

# Technical Data

Pump Name

EVMSG64 3-0F5BQ1EG E/18.5

|          |            |                                       |           |
|----------|------------|---------------------------------------|-----------|
| Customer | Date       | 2024-06-14                            | Company   |
| Contact  | Item no.   |                                       | Issued by |
| Phone    | Project    |                                       | Phone     |
| E-mail   | Project ID | Proiect redenumit 2024-06-14 17:13:34 | E-mail    |

## Requested data

|   |                           |                          |                    |          |
|---|---------------------------|--------------------------|--------------------|----------|
| 1 | Pump type                 | VERTICAL MULTISTAGE PUMP | Fluid              | Water    |
| 2 | Number of pumps / Reserve | 1 / 0                    | Liquid temperature | °C       |
| 3 | Flow                      | m³/h                     | Kin. viscosity     | mm²/s    |
| 4 | Head                      | m                        | Vapour pressure    | bar      |
| 5 | Geodetic head             | m                        | PH value           |          |
| 6 | Inlet pressure (pin)      | bar                      | Density            | kg/m³    |
| 7 | Available system NPSH     |                          | Solids             | Weight % |
| 8 | Ambient temperature       | °C                       |                    |          |

## Pump

|    |                      |                           |                                   |           |              |      |
|----|----------------------|---------------------------|-----------------------------------|-----------|--------------|------|
| 9  | Pump Name            | EVMSG64 3-0F5BQ1EG E/18.5 | Frequency                         | Hz        | 50           |      |
| 10 | Design               | VERTICAL MULTISTAGE PUMP  | Installation type                 |           | Round flange |      |
| 11 | Manufacturer         | EBARA                     | Impeller Diameter                 | Max.      | mm           |      |
| 12 | Speed                | rpm                       |                                   | 2950      | Designed     | mm   |
| 13 | No. of Stage         |                           |                                   | 3         | Min.         | mm   |
| 14 | Connection           | Suction side              | Flow                              | Operating | m³/h         |      |
| 15 | Connection           | Discharge side            |                                   | Max-      | m³/h         |      |
| 16 | Max Working Pressure | bar                       |                                   | 16        | Min-         | m³/h |
| 17 | Shut-off head        | bar                       | 9.60                              | Head      | Operating    | m    |
| 18 | Total weight         | kg                        | See the table of "Dimensions".    |           | - (Qmax.)    | m    |
| 19 | Shaft power          | kW                        |                                   |           | - (Qmin.)    | m    |
| 20 |                      |                           | Max. Shaft Power at max. impeller | kW        | 16.20        |      |
| 21 | Required pump NPSH   | m                         | Efficiency                        | %         |              |      |

## Materials

|    |                     |                              |  |  |
|----|---------------------|------------------------------|--|--|
| 22 | Impeller            | AISI 304                     |  |  |
| 23 | Intermediate casing | AISI 304                     |  |  |
| 24 | Bottom casing       | Cast Iron EN GJL-250 EN 1561 |  |  |
| 25 | Casing cover        | AISI 304                     |  |  |
| 26 | Shaft               | AISI 304                     |  |  |
| 27 | O-ring              | EPDM                         |  |  |

## Motor

|    |                      |                                      |                  |                  |     |
|----|----------------------|--------------------------------------|------------------|------------------|-----|
| 28 | Manufacturer         | ATB                                  | Insulation class | F                |     |
| 29 | Type                 | TEFC_EVMS64 3-0/18.5_400_Three Phase | Phases           | 3~               |     |
| 30 | Specific design      | IE3 / 50 Hz / Pole pairs 1           | Frame size       | 160              |     |
| 31 | Rated power          | kW                                   | 18.5             | Weight           | kg  |
| 32 | Number of poles      | 2                                    | Electric voltage | V                | 400 |
| 33 | Speed                | rpm                                  | 2955             | Electric current | A   |
| 34 | Degree of protection | IP56                                 |                  |                  |     |
| 35 |                      |                                      |                  |                  |     |

## Remarks

# Performance Curve

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## Requested data

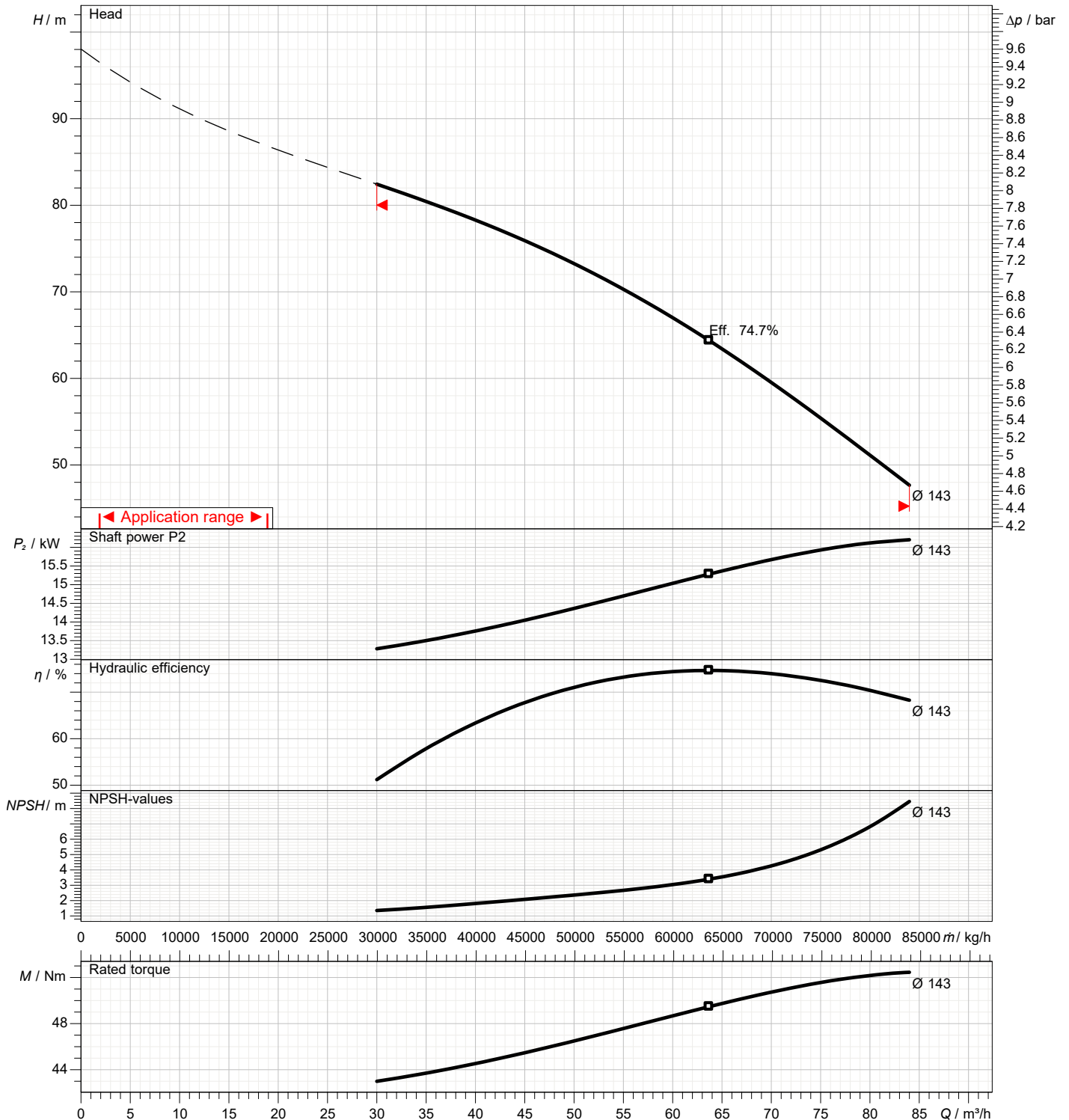
|   |               |      |  |
|---|---------------|------|--|
| 1 | Flow          | m³/h |  |
| 2 | Head          | m    |  |
| 3 | Geodetic head | m    |  |

## Pump

|                            |      |     |                 |     |      |
|----------------------------|------|-----|-----------------|-----|------|
| Operating flow             | m³/h |     | Frequency       | Hz  | 50   |
| Operating head             | m    |     | Number of poles |     | 2    |
| Impeller diameter designed | mm   | 143 | Speed           | rpm | 2950 |

Test standard: ISO 9906:2012 - Grade3B

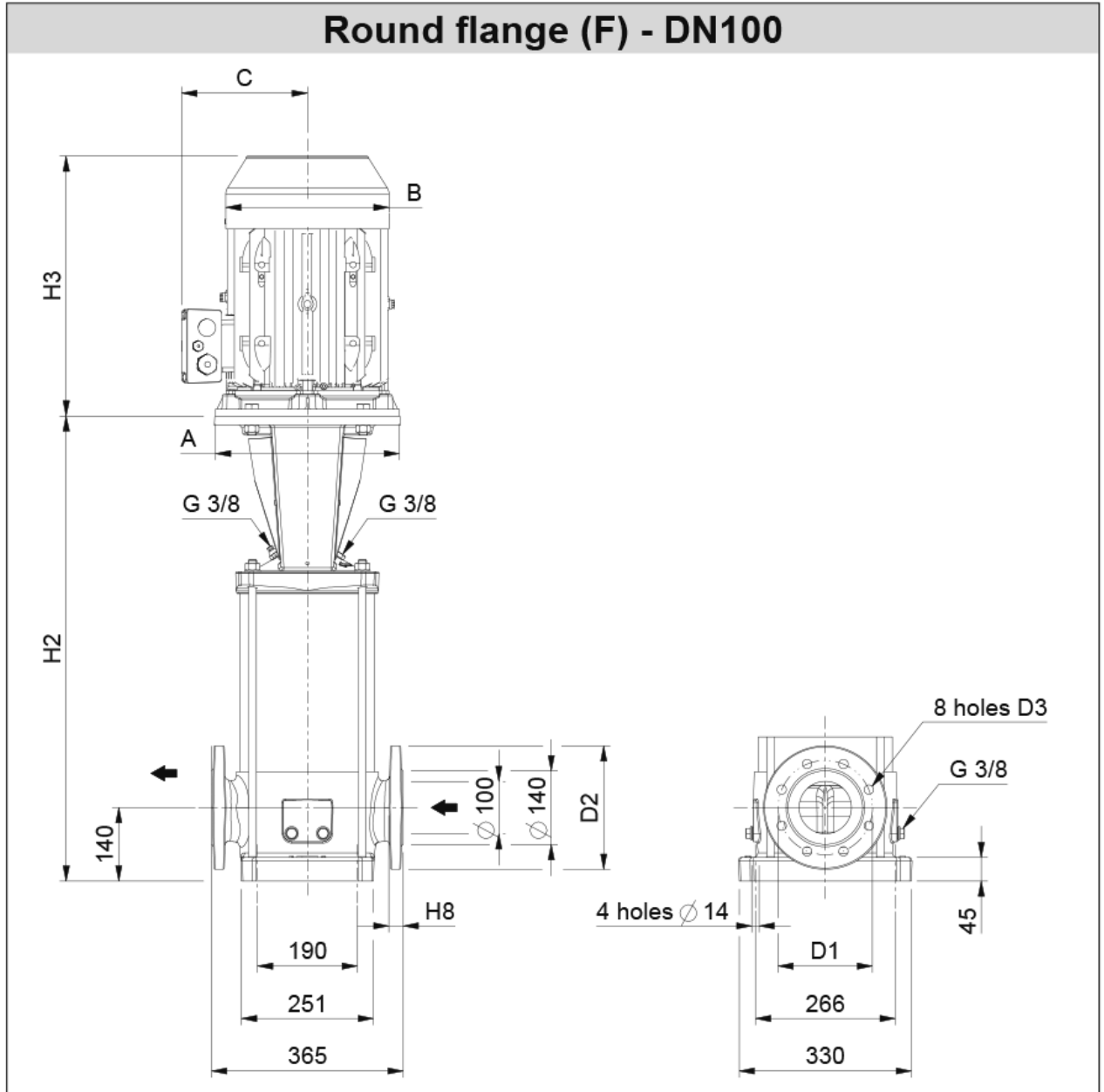
Water; 20°C; 998.3kg/m³; 1mm²/s



# Dimensions

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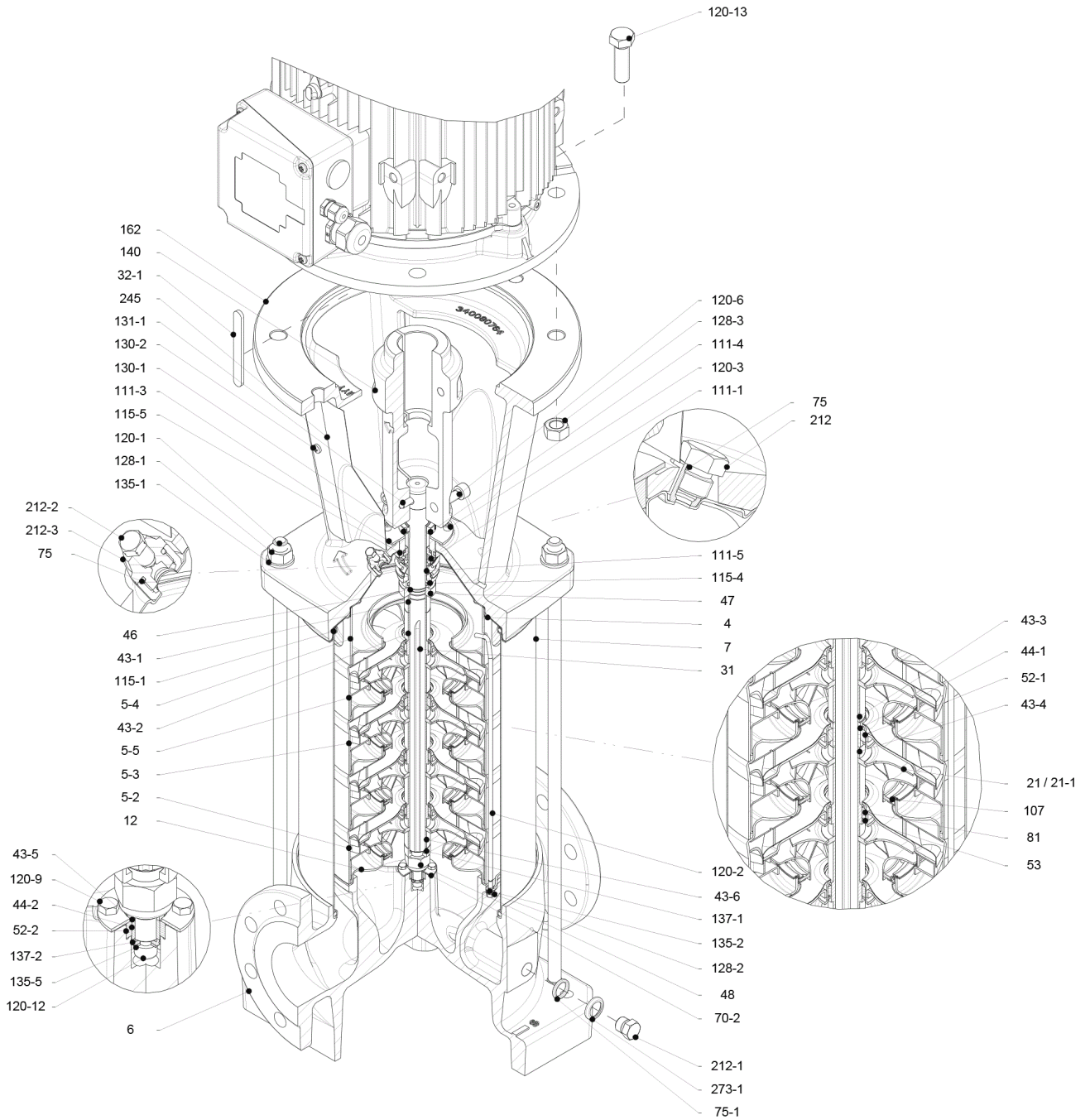
| Dimensions in |                 | mm     |  |  |  |  |  |  |
|---------------|-----------------|--------|--|--|--|--|--|--|
| 1             | A               | Dia350 |  |  |  |  |  |  |
| 2             | B               | 311    |  |  |  |  |  |  |
| 3             | C               | 240    |  |  |  |  |  |  |
| 4             | D1              | 180    |  |  |  |  |  |  |
| 5             | D2              | 235    |  |  |  |  |  |  |
| 6             | D3              | 18     |  |  |  |  |  |  |
| 7             | H2              | 824    |  |  |  |  |  |  |
| 8             | H2+H3           | 1319   |  |  |  |  |  |  |
| 9             | H8              | 24     |  |  |  |  |  |  |
| 10            | Weight P&M (kg) | 201.1  |  |  |  |  |  |  |
| 11            |                 |        |  |  |  |  |  |  |
| 12            |                 |        |  |  |  |  |  |  |
| 13            |                 |        |  |  |  |  |  |  |
| 14            |                 |        |  |  |  |  |  |  |
| 15            |                 |        |  |  |  |  |  |  |

(1/3)

# Construction

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| E-mail   | Project ID Proiect redenumit 2024-06-14 17:13:34 | E-mail    |



(2/3)

# Construction

Pump Name **EVMSG64 3-0F5BQ1EG E/18.5**

|          |            |                                       |           |
|----------|------------|---------------------------------------|-----------|
| Customer | Date       | 2024-06-14                            | Company   |
| Contact  | Item no.   |                                       | Issued by |
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| E-mail   | Project ID | Proiect redenumit 2024-06-14 17:13:34 | E-mail    |

| N°     | PART NAME                        | MATERIAL<br>EVMSG  | DIMENSIONS   | STANDARD | QTY |
|--------|----------------------------------|--|--------------|----------|-----|
| 4      | Casing cover                     | EN 1.4301 (AISI 304)   |              |          | 1   |
| 5-2    | Intermediate casing              | EN 1.4301 (AISI 304)   |              |          | 1   |
| 5-3    | Intermediate casing with bearing | EN 1.4301 (AISI 304)   |              |          | 1   |
| 5-4    | Discharge casing                 | EN 1.4301 (AISI 304)   |              |          | 1   |
| 5-5    | Top intermediate casing          | EN 1.4301 (AISI 304)   |              |          | 1   |
| 6      | Bottom casing                    | up to 16 bar<br>Cast Iron EN GJL-250 EN 1561                         |              |          | 1   |
| 7      | Outer casing                     | EN 1.4301 (AISI 304)   |              |          | 1   |
| 12     | Suction cover                    | EN 1.4301 (AISI 304)   |              |          | 1   |
| 21     | Impeller                         | EN 1.4301 (AISI 304)   |              |          | 3   |
| 31     | Shaft                            | EN 1.4301 (AISI 304)   |              |          | 1   |
| 32-1   | Adjuster key                     | EN 1.4301 (AISI 304)   |              |          | 1   |
| 43-1   | Shaft sleeve (mechanical seal)   | EN 1.4301 (AISI 304)   |              |          | 1   |
| 43-2   | Shaft sleeve (intermediate)      | EN 1.4301 (AISI 304)   |              |          | 2   |
| 43-3   | Shaft sleeve (bearing)           | EN 1.4301 (AISI 304)   |              |          | 1   |
| 43-4   | Shaft sleeve (adjustment)        | EN 1.4301 (AISI 304)   |              |          | 1   |
| 43-5   | Shaft sleeve (last stage)        | EN 1.4301 (AISI 304)   |              |          | 1   |
| 43-6   | Shaft sleeve (adjustment)        | EN 1.4301 (AISI 304)   |              |          | 1   |
| 44-1   | Shaft sleeve bearing             | Tungsten carbide   |              |          | 1   |
| 44-2   | Shaft sleeve (bearing)           | Tungsten carbide   |              |          | 1   |
| 46     | Ring (mechanical seal)           | EN 1.4404 (AISI 316L)  |              |          | 1   |
| 47     | Ring holder                      | EN 1.4301 (AISI 304)   |              |          | 1   |
| 48     | Impeller nut                     | EN 1.4301 (AISI 304) with inox insert                                |              |          | 1   |
| 52-1   | Sleeve bearing                   | Tungsten carbide   |              |          | 1   |
| 52-2   | Bearing sleeve (bottom casing)   | Tungsten carbide   |              |          | 1   |
| 53     | Bush holder                      | EN 1.4301 (AISI 304)   |              |          | 2   |
| 70-2   | Ring for bearing sleeve          | EN 1.4301 (AISI 304)   |              |          | 1   |
| 75     | O-Ring (priming plug)            | EPDM / FPM *   | Ø12.37x2.62  | OR 3050  | 2   |
| 75-1   | O-Ring (drainage plug)           | EPDM / FPM *   |              |          | 4   |
| 81     | Bush                             | PTFE   |              |          | 2   |
| 107    | Liner ring                       | EN 1.4301 (AISI 304) + PPS   |              |          | 3   |
| 111-1  | Mechanical seal                  | --- **   |              |          | 1   |
| 111-3  | Mechanical seal seat             | EN 1.4301 (AISI 304)   |              |          | 1   |
| 111-4  | Seal holder                      | EN 1.4404 (AISI 316L)  |              |          | 1   |
| 111-5  | Mechanical seal cartridge sleeve | EN 1.4301 (AISI 304)   |              |          | 1   |
| 115-1  | O-Ring (outer casing)            | EPDM / FPM *   | Ø240.66x5.34 | OR 6945  | 2   |
| 115-4  | O-Ring (cartridge sleeve)        | EPDM / FPM *   | Ø23.39x3.53  | OR 4093  | 1   |
| 115-5  | O-Ring (seal flange)             | EPDM / FPM *   | Ø44.04x3.53  | OR 4175  | 1   |
| 120-1  | Tie rod                          | EN 1.4057 (AISI 431)   |              |          | 4   |
| 120-2  | Tie rod (stage)                  | EN 1.4301 (AISI 304)   |              |          | 2   |
| 120-3  | Screw (seal flange)              | A2-70  | M5x12        | ISO 4762 | 4   |
| 120-6  | Screw (pump coupling)            | from 11 kW to 30 kW<br>Galvanized steel 8.8 strength class ISO 898/1 | M10x30       | ISO 4762 | 4   |
| 120-9  | Screw (bottom casing)            | A2-70  | M5x8         | ISO 4017 | 4   |
| 120-12 | Screw (shaft)                    | A2-70  | M6x16        | ISO 4762 | 1   |
| 120-13 | Screw for motor                  | MEC 160-180<br>Galvanized steel 8.8 strength class ISO 898/1         | M16x50       | ISO 4017 | 4   |
| 128-1  | Nut (tie rod)                    | A2-70  | M16          | ISO 4032 | 4   |
| 128-2  | Nut (casing tie rod)             | A2-70  | M5           | ISO 4032 | 4   |
| 128-3  | Nut (motor)                      | MEC 160-180-200-225<br>Galvanized steel                              | M16          | ISO 4032 | 4   |
| 130-1  | Set screw                        | EN 1.4301 (AISI 304)   | M6x8         | ISO 4026 | 3   |
| 130-2  | Screw for coupling guard         | A2-70  | M5x6         | UNI 7687 | 4   |
| 131-1  | Pin for shaft                    | above 5.5 kW<br>Carbon Steel   | Ø8x50        | ISO 2338 | 1   |
| 135-1  | Washer (tie rod)                 | EN 1.4301 (AISI 304)   | Ø16          | ISO 7089 | 4   |
| 135-2  | Washer (casing tie rod)          | EN 1.4301 (AISI 304)   | Ø5.1         | UNI 1751 | 2   |
| 135-5  | Washer (impeller nut)            | EN 1.4301 (AISI 304)   |              |          | 1   |
| 137-1  | Impeller spacer                  | EN 1.4301 (AISI 304)   |              |          | 1   |
| 137-2  | Shaft spacer                     | EN 1.4301 (AISI 304)   |              |          | 1   |
| 140    | Coupling                         | from 5.5 kW to 30 kW<br>Cast Iron EN GJL250 EN 1561                  |              |          | 2   |
| 162    | Motor bracket                    | up to 30 kW<br>Cast Iron EN GJS 400-15 EN 1563                       |              |          | 1   |
| 212    | Priming plug                     | EN 1.4301 (AISI 304)   |              |          | 1   |
| 212-1  | Drainage plug                    | EN 1.4301 (AISI 304)   |              |          | 4   |
| 212-2  | Venting plug                     | EN 1.4401 (AISI 316)   |              |          | 1   |
| 212-3  | Priming plug                     | EN 1.4301 (AISI 304)   |              |          | 1   |
| 245    | Coupling guard                   | EN 1.4301 (AISI 304)   |              |          | 2   |
| 273-1  | Washer (drainage plug)           | EN 1.4301 (AISI 304)   |              |          | 4   |

\* EPDM (standard)  
FPM (option)

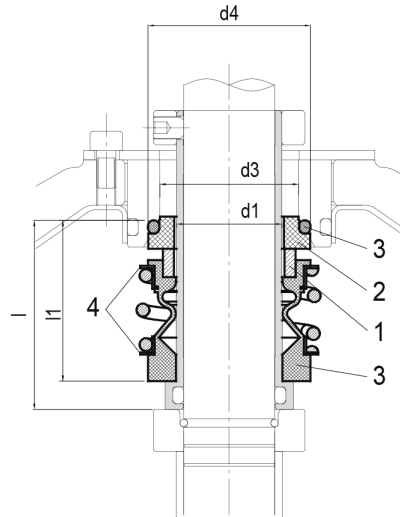
\*\* see CONSTRUCTION 3/3

(3/3)

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- Standard

| Type key | Availability | Max operating pressure | Max operating temperature | Shaft seal type |      | Shaft seal material |      |                      |      |                 |      |                         |             |
|----------|--------------|------------------------|---------------------------|-----------------|------|---------------------|------|----------------------|------|-----------------|------|-------------------------|-------------|
|          |              |                        |                           | Type            | Code | 1<br>Rotating part  | Code | 2<br>Stationary part | Code | 3<br>Elastomers | Code | 4<br>Compression spring | 5<br>Collar |
| BQ1EG    | ●            | 16 bar                 | - 30°C to + 120°C         | Unbalanced      | (-)  | Carbon              | (B)  | SiC                  | Q1   | EPDM            | (E)  | AISI 316                | (G)         |

| Max operating pressure | d1 [mm] | d3 [mm] | d4 [mm] | l [mm] | l1 [mm] |
|------------------------|---------|---------|---------|--------|---------|
| 16 bar                 | 28      | 37      | 43      | 50     | 42.5    |