



EBARA

| | Page |
|---|------|
| - SPECIFICATIONS | 200 |
| SELECTION CHART | 201 |
| TYPE KEY | 202 |
| CURVE SPECIFICATIONS | 203 |
| PERFORMANCE CHART BEST ONE | 204 |
| PERFORMANCE CHART BEST ONE VOX | 205 |
| | |
| - CONSTRUCTIONS | 300 |
| SECTIONAL VIEW DRAWING | 300 |
| SECTIONAL VIEW TABLE | 301 |
| BEARINGS | 302 |
| MECHANICAL SEAL | 303 |
| SINGLE PHASE DIAGRAM AND ELECTRIC CONNECTIONS | 304 |
| THREE PHASE DIAGRAM AND ELECTRIC CONNECTIONS | 305 |
| | |
| - INSTALLATION | 400 |
| | |
| - DIMENSIONS AND WEIGHT | 500 |
| PUMP | 500 |
| PACKING | 501 |
| | |
| - TECHNICAL DATA | 600 |
| | |
| - OPTIONAL | 700 |
| MINIMUM SUCTION SYSTEM | 700 |

SUBMERSIBLE SUMP PUMPS

BEST ONE

SPECIFICATION

50Hz

| 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] | | 5 |
| 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 – Annex A |

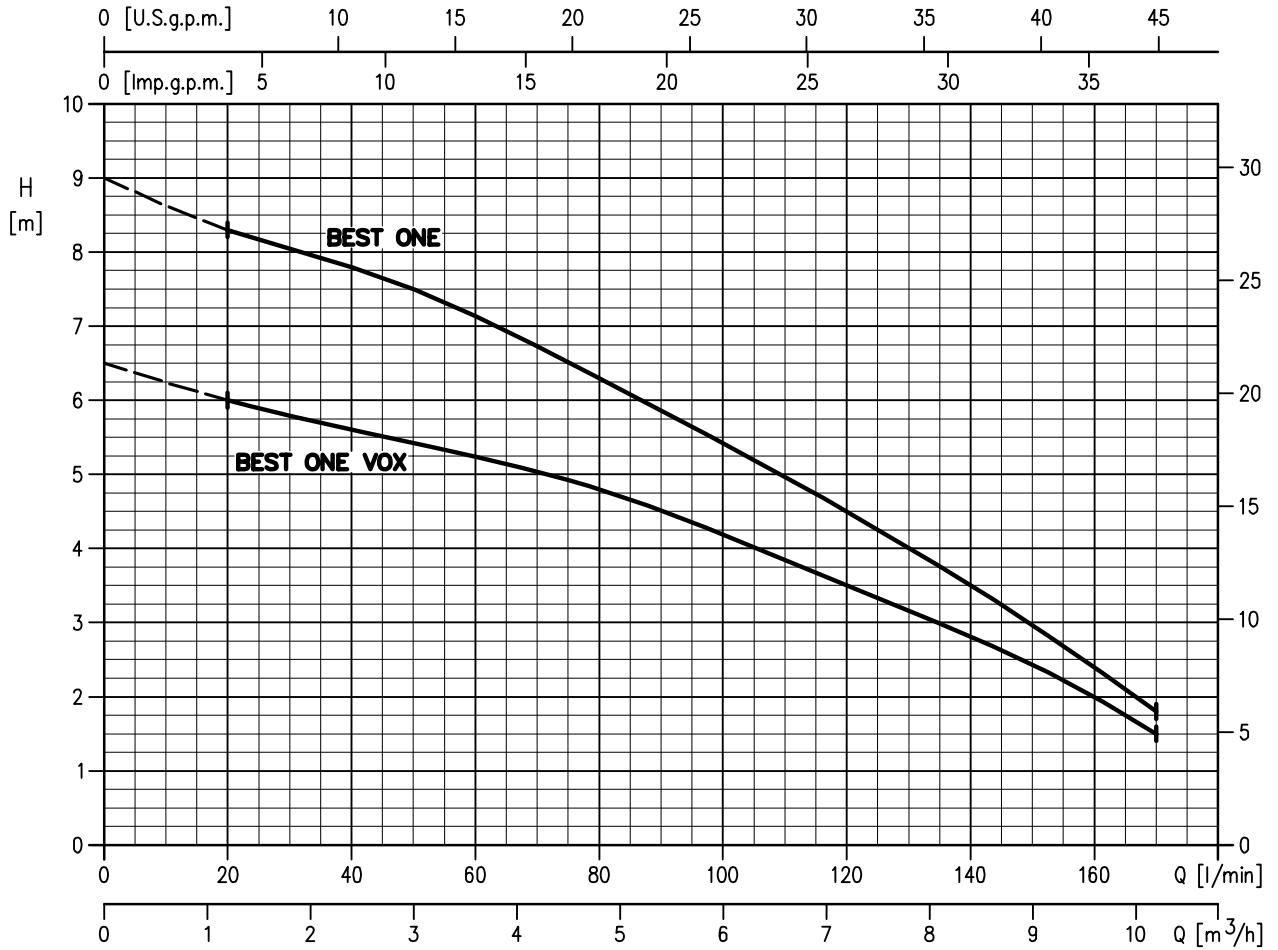
| MOTOR | | | |
|-------------------------------------|----------------------|--------------------------------------|---------|
| Type | Submersible dry type | | |
| | Single Phase | Three Phase | |
| No. of Poles | 2 | | |
| Rotation speed [min ⁻¹] | ≈2800 | | |
| Insulation Class | F | | |
| Protection 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) | |
| | material | H05RN-F | H07RN-F |
| | size | 3G0.75 | 4G1 |
| Cable entry | Cable Gland | | |

SUBMERSIBLE SUMP PUMPS

BEST ONE

SELECTION CHART

50Hz



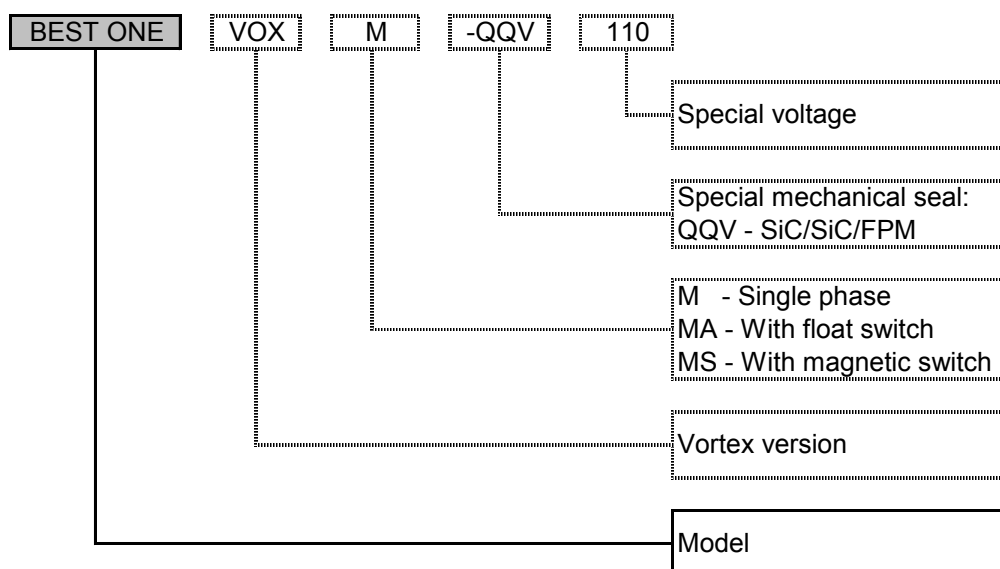
| Type pumps | | Power | | Q=Capacity | | | | | | |
|-----------------------------------|--------------|-------|------|---------------------|-----|-----|-----|-----|-----|------|
| Single Phase | Three Phase | kW | HP | l/min 0 | 20 | 40 | 80 | 120 | 160 | 170 |
| | | | | m ³ /h 0 | 1,2 | 2,4 | 4,8 | 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 |

SUBMERSIBLE SUMP PUMPS

BEST ONE

TYPE KEY

50Hz



Curve specifications

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

Tolerances according to ISO 9906 Annex A

The curves refer to effective speed of asynchronous motors at 50 Hz

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

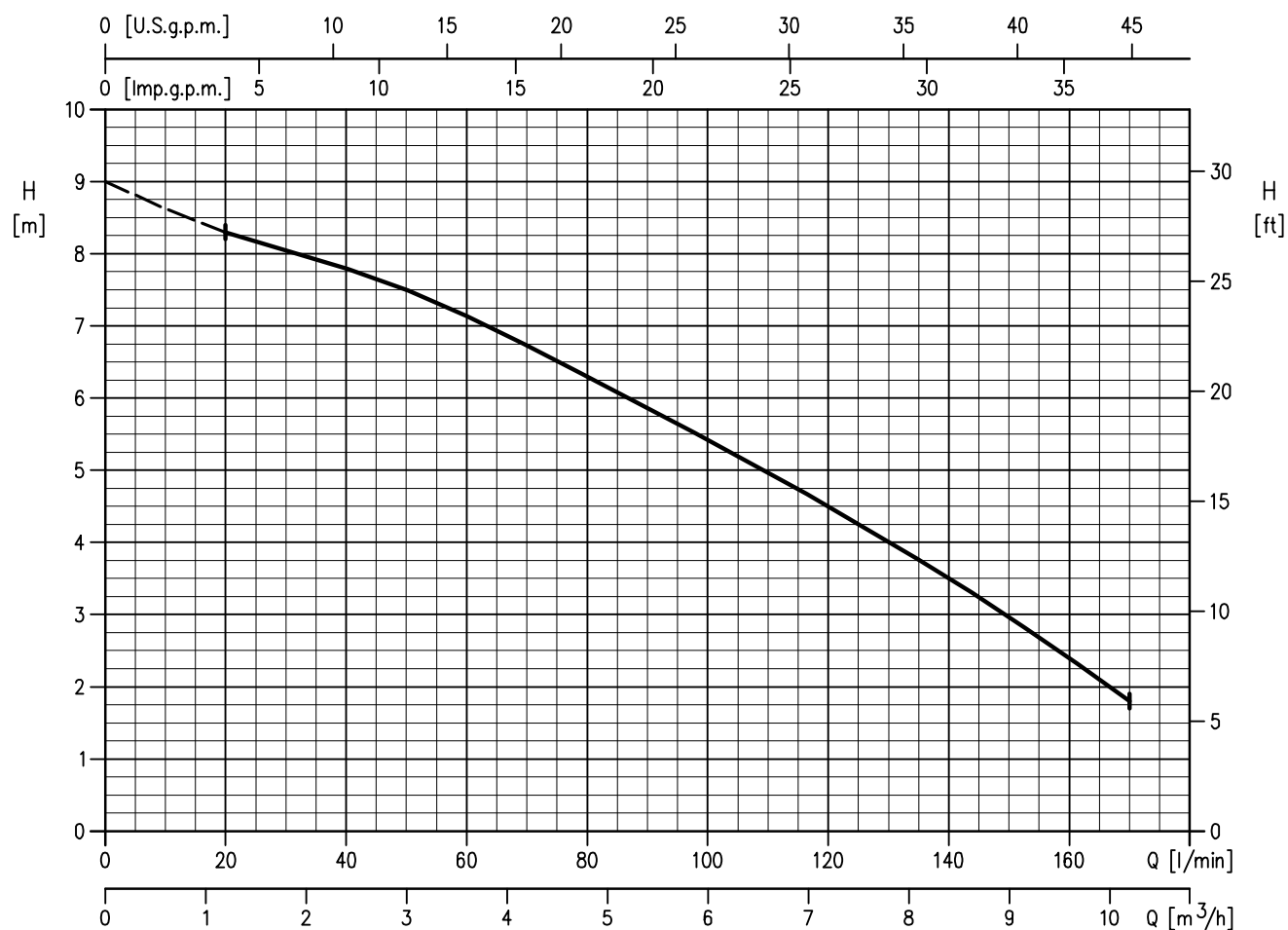
H = total head

SUBMERSIBLE SUMP PUMPS

BEST ONE

PERFORMANCE CURVE

50Hz

BEST ONE

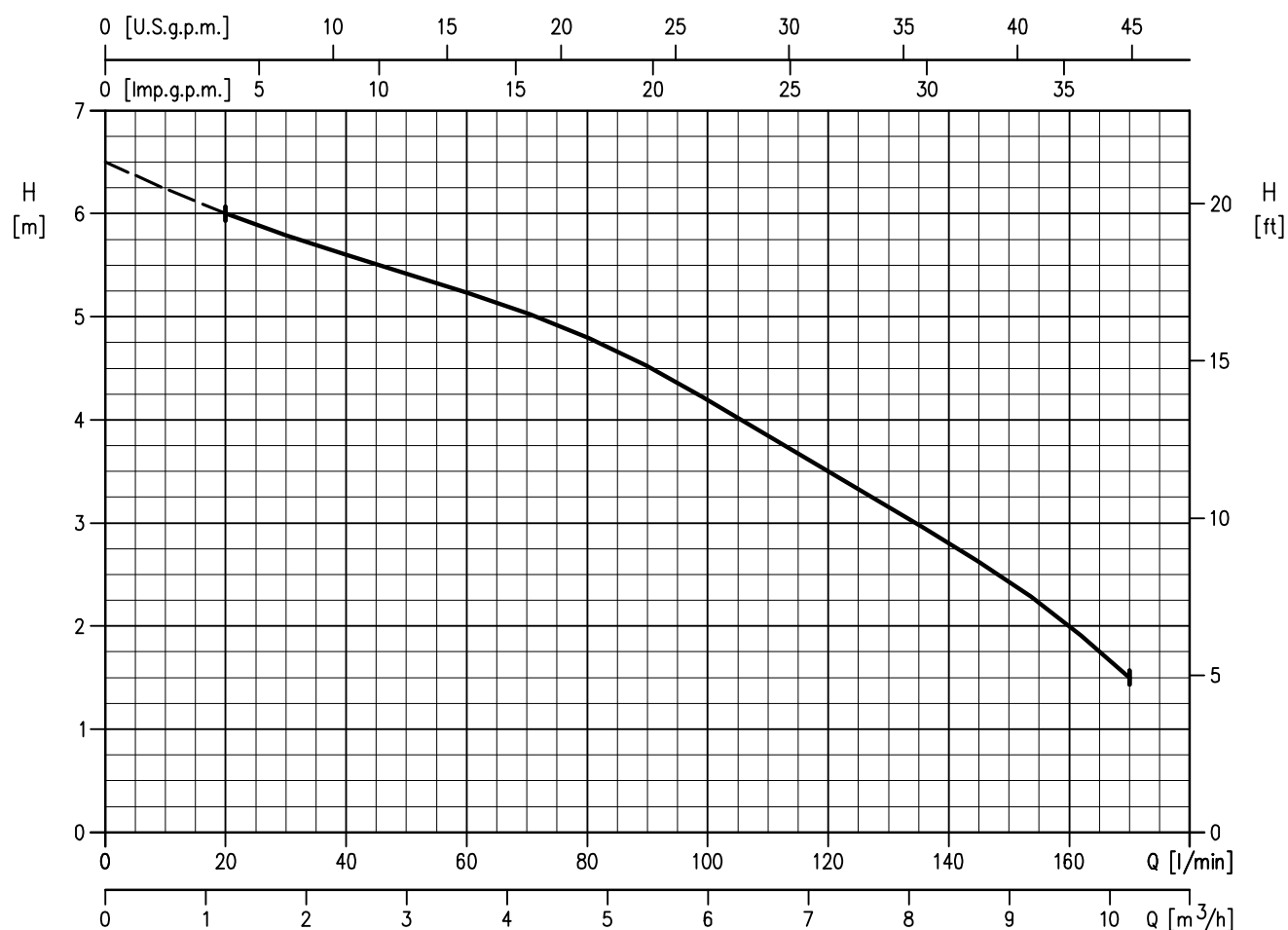
SUBMERSIBLE SUMP PUMPS

BEST ONE

PERFORMANCE CURVE

50Hz

BEST ONE VOX



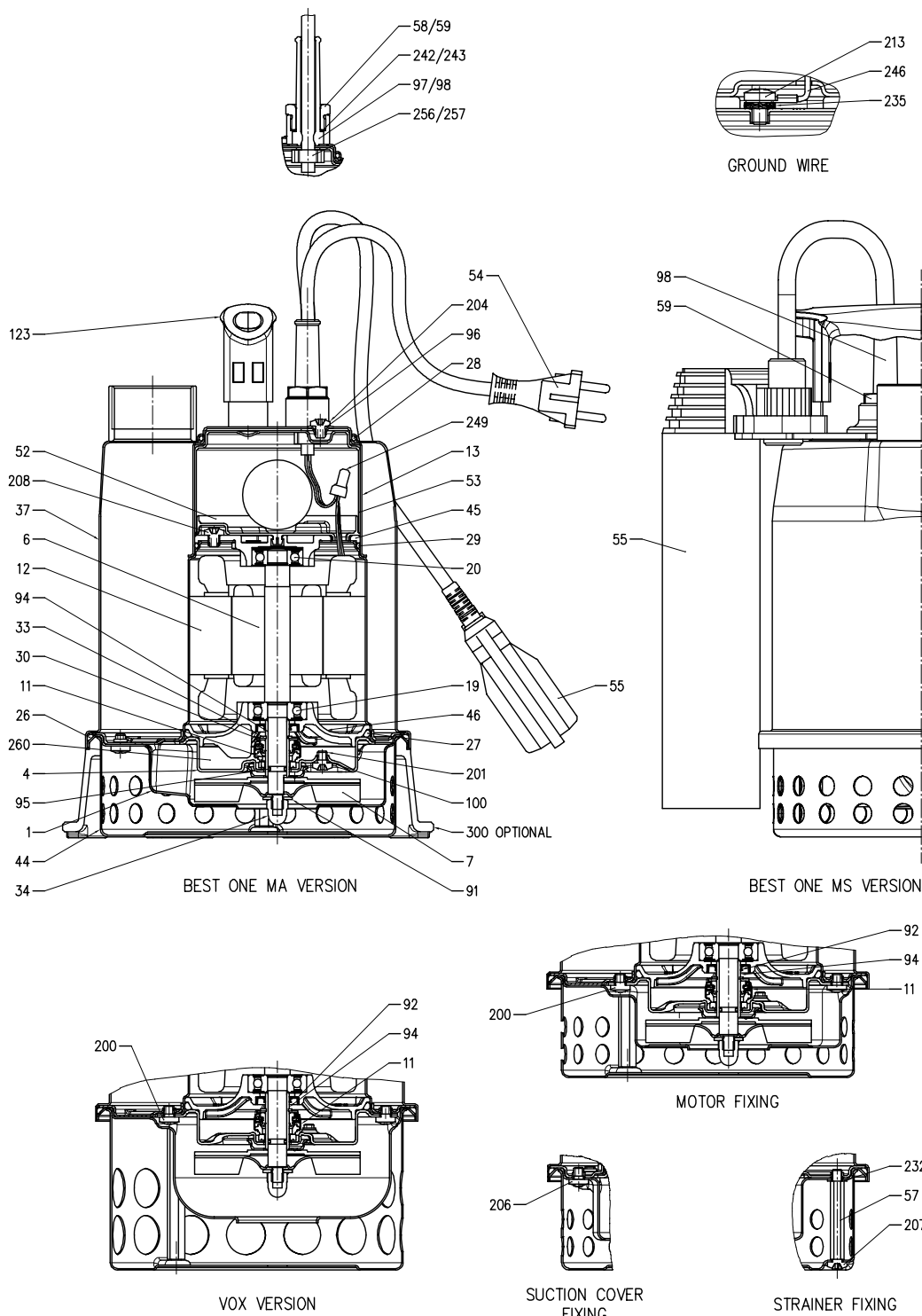
SUBMERSIBLE SUMP PUMPS

BEST ONE

CONSTRUCTION

50Hz

SECTIONAL VIEW



SUBMERSIBLE SUMP PUMPS

BEST ONE

CONSTRUCTION

50Hz

SECTIONAL VIEW TABLE

| N° | PART NAME | MATERIAL | DIMENSIONS | STANDARD | Q.ty |
|-----|----------------------------|---------------------------------------|-------------|----------|-------|
| 1 | Suction cover | EN 1.4301 (AISI 304) | - | - | 1 |
| 4 | Casing cover | EN 1.4301 (AISI 304) | - | - | 1 |
| 6 | Shaft with rotor | EN 1.4305 (AISI 303) | - | - | 1 |
| 7 | Impeller | EN 1.4301 (AISI 304) | - | - | 1 |
| 11 | Mechanical seal [1] | [1] | [1] | - | 1 |
| 12 | Motor frame with stator | EN 1.4301 (AISI 304) | - | - | 1 |
| 13 | Motor cover | EN 1.4301 (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 1.4301 (AISI 304) | 12x21x1 | - | 1 |
| 33 | Seeger ring | Carbon steel TC80 | 12 | UNI 7435 | 1 |
| 34 | Impeller nut | A2 - 70 UNI 7323 | M6 | UNI 5721 | 1 |
| 37 | Pump casing | EN 1.4301 (AISI 304) | - | - | 1 |
| 44 | Strainer | EN 1.4301 (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 | PA6 | - | - | 1 |
| 53 | Terminal insulating box | PA6 | - | - | 1 |
| 54 | Power cable | - | - | - | 1 |
| 55 | Switch [3] [4] | - | - | - | 1 |
| 57 | Spacer | EN 1.4301 (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 1.4301 (AISI 304) | - | - | 1 |
| 92 | Lip seal | NBR | 22x12x4 | - | 1 |
| 94 | Shaft sleeve | EN 1.4305 (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 | M5x6 | UNI 7687 | 4 |
| 201 | Screw | A2 - 70 UNI 7323 | M5x6 | UNI 7687 | 1 |
| 204 | Screw | A2 - 70 UNI 7323 | M5x6 | UNI 7687 | 1 |
| 206 | Screw | A2 - 70 UNI 7323 | M5x6 | UNI 7687 | 3 |
| 207 | Screw | A2 - 70 UNI 7323 | M5x6 | UNI 7687 | 2 |
| 208 | Screw | A2 - 70 UNI 7323 | M5x6 | UNI 7687 | 3 |
| 213 | Screw | A2 - 70 UNI 7323 | M4x6 | UNI 7687 | 1 |
| 232 | Washer | PA6 | 5,5x10x1 | - | 1 |
| 235 | Washer | Zinked Steel | 4 | UNI 8842 | 1 |
| 242 | Washer | EN 1.4301 (AISI 304) | 13,4x15,9x1 | - | 1 |
| 243 | Washer [3] | EN 1.4301 (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 pag. 303

[2] Only for single phase

[3] Only for automatic version

[4] It could be floating or magnetic type

[5] OPTIONAL See pag.700

SUBMERSIBLE SUMP PUMPS

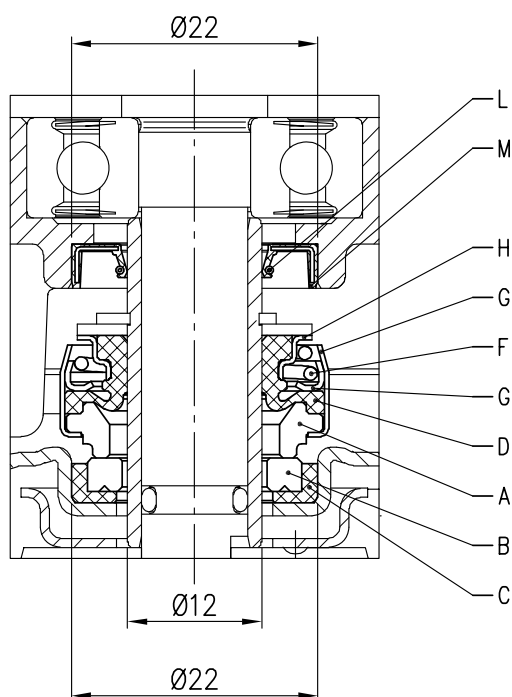
BEST ONE**CONSTRUCTION**

50Hz

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

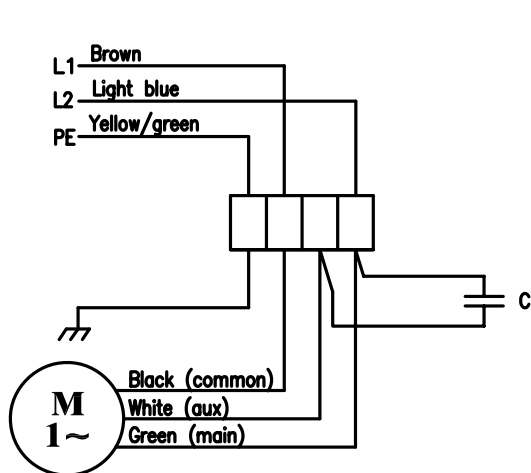


| REF | PART NAME | MATERIAL product standard | MATERIAL optional |
|-----|----------------------|------------------------------|----------------------|
| A | Rotary seal ring | Carbon graphite | SiC |
| B | Stationary seal ring | Ceramic | SiC - Q6 (*) |
| C | Gasket | NBR | FPM |
| D | Bellows | NBR | 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 | |

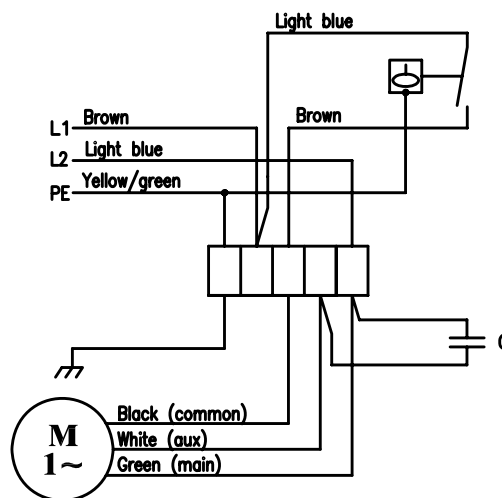
(*) Special grade of SiC with microporosities filled with graphite

SINGLE PHASE MOTOR DIAGRAM AND ELECTRIC CONNECTIONS

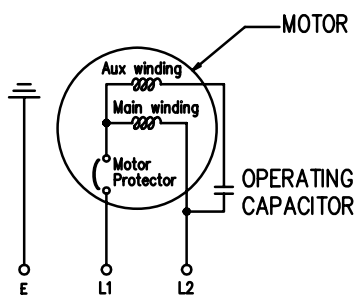
WITHOUT FLOAT SWITCH



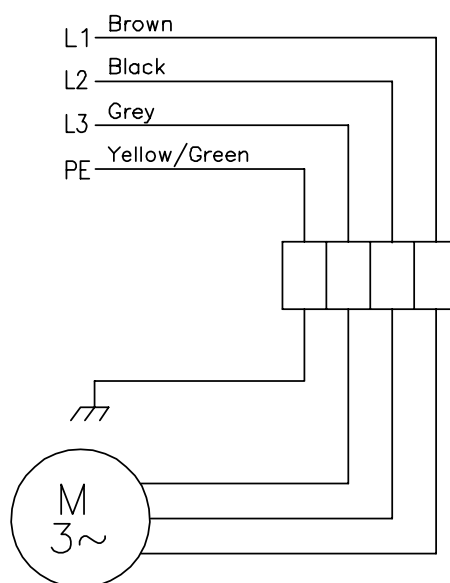
WITH FLOAT SWITCH



230 V
INTERNAL MOTORPROTECTOR



TREE PHASE MOTOR DIAGRAM AND ELECTRIC CONNECTIONS

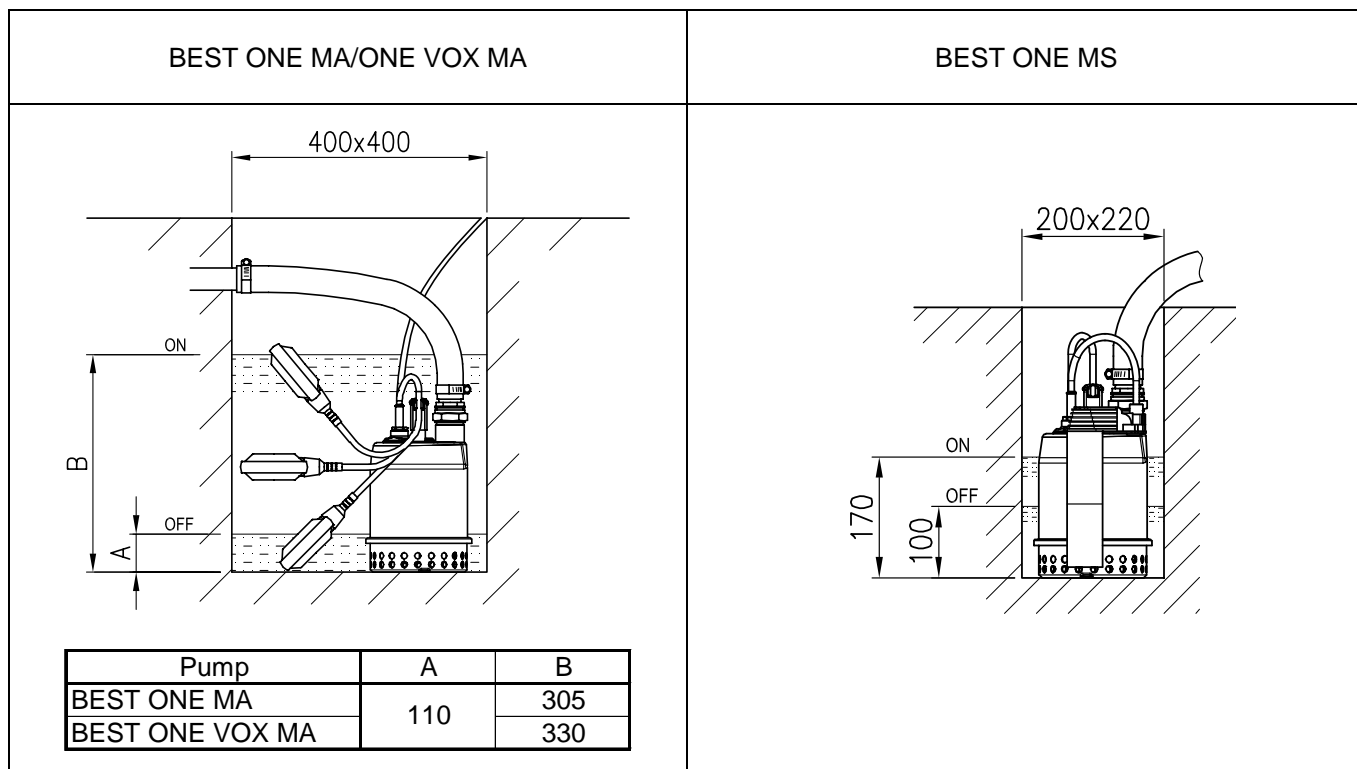


SUBMERSIBLE SUMP PUMPS

BEST ONE

INSTALLATION

50Hz



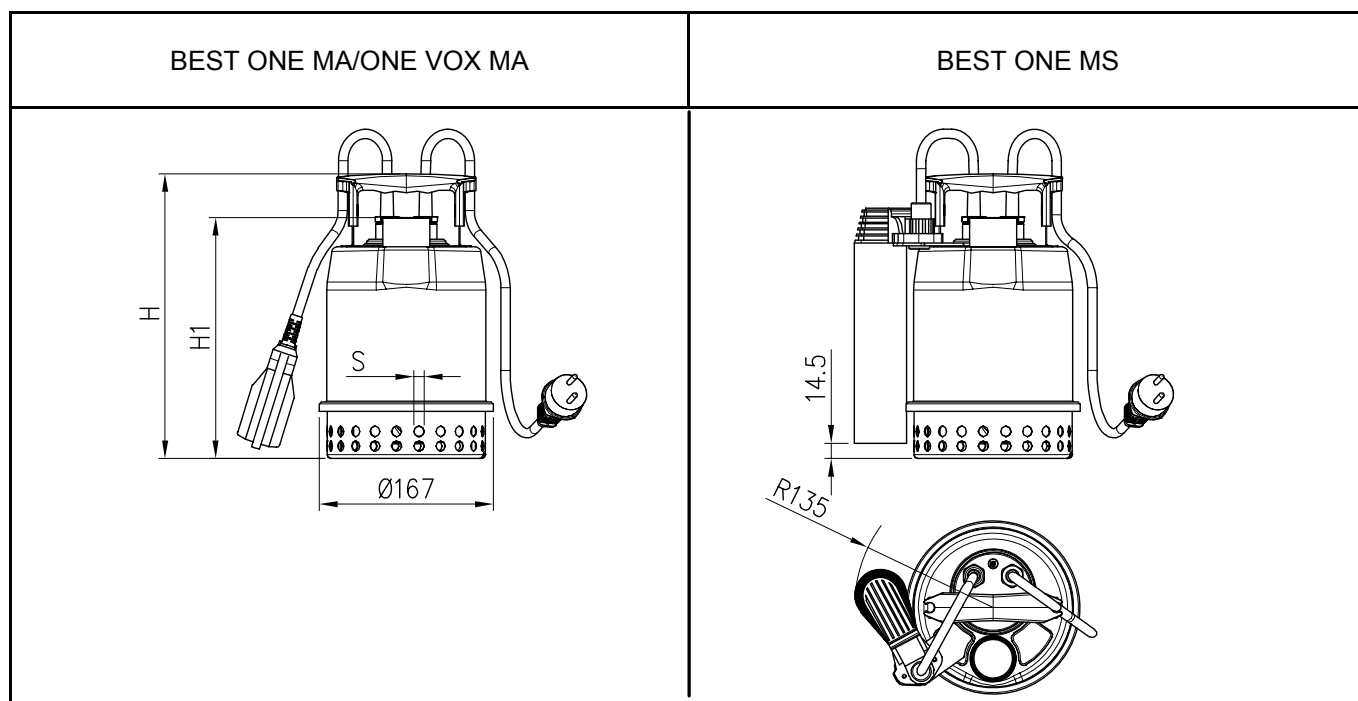
SUBMERSIBLE SUMP PUMPS

BEST ONE

DIMENSION AND WEIGHT

50Hz

PUMP



| Type Pumps | 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 |

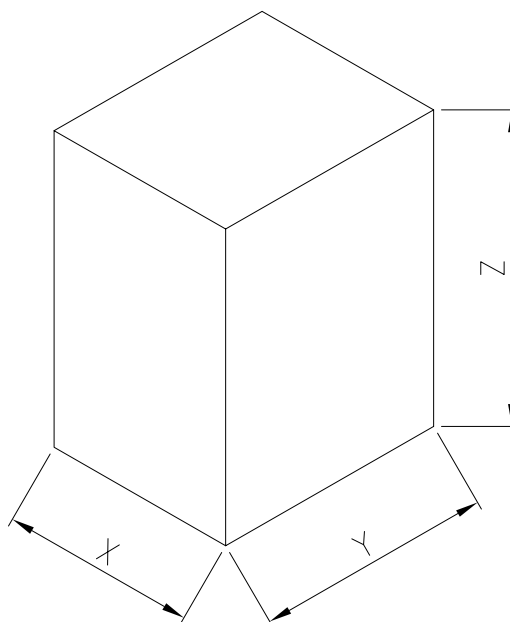
SUBMERSIBLE SUMP PUMPS

BEST ONE

DIMENSION AND WEIGHT

50Hz

PACKING



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

SUBMERSIBLE SUMP PUMPS

BEST ONE

TECHNICAL DATA

50Hz

| ELECTRIC DATA | | | | | | | | | | | |
|----------------|--------------|------|------|---------------------------|-----------|-----------------|----------------|--------------------------|-------------------------|--------------------------|-------------------------|
| Type pumps | | kW | HP | Capacitor Single Phase | | Input [kW] | | Full load current [A] | | Locked rotor current | |
| Single Phase | Three Phase | | | μF | Vc [V] | Single Phase | Three Phase | Single Phase 230 V | Three Phase 400 V | Single Phase 230 V | Three Phase 400 V |
| 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 |

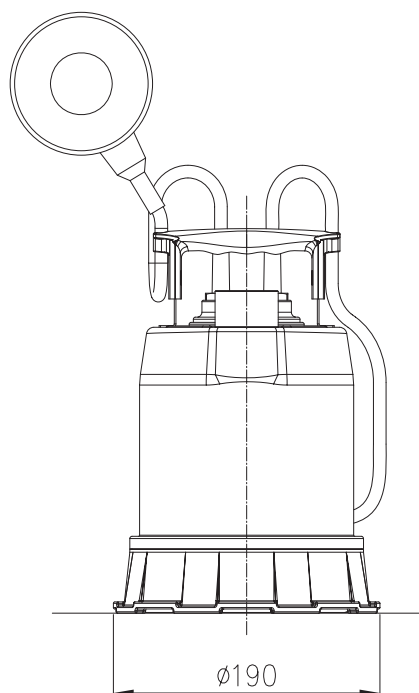
SUBMERSIBLE SUMP PUMPS

BEST ONE

OPTIONAL

50Hz

MINIMUM SUCTION SYSTEM



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

| Type pumps | COMPATIBILITY | | | |
|--------------|---------------|----|----|----|
| | Version | | | |
| | 1~ | | | 3~ |
| | M | MA | MS | |
| Best One | ✓ | ✓ | ✗ | ✓ |
| Best One Vox | ✗ | ✗ | ✗ | ✗ |

700