover | EN 14301(AISI 304) | - | - | 1 |
| 19 | Lower ball bearing | - | - | - | 1 |
| 20 | Upper ball bearing | - | - | - | 1 |
| 21 | Adjusting ring | - | - | - | 1 |
| 23 | Capacitor [2] | - | - | - | 1 |
| 26 | O-ring | NBR | 159,5x3 | - | 1 |
| 27 | O-ring | NBR | 88,5x3,53 | - | 1 |
| 28 | O-ring | NBR | 75,87x2,62 | - | 1 |
| 29 | O-ring | NBR | 75,87x2,62 | - | 1 |
| 30 | Washer | EN 14301(AISI 304) | 12x2x1 | - | 1 |
| 33 | Seeger ring | Carbon steel TC80 | 12 | UNI 7435 | 1 |
| 34 | Impeller nut | A2 - 70 UNI 7323 | M 6 | UNI 5721 | 1 |
| 37 | Pump casing | EN 14301(AISI 304) | - | - | 1 |
| 44 | Strainer | EN 14301(AISI 304) | - | - | 1 |
| 45 | Upper bearing housing | EN 1706 AC-46000 D | - | - | 1 |
| 46 | Lower bearing housing | EN 1706 AC-46000 D | - | - | 1 |
| 52 | Terminal insulating base | PA 6 class V-0 | - | - | 1 |
| 53 | Terminal insulating box | PA 6 class V-0 | - | - | 1 |
| 54 | Power cable | - | - | - | 1 |
| 55 | Switch [3] [4] | - | - | - | 1 |
| 57 | Spacer | EN 14301(AISI 304) | - | - | 2 |
| 58 | Power cable connector | OT 58 UNI 5705-65 Nickel-plated Brass | - | - | 1 |
| 59 | Switch cable connector [3] | OT 58 UNI 5705-65 Nickel-plated Brass | - | - | 1 |
| 91 | Washer | EN 14301(AISI 304) | - | - | 1 |
| 92 | Lip seal | NBR | 22x12x4 | - | 1 |
| 94 | Shaft sleeve | EN 14305 (AISI 303) ceramic coated | - | - | 1 |
| 95 | O-ring | NBR | 6,07x1,78 | - | 1 |
| 96 | O-ring | NBR | 4,48x1,78 | - | 1 |
| 97 | Power cable connector | NBR | - | - | 1 |
| 98 | Switch cable connector [3] | NBR | - | - | 1 |
| 100 | O-ring | NBR | 4,48x1,78 | - | 1 |
| 123 | Handle | PP | - | - | 1 |
| 200 | Screw | A2 - 70 UNI 7323 | M 5x6 | UNI 7687 | 4 |
| 201 | Screw | A2 - 70 UNI 7323 | M 5x6 | UNI 7687 | 1 |
| 204 | Screw | A2 - 70 UNI 7323 | M 5x6 | UNI 7687 | 1 |
| 206 | Screw | A2 - 70 UNI 7323 | M 5x6 | UNI 7687 | 3 |
| 207 | Screw | A2 - 70 UNI 7323 | M 5x6 | UNI 7687 | 2 |
| 208 | Screw | A2 - 70 UNI 7323 | M 5x6 | UNI 7687 | 3 |
| 213 | Screw | A2 - 70 UNI 7323 | M 4x6 | UNI 7687 | 1 |
| 232 | Washer | PA 6 | 5,5x10x1 | - | 1 |
| 235 | Washer | Zinked Steel | 4 | UNI 8842 | 1 |
| 242 | Washer | EN 14301(AISI 304) | 13,4x15,9x1 | - | 1 |
| 243 | Washer [3] | EN 14301(AISI 304) | 13,4x15,9x1 | - | 1 |
| 246 | Ground wire | - | - | - | 1 |
| 256 | Strain relief | - | - | - | 1 |
| 257 | Strain relief [3] | - | - | - | 1 |
| 260 | Oil | Esso Marcol 152 | - | - | 40 cc |
| 300 | Minimum suction system [5] | Thermoplastic elastomer vulcanizate | - | - | - |

[1] See Mechanical Seal table at page.302

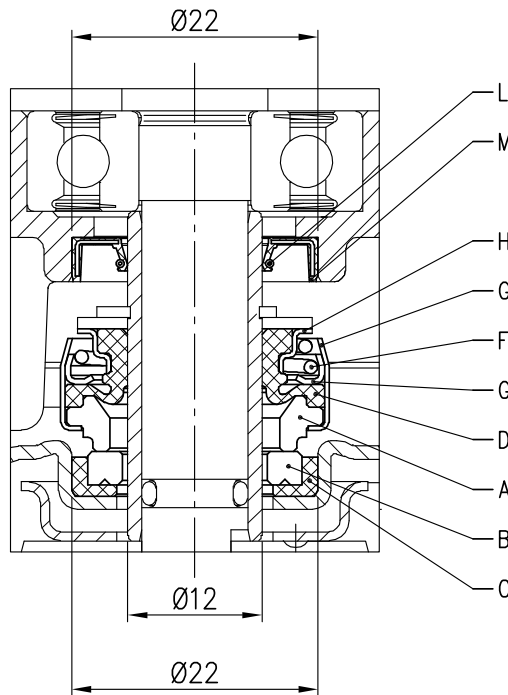
[2] Only for single phase
[3] Only for switch version

[4] It could be float or magnetic type
[5] See pag.700 (OPTIONAL)

BEARINGS

| Type pumps | | Ball Bearing | |
|--------------|-------------|--------------|------------|
| Single Phase | Three Phase | Lower side | Upper side |
| BEST ONE M | BEST ONE | 6200 ZZ C3 | 6000 ZZ C3 |

MECHANICAL SEAL



| REF | PART NAME | MATERIAL standard | MATERIAL QQV |
|-----|----------------------|----------------------|--------------|
| A | Rotary seal ring | Carbon graphite | SiC |
| B | Stationary seal ring | Ceramic | SiC - Q6 (*) |
| C | Gasket | NBR | FPM |
| D | Bellows | NBR | FPM |
| F | Self driving spring | EN 1.4301 (AISI 304) | |
| G | Frame | EN 1.4301 (AISI 304) | |
| H | Retainer ring | EN 1.4301 (AISI 304) | |
| L | Spring | EN 1.4318 (AISI 302) | |
| M | Lip | NBR | |

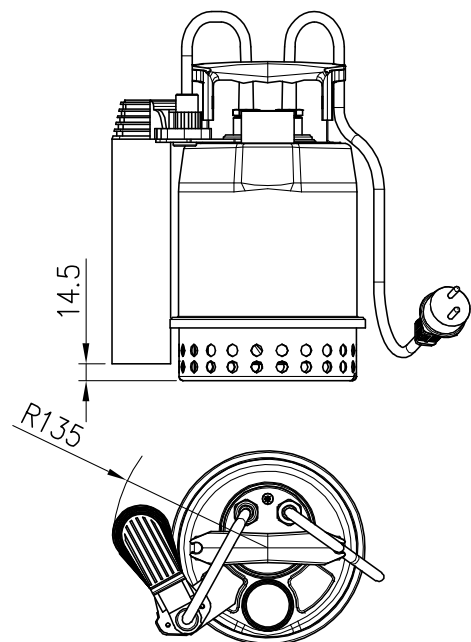
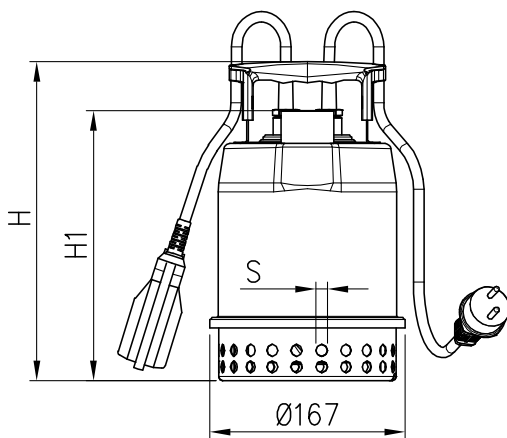
(*) Special grade of SiC with microporosities filled with graphite

(**) Only for model BEST ONE VOX MA

PUMP

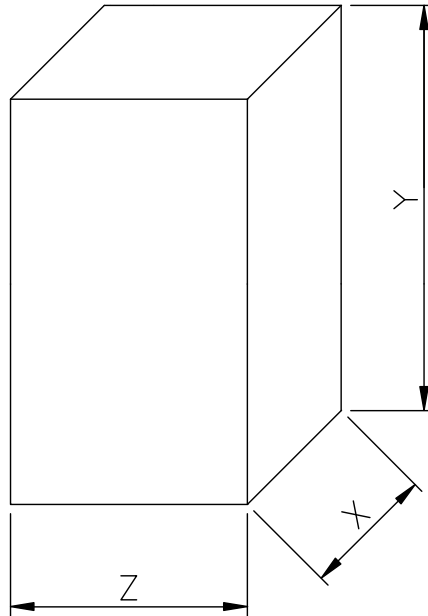
**BEST ONE MA
BEST ONE VOX MA**

BEST ONE MS



| Pump Type | Dimensions [mm] | | | Weight [kgf] |
|-----------------|-----------------|-----|----|--------------|
| | H | H1 | S | |
| BEST ONE | 273 | 231 | 10 | 4.3 |
| BEST ONE M | | | | 4.4 |
| BEST ONE MA | | | | 4.6 |
| BEST ONE MS | | | | 4.8 |
| BEST ONE VOX | 304 | 262 | 20 | 4.4 |
| BEST ONE VOX M | | | | 4.5 |
| BEST ONE VOX MA | | | | 4.7 |

PACKING



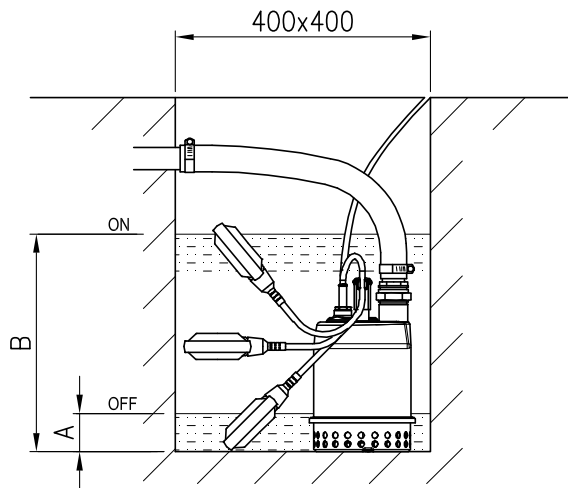
| Pump Type | Dimensions [mm] | | | Weight [kgf] |
|----------------|-----------------|-----|-----|--------------|
| | X | Y | Z | |
| BEST ONE | 180 | 330 | 220 | 4.8 |
| BEST ONE M | | | | 4.9 |
| BEST ONE MA | | | | 5.1 |
| BEST ONE MS | | | | 5.3 |
| BEST ONE VOX | | | | 4.9 |
| BEST ONE VOXM | | | | 5.0 |
| BEST ONE VOXMA | | | | 5.2 |

MOTOR DATA

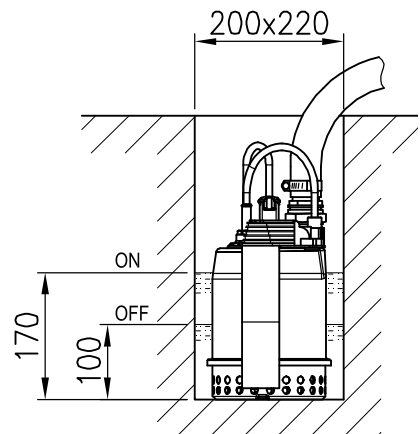
| Pump Type | | Power | | Capacitor Single Phase | | Input [kW] | | Full load current [A] | | Locked rotor current [A] | |
|----------------|--------------|-------|------|---------------------------|------|-----------------|----------------|--------------------------|-------------|-----------------------------|-------------|
| Single Phase | Three Phase | [kW] | [HP] | [μF] | [Vc] | Single Phase | Three Phase | Single Phase | Three Phase | Single Phase | Three Phase |
| BEST ONE M | BEST ONE | 0.25 | 0.33 | 8 | 450 | 0.51 | 0.47 | 2.3 | 0.8 | 5.8 | 2.7 |
| BEST ONE VOX M | BEST ONE VOX | 0.25 | 0.33 | 8 | 450 | 0.50 | 0.44 | 2.2 | 0.8 | 5.6 | 2.7 |

INSTALLATION

**BEST ONE MA
BEST ONE VOX MA
(With float switch)**

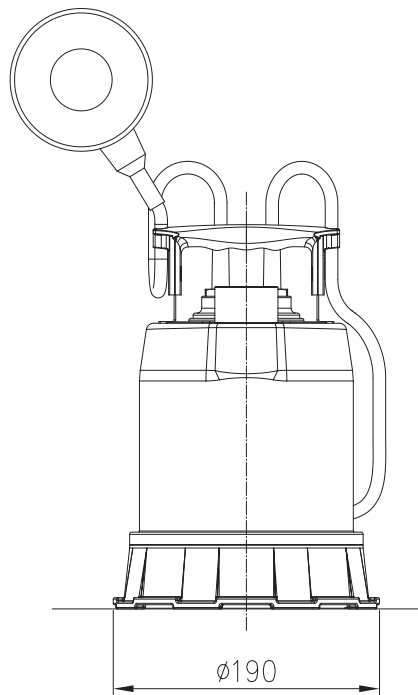


**BEST ONE MS
(With magnetic switch)**



| Pump Type | A | B |
|----------------|-----|-----|
| BEST ONE MA | 110 | 305 |
| BEST ONE VOXMA | | 330 |

MINIMUM SUCTION SYSTEM



| LEVEL | |
|----------------------------------|-------|
| Minimum starting suction level | 10 mm |
| Minimum suction level capability | 3 mm |

| COMPATIBILITY | | | | |
|---------------|---------|----|----|----|
| Type pumps | Version | | | |
| | 1~ | | | 3~ |
| | M | MA | MS | |
| BEST ONE | ✓ | ✓ | ✗ | ✓ |
| BEST ONE VOX | ✗ | ✗ | * | ✗ |

* This model don't exist