



**AMCAL**  
INDUSTRIAL PUMP SOLUTIONS

**KSB**  
DATA BOOKLET

## Etapprime B

### Type Series Booklet



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Type Series Booklet Etaprime B

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## Self-priming Pump in Close-coupled Design

### Volute Casing Pumps

## Etaprime B



### Main applications

- Spray irrigation systems
- Service water supply systems
- Drainage
- Drainage systems
- Fire-fighting systems
- Lowering groundwater levels
- Domestic water supply
- Air-conditioning systems
- Cooling circuits
- Swimming pools
- Water supply systems

### Fluids handled

- Drinking water
- Swimming pool water<sup>1)</sup>
- Fire-fighting water
- Seawater
- River water
- Lake water
- Groundwater
- Brackish water
- Condensate
- Brine
- Oil

- Service water
- Cleaning agents
- Cooling water

### Operating data

Table 1: Operating properties

| Characteristic     |                      | Value |       |
|--------------------|----------------------|-------|-------|
|                    |                      | 50 Hz | 60 Hz |
| Flow rate          | Q [m³/h]             | ≤ 130 | ≤ 150 |
|                    | Q [l/s]              | ≤ 36  | ≤ 42  |
| Head               | H [m]                | ≤ 70  | ≤ 100 |
| Fluid temperature  | T [°C]               | ≥ -30 | ≥ -30 |
|                    |                      | ≤ +90 | ≤ +90 |
| Operating pressure | p [bar]              | ≤ 10  | ≤ 10  |
| Geodetic head      | H <sub>geo</sub> [m] | ≤ 9   | ≤ 9   |

### Design details

#### Design

- Volute casing pump
- Back pull-out design (from size 40-40-140)
- Horizontal installation
- Self-priming
- Single-stage
- Single-suction
- Pump and motor connected by a stub shaft

#### Pump casing

- Radially split volute casing
- Volute casing with integrally cast pump feet (from pump size 40-40-140)

#### Drive

- KSB IEC frame standardised IE3 motor (from 0.75 kW)
- Type of construction B34 ≤ 1.1 kW
- Type of construction V1 1.1 to 4 kW
- Type of construction V15 > 4 kW
- 230/400 V up to 2.2 kW and 400/690 V from 3 kW
- Enclosure IP55
- Thermal class F
- 3 PTC thermistors

#### Shaft seal

- Shaft equipped with replaceable shaft protecting sleeve in the shaft seal area
- Single mechanical seals and double mechanical seals to EN 12756

#### Impeller type

- Open multi-vane impeller

<sup>1</sup> Swimming pool water (0.4 to 1.4 mg/l free chlorine, max. 0.6 mg/l combined chlorine, pH 6.9 to 7.7, water hardness 10 to 30 °dH, max. salt content 7 g/l)

## Designation

Table 2: Designation example

| Position                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                |    |    |    |    |    |    |    |
|-------------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------------|----|----|----|----|----|----|----|
| 1                             | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25             | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| E                             | T | P | B | 0 | 8 | 0 | - | 0 | 8  | 0  | -  | 2  | 0  | 0  |    | G  | C  | X  | I  | 1  | 0  | D  | 3  | 0              | 1  | 8  | 5  | 2  |    |    | B  |
| See name plate and data sheet |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | See data sheet |    |    |    |    |    |    |    |

Table 3: Designation key

| Position | Code                              | Description                                                              |
|----------|-----------------------------------|--------------------------------------------------------------------------|
| 1-4      | Pump type                         |                                                                          |
|          | ETPB                              | Etaprime bloc                                                            |
| 5-16     | Pump size, e.g.                   |                                                                          |
|          | 080                               | Nominal suction nozzle diameter [mm]                                     |
|          | 080                               | Nominal discharge nozzle diameter [mm]                                   |
|          | 200                               | Nominal impeller diameter [mm]                                           |
| 17       | Pump casing material              |                                                                          |
|          | G                                 | Cast iron EN-GJL-250 / A48CL35                                           |
|          | C                                 | Stainless steel 1.4408 / A743CF8M                                        |
| 18       | Impeller material                 |                                                                          |
|          | G                                 | Cast iron EN-GJL-250                                                     |
|          | C                                 | Stainless steel 1.4408                                                   |
| 19       | Design                            |                                                                          |
|          | _2)                               | Standard                                                                 |
|          | X                                 | Non-standard (BT3D, BT3)                                                 |
| 20       | Shaft seal type                   |                                                                          |
|          | I                                 | Single mechanical seal, internal circulation (conical seal chamber only) |
|          | D                                 | Double mechanical seal in back-to-back arrangement                       |
|          | T                                 | Double mechanical seal in tandem arrangement with internal circulation   |
| 21-22    | Seal code, single mechanical seal |                                                                          |
|          | 01                                | Q1Q1VGG                                                                  |
|          | 08                                | AQ1VGG <sup>3)</sup>                                                     |
|          | 09                                | U3U3VGG                                                                  |
|          | 10                                | Q1Q1X4GG                                                                 |
|          | 11                                | BQ1EGG                                                                   |
|          | 70                                | Q12Q1M1GG                                                                |
| 23       | Scope of supply                   |                                                                          |
|          | D                                 | Pump with motor                                                          |
| 24       | Shaft unit                        |                                                                          |
|          | 1                                 | Shaft unit 17                                                            |
|          | 2                                 | Shaft unit 25                                                            |
|          | 3                                 | Shaft unit 35                                                            |
| 25-28    | Motor size                        |                                                                          |
| 29       | Number of motor poles             |                                                                          |
| 30-31    | Explosion protection              |                                                                          |
|          | ex                                | With explosion-proof motor                                               |
|          | _2)                               | Without explosion-proof motor                                            |
| 32       | Product generation                |                                                                          |
|          | B                                 | Etaprime Global Pump                                                     |

<sup>2</sup> Blank

<sup>3</sup> For shaft unit 17: BQVGG

## Materials

**Table 4:** A1 = default material variant  
A2 = optional material variant

| Part No. | Description                             | Material                       | Material variant |    |    |
|----------|-----------------------------------------|--------------------------------|------------------|----|----|
|          |                                         |                                | G                | GC | C  |
| 102      | Volute casing                           | Grey cast iron EN-GJL-250      | A1               | A1 | -  |
|          |                                         | Stainless steel 1.4408         | -                | -  | A1 |
| 161      | Casing cover                            | Grey cast iron EN-GJL-250      | A1               | A1 | -  |
|          |                                         | Stainless steel 1.4408         | -                | -  | A1 |
| 210      | Shaft for shaft units 25 and 35         | Tempered steel C45+N           | A1               | A1 | -  |
|          |                                         | Stainless steel 1.4571         | A2               | A2 | A1 |
|          | Shaft for shaft unit 17                 | Stainless steel 1.4571         | A1               | A1 | A1 |
| 230      | Impeller                                | Grey cast iron EN-GJL-250      | A1               | -  | -  |
|          |                                         | Stainless steel 1.4408         | -                | A1 | A1 |
| 341      | Drive lantern for shaft units 25 and 35 | Grey cast iron EN-GJL-250      | A1               | A1 | A1 |
|          | Drive lantern for shaft unit 17         | Grey cast iron EN-GJL-250      | A1               | A1 | -  |
|          |                                         | Stainless steel 1.4408         | -                | -  | A1 |
| 412      | O-ring                                  | EPDM 80 peroxide <sup>4)</sup> | A1               | A1 | A1 |
| 523      | Shaft sleeve (not for shaft unit 17)    | Stainless steel 1.4571         | A1               | A1 | A1 |

## Product benefits

- Maintenance-free mechanical seal ensures operating reliability
- Easy to dismantle due to back pull-out design; no need to remove the pump casing from the piping
- Good suction performance, self-priming up to 9 m suction lift, also suitable for applications with relatively poor inlet conditions (i.e. low or negative inlet pressure) and for handling fluids with entrained gas.
- Optimised hydraulic components for high efficiency help reduce energy consumption

## Certifications

**Table 5:** Overview

| Label                                                                               | Effective in: | Comment                                  |
|-------------------------------------------------------------------------------------|---------------|------------------------------------------|
|  | All countries | Certified quality management to ISO 9001 |

<sup>4</sup> FKM 80 on request

## Overview of product features / selection tables

### Overview of fluids handled

Table 6: Symbols key

| Symbol | Description                          |
|--------|--------------------------------------|
| x      | Standard                             |
| -      | Version not available / not feasible |

Table 7: Excerpt from the overview of fluids handled with associated material variants

| Fluid handled                                              | Temperature   | Materials                          |                                       |                                          | Shaft seal      |                                             |         |          |                      |           | Comments                                                            |
|------------------------------------------------------------|---------------|------------------------------------|---------------------------------------|------------------------------------------|-----------------|---------------------------------------------|---------|----------|----------------------|-----------|---------------------------------------------------------------------|
|                                                            |               | Casing/impeller                    |                                       |                                          | Mechanical seal |                                             |         |          |                      |           |                                                                     |
|                                                            |               | Grey cast iron /<br>grey cast iron | Grey cast iron /<br>CrNiMo cast steel | CrNiMo cast steel /<br>CrNiMo cast steel | Q1Q1VGG         | AQ1VGG <sup>5)</sup><br>BQVGG <sup>6)</sup> | U3U3VGG | Q1Q1X4GG | BQ1EGG <sup>5)</sup> | Q12Q1M1GG |                                                                     |
|                                                            |               |                                    |                                       |                                          |                 |                                             |         |          |                      |           |                                                                     |
| [°C]                                                       | G             | GC                                 | C                                     | 01                                       | 08              | 09                                          | 10      | 11       | 70                   |           |                                                                     |
| Water                                                      |               |                                    |                                       |                                          |                 |                                             |         |          |                      |           |                                                                     |
| Industrial waste water                                     | -             | -                                  | -                                     | -                                        | -               | -                                           | -       | -        | -                    | -         | Analysis of fluid handled required                                  |
| Ammonia water (ammonia solution), percentage ≤ 10 %        | ≤ 40          | ✗                                  | -                                     | -                                        | -               | -                                           | -       | -        | ✗                    | -         | Tandem seal Q1Q1EGG required.<br>Quench liquid: use suitable water. |
| Brackish water                                             | ≤ 25          | -                                  | -                                     | ✗                                        | -               | -                                           | -       | ✗        | -                    | -         | -                                                                   |
| Fire-fighting water <sup>7)</sup>                          | ≤ 60          | -                                  | ✗                                     | -                                        | -               | -                                           | -       | ✗        | -                    | -         | -                                                                   |
| Condensate <sup>5)</sup>                                   | ≤ 90          | ✗                                  | -                                     | -                                        | -               | -                                           | -       | -        | ✗                    | -         | -                                                                   |
| Condensate, not conditioned                                | ≤ 90          | -                                  | -                                     | ✗                                        | -               | -                                           | -       | -        | ✗                    | -         | -                                                                   |
| Cooling water (without antifreeze) <sup>7)</sup>           | ≤ 60          | ✗                                  | -                                     | ✗ <sup>8)</sup>                          | -               | -                                           | -       | ✗        | -                    | -         | -                                                                   |
| Cooling water pH ≥ 7.5 (with antifreeze) <sup>7)9)</sup> , | ≥ -30 to ≤ 90 | ✗                                  | -                                     | ✗                                        | -               | -                                           | -       | -        | ✗                    | -         | -                                                                   |
| Slightly contaminated water <sup>7)</sup>                  | ≤ 60          | ✗                                  | -                                     | -                                        | -               | -                                           | -       | ✗        | -                    | -         | -                                                                   |
| Seawater                                                   | ≤ 25          | -                                  | -                                     | ✗                                        | -               | -                                           | -       | ✗        | -                    | -         | -                                                                   |
| Surface water <sup>7)</sup>                                | ≤ 40          | ✗                                  | -                                     | -                                        | -               | ✗                                           | -       | -        | -                    | -         | Analysis of fluid handled required                                  |
| Pure water <sup>10)</sup>                                  | ≤ 60          | ✗                                  | -                                     | -                                        | -               | -                                           | -       | -        | ✗                    | -         | -                                                                   |
| Raw water <sup>7)</sup>                                    | ≤ 60          | ✗                                  | -                                     | -                                        | -               | -                                           | -       | ✗        | -                    | -         | -                                                                   |
| Swimming pool water (fresh water) <sup>7)</sup>            | ≤ 60          | ✗                                  | -                                     | -                                        | -               | -                                           | -       | ✗        | -                    | -         | Also applies to requirements as per DIN 19643                       |
| Dam water <sup>7)</sup>                                    | ≤ 60          | ✗                                  | -                                     | -                                        | -               | -                                           | -       | ✗        | -                    | -         | If solids are contained, contact KSB.                               |
| Drinking water                                             | ≤ 60          | -                                  | -                                     | ✗                                        | -               | -                                           | -       | -        |                      | -         | -                                                                   |
| Partly desalinated water <sup>5)</sup>                     | ≤ 90          | ✗                                  | -                                     | -                                        | -               | -                                           | -       | -        | ✗                    | -         | -                                                                   |
| Fully desalinated water                                    | ≤ 90          | -                                  | -                                     | ✗                                        | -               | -                                           | -       | -        | ✗                    | -         | Requirements for ultra-pure water cannot be met.                    |
| Fully desalinated water as boiler feed water <sup>5)</sup> | ≤ 90          | ✗                                  | -                                     | -                                        | -               | -                                           | -       | -        | ✗                    | -         | -                                                                   |
| Refrigerants, cooling brines                               |               |                                    |                                       |                                          |                 |                                             |         |          |                      |           |                                                                     |
| Cooling brine; inorganic, pH > 7.5, inhibited              | ≥ -30 to ≤ 25 | ✗                                  | -                                     | -                                        | -               | -                                           | -       | -        | ✗                    | -         | -                                                                   |
| Water with antifreeze, pH > 7.5 <sup>7)9)</sup>            | ≥ -30 to ≤ 90 | ✗                                  | -                                     | -                                        | -               | -                                           | -       | -        | ✗                    | -         | -                                                                   |

<sup>5)</sup> Treatment to VdTÜV 1466; additional requirement: O2 ≤ 0.02 mg/l

<sup>6)</sup> Only applies to shaft unit 17.

<sup>7)</sup> General criteria for results of water analysis: pH ≥ 7; chloride content (Cl) ≤ 250 mg/kg. Chlorine (Cl2) ≤ 0.6 mg/kg.

<sup>8)</sup> For open circuit

<sup>9)</sup> Antifreeze on ethylene glycol basis with inhibitors. Content: 20 % to 50 % (e.g. Antifrogen N), p ≤ 10 bar

<sup>10)</sup> No ultra-pure water! Conductivity at 25 °C: ≤ 800 µS/cm

| Fluid handled                                 | Temperature | Materials                          |                                       |                                          | Shaft seal      |                                             |         |          |                      |           | Comments              |  |
|-----------------------------------------------|-------------|------------------------------------|---------------------------------------|------------------------------------------|-----------------|---------------------------------------------|---------|----------|----------------------|-----------|-----------------------|--|
|                                               |             | Casing/impeller                    |                                       |                                          | Mechanical seal |                                             |         |          |                      |           |                       |  |
|                                               |             | Grey cast iron /<br>grey cast iron | Grey cast iron /<br>CrNiMo cast steel | CrNiMo cast steel /<br>CrNiMo cast steel | Q1Q1VGG         | AQ1VGG <sup>5)</sup><br>BQVGG <sup>6)</sup> | U3U3VGG | Q1Q1X4GG | BQ1EGG <sup>5)</sup> | Q12Q1M1GG |                       |  |
|                                               | [°C]        | G                                  | GC                                    | C                                        | 01              | 08                                          | 09      | 10       | 11                   | 70        |                       |  |
| Oils/emulsions                                |             |                                    |                                       |                                          |                 |                                             |         |          |                      |           |                       |  |
| Drilling/grinding emulsion                    | ≤ 60        | ✗                                  | -                                     | -                                        | -               | -                                           | ✗       | -        | -                    | -         | -                     |  |
| Oil-water emulsion                            | ≤ 60        | ✗                                  | -                                     | -                                        | -               | -                                           | ✗       | -        | -                    | -         | -                     |  |
| Cleaning agents                               |             |                                    |                                       |                                          |                 |                                             |         |          |                      |           |                       |  |
| Lyes for bottle rinsers <sup>11)</sup>        | ≤ 90        | ✗                                  | -                                     | -                                        | -               | -                                           | -       | ✗        | -                    | -         | EPDM only if oil-free |  |
| Acids                                         |             |                                    |                                       |                                          |                 |                                             |         |          |                      |           |                       |  |
| Acetic acid, percent-age ≤ 10 %               | ≤ 60        | -                                  | -                                     | ✗                                        | -               | -                                           | -       | -        | ✗                    | -         | -                     |  |
| Alum, potassium alu-minium sulphate up to 3 % | ≤ 80        | -                                  | -                                     | ✗                                        | ✗               | -                                           | -       | -        | -                    | -         | -                     |  |

## Overview of type series

Table 8: Key

| Symbol | Description                                                       |
|--------|-------------------------------------------------------------------|
| I      | Single mechanical seal (standard design)                          |
| D      | Available with double mechanical seal in back-to-back arrangement |
| T      | Available with double mechanical seal in tandem arrangement       |

Table 9: Available sizes and designs

| Size          | Shaft unit | Etaprime L |           | Etaprime B |           |
|---------------|------------|------------|-----------|------------|-----------|
|               |            | G          | GC, C     | G          | GC, C     |
| 032-032-100   | 17         | I / T      | -         | I / T      | -         |
| 032-032-120   | 17         | I / T      | I / T     | I / T      | I / T     |
| 040-040-110   | 17         | I / T      | I / T     | I / T      | I / T     |
| 040-040-140   | 25         | I / D / T  | I / D / T | I / D / T  | I / D / T |
| 050-050-130   | 25         | I / D / T  | I / D / T | I / D / T  | I / D / T |
| 050-050-160   | 25         | I / D / T  | I / D / T | I / D / T  | I / D / T |
| 065-065-150   | 25         | I / D / T  | I / D / T | I / D / T  | I / D / T |
| 065-065-180   | 35         | I / D / T  | I / D / T | I / D / T  | I / D / T |
| 080-080-170   | 35         | I / D / T  | I / D / T | I / D / T  | I / D / T |
| 080-080-190   | 35         | I / D / T  | -         | I / D / T  | -         |
| 080-080-200   | 35         | I / D / T  | I / D / T | I / D / T  | I / D / T |
| 100-100-240.1 | 35         | I / D / T  | -         | I / D / T  | -         |
| 100-100-240   | 35         | I / D / T  | -         | -          | -         |
| 125-125-260   | 35         | I / D / T  | -         | -          | -         |

<sup>11)</sup> With 2 % sodium hydroxide

## Overview of shaft seals

This does not apply to sizes 025-025-100, 032-032-120 and 040-040-110 (SU 17), for which only a single mechanical seal is suitable for this application.

Table 10: Key

| Symbol | Description      |
|--------|------------------|
| ✓      | very well suited |
| ○      | well suited      |
| -      | not permitted    |

Table 11: Selection table

| Fluid handled with a ... | Single mechanical seal | Double mechanical seal   |                     |
|--------------------------|------------------------|--------------------------|---------------------|
|                          |                        | Back-to-back arrangement | Tandem arrangement  |
| Solids content up to 3 % | ✓                      | ○                        | ○                   |
| Sand content up to 4 g/l | ✓                      | ○                        | ○                   |
| Particle size up to 3 mm | ✓                      | ○                        | ○                   |
| Particle size > 3 mm     | -                      | ✓ <sup>12)</sup>         | ○ <sup>12)13)</sup> |

Table 12: Maximum particle size

| Size                                          | 025-025-100 | 032-032-120 | 040-040-110 | 040-040-140 | 050-050-130 | 050-050-160 | 065-065-150 | 065-065-180 | 080-080-170 | 080-080-190 | 080-080-200 | 100-100-240.1 | 100-100-240 | 125-125-260 |
|-----------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|
| Single mechanical seal                        |             |             |             |             |             |             |             |             |             |             |             |               |             |             |
| Particle size [mm]                            | 6           | 4           | 6           | 3           |             |             |             |             |             |             |             |               |             |             |
| Double mechanical seal (Plan 54 as a minimum) |             |             |             |             |             |             |             |             |             |             |             |               |             |             |
| Particle size [mm]                            | -           |             |             | 5           | 8           | 6           | 8           | 7           | 10          | 12          | 7           | 7             | 8           | 9           |
| Shaft seal                                    |             |             |             |             |             |             |             |             |             |             |             |               |             |             |
| Solids content                                | ≤ 3 %       |             |             |             |             |             |             |             |             |             |             |               |             |             |
| Sand content                                  | ≤ 4 g/l     |             |             |             |             |             |             |             |             |             |             |               |             |             |

<sup>12)</sup> Plan 54 as a minimum. Barrier fluid system not included in the standard scope of supply.

<sup>13)</sup> Contact the manufacturer.

## Selection information

### Priming time

For a 1-metre horizontal length of the suction line and DN suction line = DN pump, the priming times are as follows.

When handling gaseous fluids, fluids which tend to froth or water with a temperature  $T > 60^\circ\text{C}$ , the pump will not be self-priming. In such cases, a check valve must be installed in the suction line.

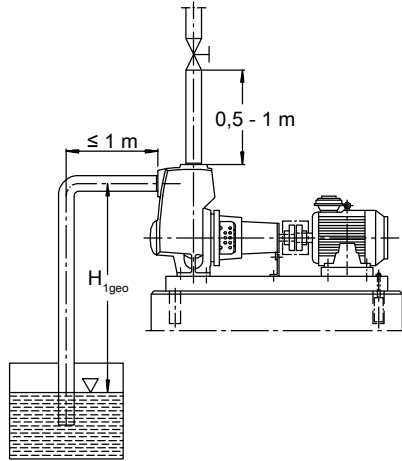


Fig. 1: Distances of suction line and discharge line

Table 13: Priming time in [seconds] at a static suction lift  $H_{1\text{geo}}$  of ... m, depending on the speed, 50 Hz

| Size          | Shaft unit | n = 2900 rpm |     |     |     |     |     | n = 1450 rpm |     |     |     |     |     |     |     |
|---------------|------------|--------------|-----|-----|-----|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-----|
|               |            | 2 m          | 4 m | 5 m | 6 m | 7 m | 8 m | 1 m          | 2 m | 3 m | 4 m | 5 m | 6 m | 7 m | 8 m |
| 025-025-100   | 17         | 40           | 145 | 415 | -   | -   | -   | 130          | -   | -   | -   | -   | -   | -   | -   |
| 032-032-120   | 17         | 30           | 90  | 135 | 190 | 255 | 360 | 100          | 210 | -   | -   | -   | -   | -   | -   |
| 040-040-110   | 17         | 60           | 100 | 215 | 420 | -   | -   | 120          | -   | -   | -   | -   | -   | -   | -   |
| 040-040-140   | 25         | 30           | 70  | 125 | 220 | 355 | 600 | 130          | -   | -   | -   | -   | -   | -   | -   |
| 050-050-130   | 25         | 50           | 120 | 195 | 260 | 345 | 440 | 210          | 410 | -   | -   | -   | -   | -   | -   |
| 050-050-160   | 25         | 30           | 70  | 105 | 170 | 265 | 430 | 210          | 430 | -   | -   | -   | -   | -   | -   |
| 065-065-150   | 25         | 60           | 120 | 165 | 260 | 375 | 570 | 190          | 350 | 540 | -   | -   | -   | -   | -   |
| 065-065-180   | 35         | 30           | 50  | 75  | 100 | 145 | 200 | 90           | 140 | 220 | 370 | -   | -   | -   | -   |
| 080-080-170   | 35         | 50           | 100 | 135 | 180 | 225 | 310 | 110          | 180 | 280 | 480 | -   | -   | -   | -   |
| 080-080-190   | 35         | 40           | 70  | 105 | 160 | 185 | 240 | 100          | 110 | 200 | 310 | -   | -   | -   | -   |
| 080-080-200   | 35         | 30           | 50  | 75  | 105 | 155 | 200 | 70           | 110 | 190 | 270 | 320 | 420 | -   | -   |
| 100-100-240.1 | 35         | 30           | 70  | 95  | 120 | 150 | 190 | 130          | 150 | 220 | 300 | 440 | -   | -   | -   |
| 100-100-240   | 35         | 35           | 70  | 85  | 110 | 160 | -   | 110          | 160 | 270 | 480 | -   | -   | -   | -   |
| 125-125-260   | 35         | 35           | 80  | 105 | 130 | 160 | 190 | 60           | 70  | 110 | 160 | 200 | 330 | 430 | 610 |

Table 14: Priming time in [seconds] at a static suction lift  $H_{1\text{geo}}$  of ... m, depending on the speed, 60 Hz

| Size          | Shaft unit | n = 3500 rpm |     |     |     |     |     | n = 1750 rpm |     |     |     |     |     |     |     |
|---------------|------------|--------------|-----|-----|-----|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-----|
|               |            | 2 m          | 4 m | 5 m | 6 m | 7 m | 8 m | 1 m          | 2 m | 3 m | 4 m | 5 m | 6 m | 7 m | 8 m |
| 025-025-100   | 17         | 30           | 85  | 135 | -   | -   | -   | 70           | 170 | -   | -   | -   | -   | -   | -   |
| 032-032-120   | 17         | 20           | 60  | 105 | 140 | 175 | 250 | 80           | 150 | 260 | -   | -   | -   | -   | -   |
| 040-040-110   | 17         | 30           | 85  | 125 | 200 | 265 | 470 | 90           | 180 | -   | -   | -   | -   | -   | -   |
| 040-040-140   | 25         | 25           | 50  | 85  | 120 | 145 | 230 | 80           | 150 | 200 | -   | -   | -   | -   | -   |
| 050-050-130   | 25         | 30           | 90  | 140 | 190 | 245 | 300 | 130          | 240 | 380 | -   | -   | -   | -   | -   |
| 050-050-160   | 25         | 25           | 55  | 75  | 150 | 215 | 280 | 130          | 260 | 480 | -   | -   | -   | -   | -   |
| 065-065-150   | 25         | 40           | 80  | 125 | 170 | 225 | 370 | 140          | 260 | 350 | 430 | -   | -   | -   | -   |
| 065-065-180   | 35         | 20           | 40  | 65  | 90  | 105 | 150 | 80           | 110 | 170 | 220 | 330 | -   | -   | -   |
| 080-080-170   | 35         | 30           | 80  | 105 | 130 | 165 | 220 | 90           | 130 | 200 | 320 | 480 | -   | -   | -   |
| 080-080-190   | 35         | 30           | 55  | 75  | 100 | 125 | 160 | 80           | 100 | 130 | 160 | 210 | 390 | -   | -   |
| 080-080-200   | 35         | 25           | 40  | 55  | 80  | 125 | 160 | 60           | 100 | 160 | 230 | 280 | 350 | -   | -   |
| 100-100-240.1 | 35         | 25           | 60  | 85  | 115 | 145 | 180 | 90           | 110 | 140 | 210 | 260 | 400 | -   | -   |
| 100-100-240   | 35         | 25           | 70  | 85  | 100 | 155 | 360 | 80           | 100 | 140 | 200 | 300 | -   | -   | -   |
| 125-125-260   | 35         | -            | -   | -   | -   | -   | -   | 50           | 60  | 80  | 115 | 170 | 220 | 300 | 400 |

### Pressure limits

| Size | Max. discharge-side operating pressure <sup>14)</sup> | Test pressure <sup>15)</sup> |
|------|-------------------------------------------------------|------------------------------|
|      | [bar]                                                 | [bar]                        |
| All  | 10,0                                                  | 15,0                         |

### Technical data

#### Motors

| Motor size | Number of motor poles | IEC frame size | 50 Hz |                    | 60 Hz |      |
|------------|-----------------------|----------------|-------|--------------------|-------|------|
|            |                       |                | P     | I                  | P     | I    |
|            |                       |                | [kW]  | [A] <sup>16)</sup> | [kW]  | [A]  |
| 0005       | 4                     | 80             | 0,6   | 1,4                | 0,6   | 1,4  |
| 0011       | 2                     | 80             | 1,1   | 2,6                | 1,3   | 2,6  |
| 0015       | 4                     | 90L            | 1,5   | 3,4                | 1,7   | 3,4  |
| 0022       | 2                     | 90L            | 2,2   | 4,6                | 2,5   | 4,6  |
| 0022       | 4                     | 100L           | 2,2   | 4,9                | 2,5   | 4,9  |
| 0030       | 4                     | 100L           | 3,0   | 6,3                | 3,4   | 6,3  |
| 0030       | 2                     | 100L           | 3,0   | 6,3                | 3,4   | 6,3  |
| 0040       | 4                     | 112M           | 4,0   | 8,3                | 4,6   | 8,3  |
| 0040       | 2                     | 112M           | 4,0   | 8,3                | 4,6   | 8,3  |
| 0055       | 2                     | 132S           | 5,5   | 11,0               | 6,3   | 11,0 |
| 0075       | 2                     | 132S           | 7,5   | 14,6               | 8,6   | 14,6 |
| 0110       | 2                     | 160M           | 11,0  | 20,7               | 12,6  | 20,7 |
| 0150       | 2                     | 160M           | 15,0  | 28,0               | 17,3  | 28,0 |
| 0185       | 2                     | 160L           | 18,5  | 33,0               | 21,3  | 33,0 |
| 0220       | 2                     | 180M           | 22,0  | 40,0               | 24,5  | 40,0 |
| 0300       | 2                     | 200L           | 30,0  | 54,0               | 34,5  | 54,0 |

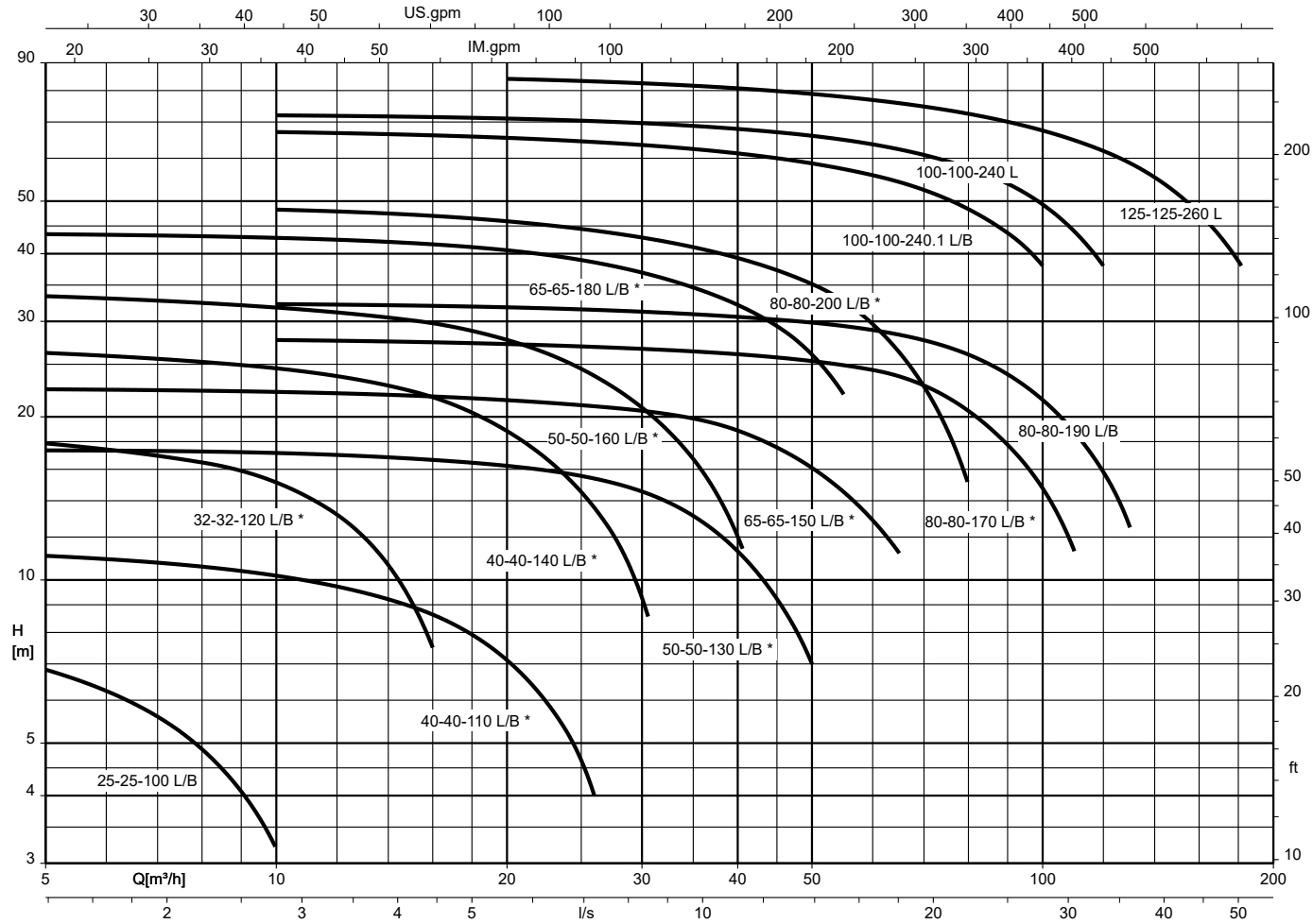
<sup>14)</sup> The sum of inlet pressure and shut-off head must not exceed the values indicated.

<sup>15)</sup> The casing components are checked for leakage by means of internal pressure tests with water.

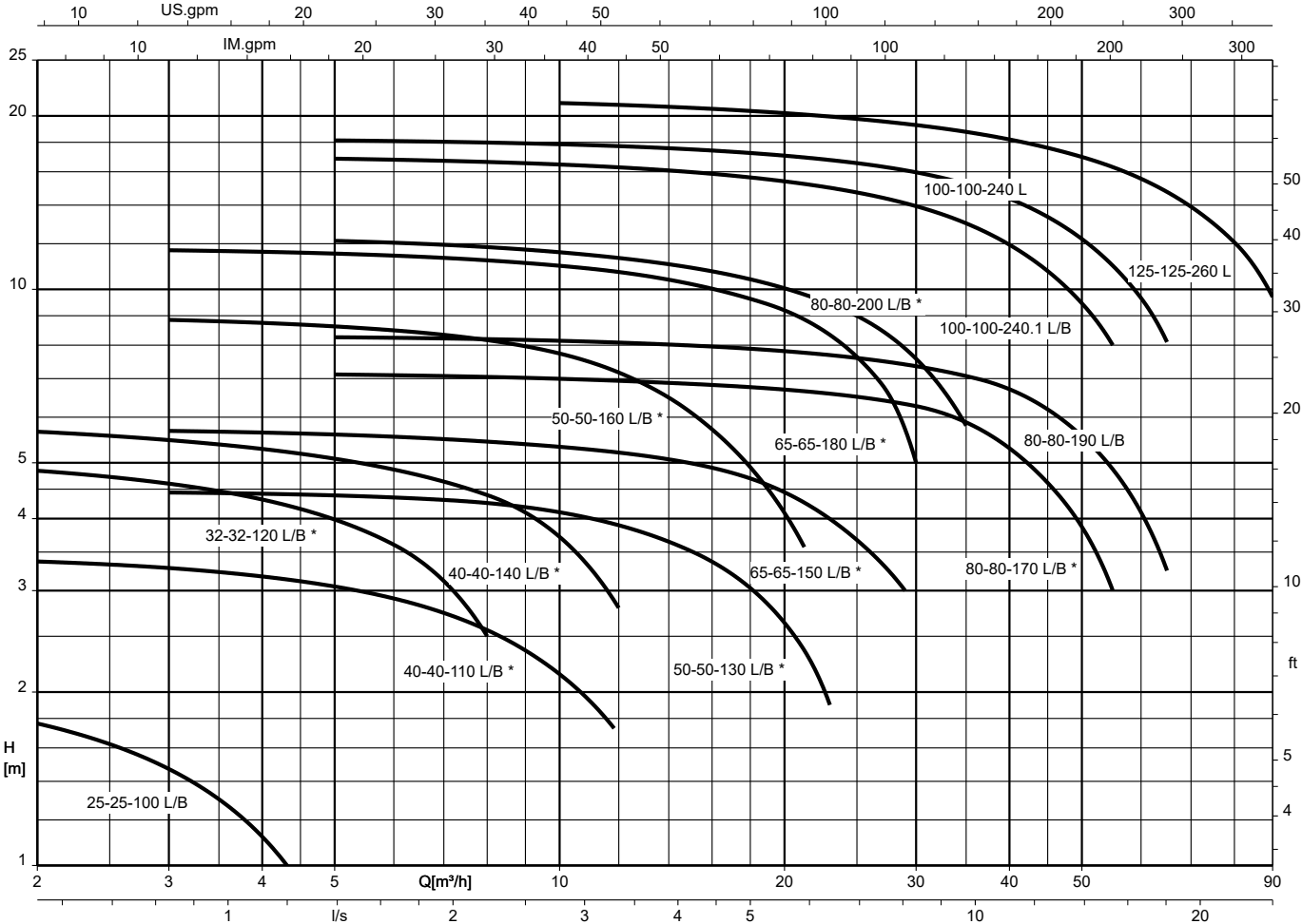
<sup>16)</sup> The currents indicated are for orientation only. For the exact currents refer to the motor name plate.

## Selection charts

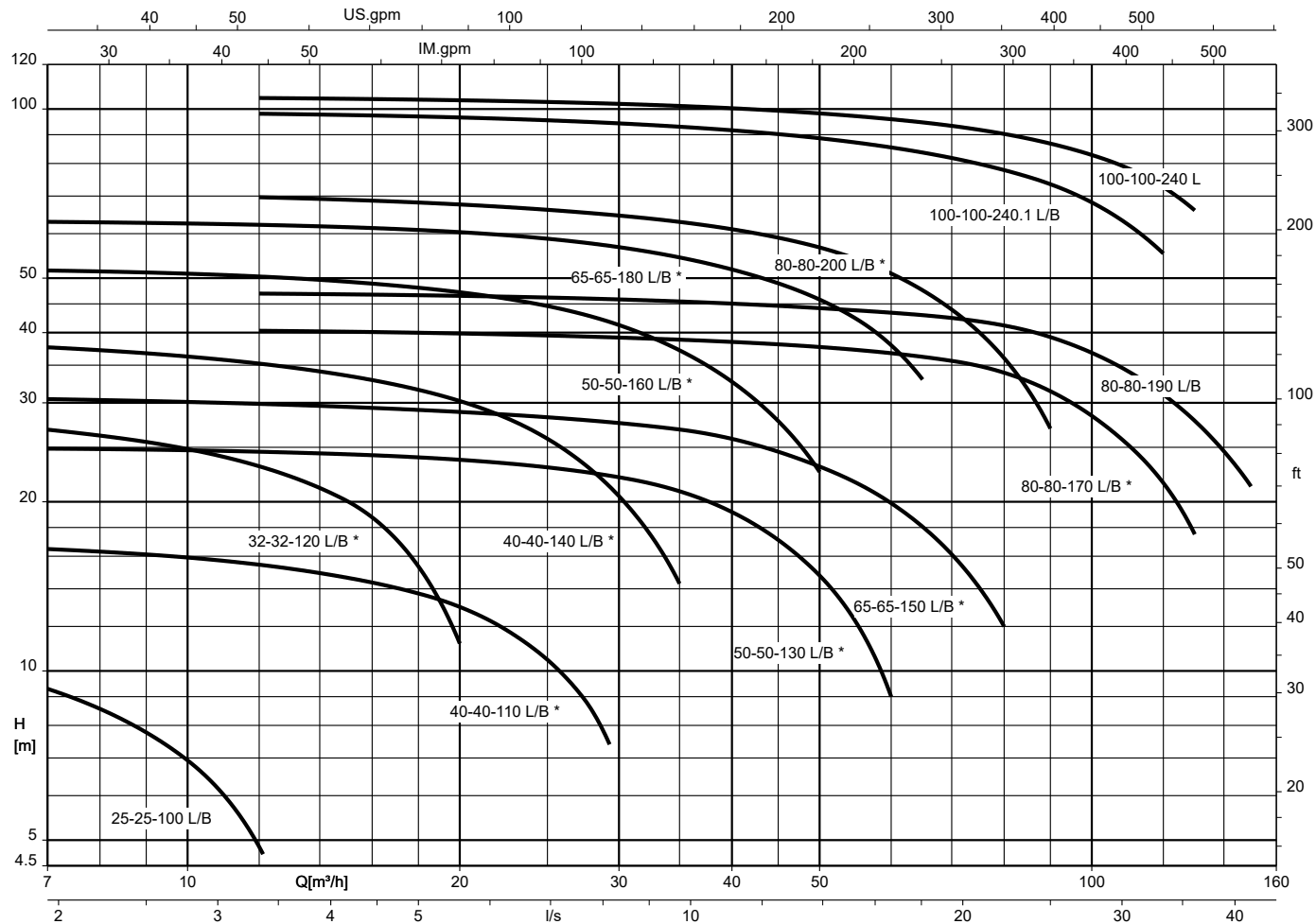
Etaprime L / Etaprime B, n = 2900 rpm (\* also available in stainless steel material variant)



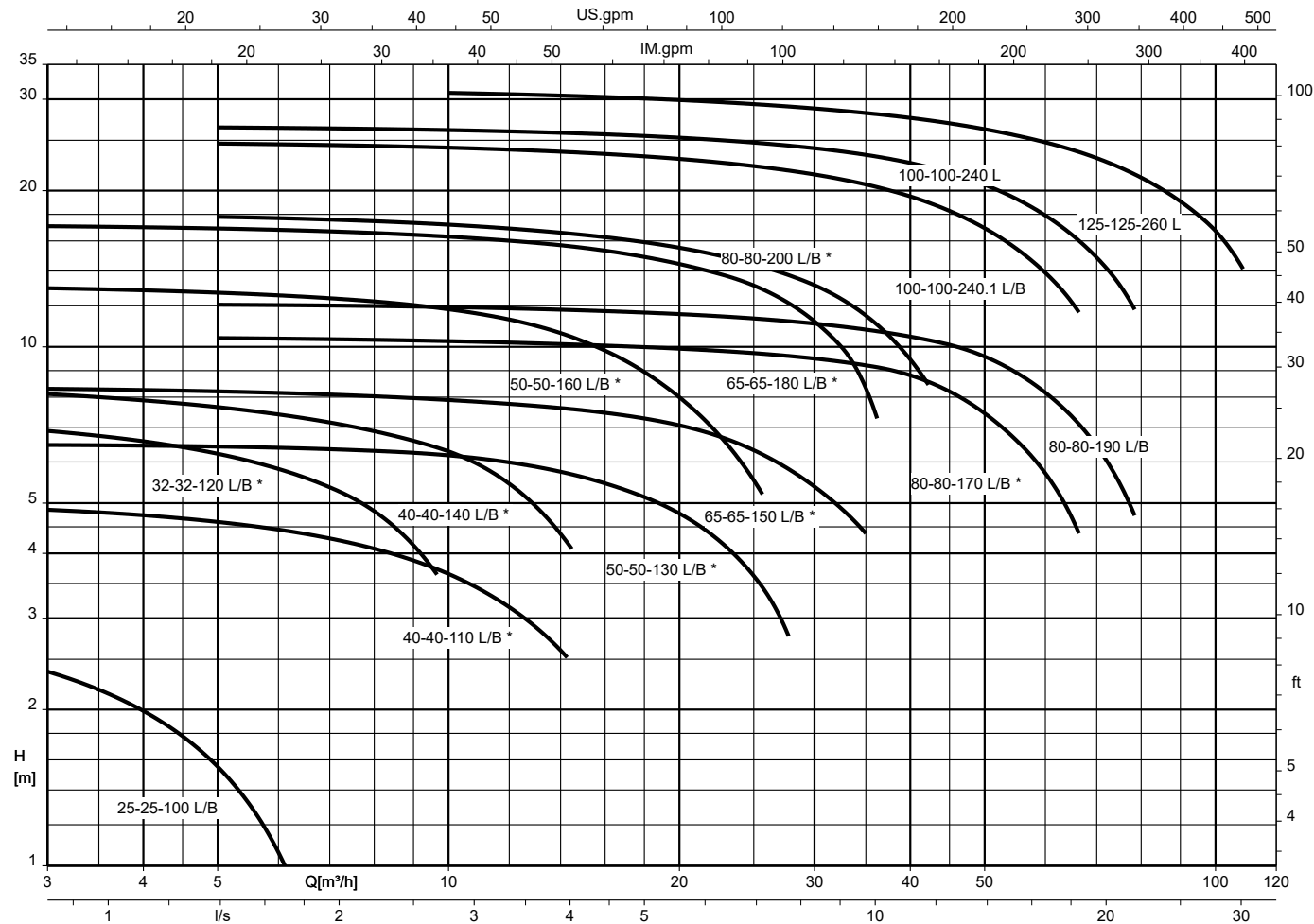
Etaprime L / Etaprime B, n = 1450 rpm (\* also available in stainless steel material variant)



Etaprime L / Etaprime B, n = 3500 rpm (\* also available in stainless steel material variant)

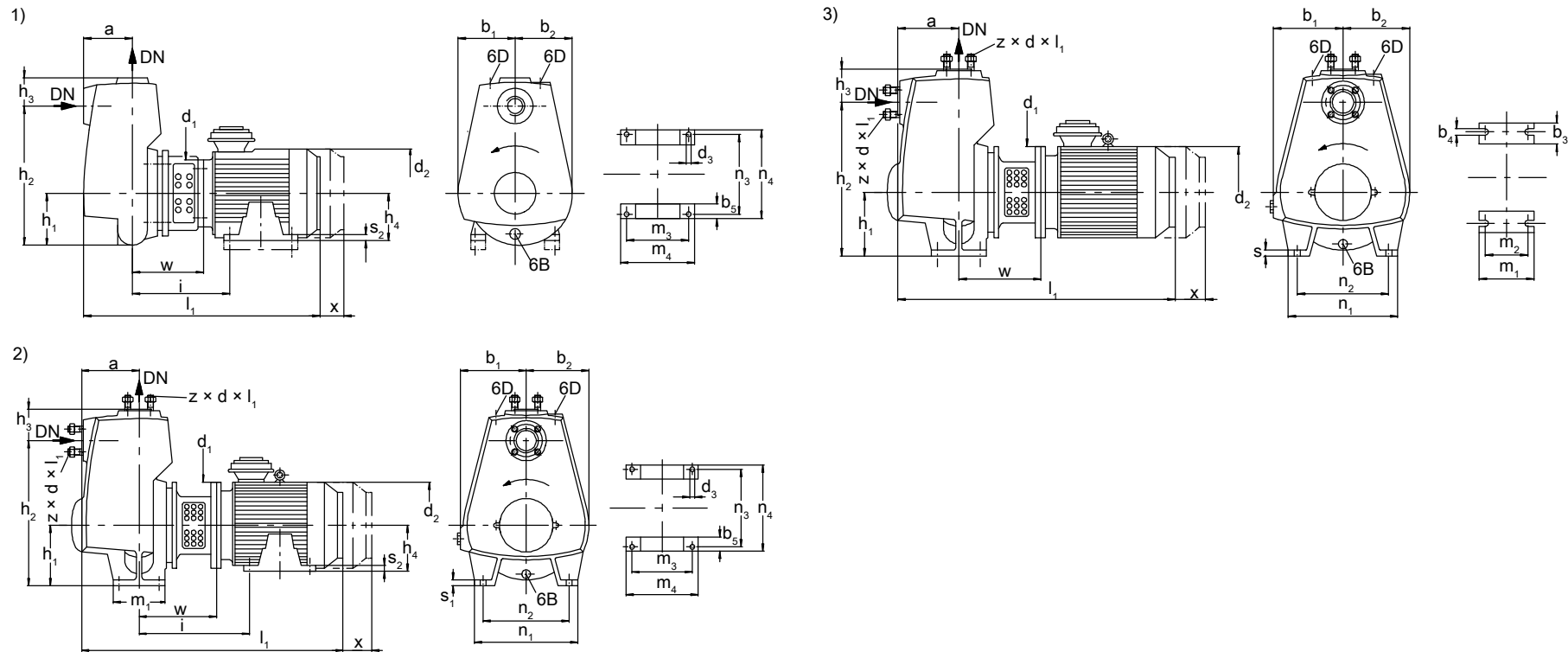


Etaprime L / Etaprime B, n = 1750 rpm (\* also available in stainless steel material variant)



# Dimensions and connections

## Etaprime B 025-025-100 to 100-100-240.1



**Fig. 2: Dimensions of Etaprime B**

|     |                                                  |     |                                                 |
|-----|--------------------------------------------------|-----|-------------------------------------------------|
| 1)  | Pump set with motor foot and motor $\leq 4.0$ kW | 3)  | Pump set with pump foot and motor $\leq 4.0$ kW |
| 2)  | Pump set with motor foot and motor $\geq 5.5$ kW |     |                                                 |
| 6B  | Fluid drain                                      | 6D  | Fluid priming and venting                       |
| 10A | Barrier fluid outlet ( $\Rightarrow$ Page 22)    | 10E | Barrier fluid inlet ( $\Rightarrow$ Page 22)    |
| 24A | Quench liquid outlet ( $\Rightarrow$ Page 22)    | 24E | Quench liquid inlet ( $\Rightarrow$ Page 22)    |

Table 15: Connections

| Size          | 6B <sup>17)</sup> | 6D <sup>17)</sup> |
|---------------|-------------------|-------------------|
| 025-025-100   | G 1/8             | G 3/8             |
| 032-032-120   | G 1/8             | G 3/8             |
| 040-040-110   | G 1/8             | G 3/8             |
| 040-040-140   | G 3/8             | G 3/8             |
| 050-050-130   | G 3/8             | G 3/8             |
| 050-050-160   | G 3/8             | G 3/8             |
| 065-065-150   | G 3/8             | G 3/8             |
| 065-065-180   | G 3/8             | G 3/8             |
| 080-080-170   | G 1/2             | G 1/2             |
| 080-080-190   | G 1/2             | G 1/2             |
| 080-080-200   | G 1/2             | G 1/2             |
| 100-100-240.1 | G 1/2             | G 1/2             |

Table 16: Flange dimensions, shaft unit 17

| Size        | Connection        |                   |
|-------------|-------------------|-------------------|
|             | Standard          | Optional          |
|             | DN <sup>18)</sup> | DN <sup>19)</sup> |
| 025-025-100 | Rp 1              | NPT 1             |
| 032-032-120 | Rp 1 1/4          | NPT 1 1/4         |
| 040-040-110 | Rp 1 1/2          | NPT 1 1/2         |

Table 17: Flange dimensions, shaft units 25, 35

| Flanged connection                                | DN        | Bolt circle diameter | z | d          | l <sub>1</sub> |
|---------------------------------------------------|-----------|----------------------|---|------------|----------------|
| Standard:                                         | 40        | 110                  | 4 | M16        | 40             |
| ▪ Drilled to EN 1092-1 (material variant C)       | 50        | 125                  | 4 | M16        | 40             |
| ▪ Drilled to EN 1092-2 (material variant G / GC)  | 65        | 145                  | 4 | M16        | 40             |
|                                                   | 80        | 160                  | 8 | M16        | 45             |
|                                                   | 100       | 180                  | 8 | M16        | 45             |
| Optional:                                         | NPS 1 1/2 | 98,6                 | 4 | UNC 1/2-13 | 40             |
| ▪ Drilled to ASME B16.1 (material variant G / GC) | NPS 2     | 120,7                | 4 | UNC 5/8-11 | 40             |
| ▪ Drilled to ASME B16.5 (material variant C)      | NPS 2 1/2 | 139,7                | 4 | UNC 5/8-11 | 40             |
|                                                   | NPS 3     | 152,4                | 4 | UNC 5/8-11 | 40             |
|                                                   | NPS 4     | 190,5                | 8 | UNC 5/8-11 | 45             |

<sup>17)</sup> Threaded connection to ISO 228/1<sup>18)</sup> Standard connection to ISO 7/1<sup>19)</sup> Optional connection to ASME B1.20.1

Table 18: Dimensions [mm]

| Size                          | n     |      |      |      | P <sub>N</sub><br>[kW] | DN | Pump       |                |                |                |                |                |                |                |                |                |                |                |                |                 |                   |                |                |                |                |                |                |                |                |                |                |                 |     |  |
|-------------------------------|-------|------|------|------|------------------------|----|------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----|--|
|                               | 1450  | 1750 | 2900 | 3500 |                        |    | a          | b <sub>1</sub> | b <sub>2</sub> | b <sub>3</sub> | b <sub>4</sub> | b <sub>5</sub> | d <sub>1</sub> | d <sub>2</sub> | d <sub>3</sub> | h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> | h <sub>4</sub> | i <sub>20</sub> | l <sub>1 20</sub> | m <sub>1</sub> | m <sub>2</sub> | m <sub>3</sub> | m <sub>4</sub> | n <sub>1</sub> | n <sub>2</sub> | n <sub>3</sub> | n <sub>4</sub> | s <sub>1</sub> | s <sub>2</sub> | w <sub>20</sub> | x   |  |
|                               | [rpm] |      |      |      |                        |    | (ap-prox.) |                |                |                |                |                |                |                |                |                |                |                |                |                 |                   |                |                |                |                |                |                |                |                |                |                |                 |     |  |
| 025-025-100 <sup>21)</sup>    | ✗     | ✗    | -    | -    | 0,55                   | 25 | 70         | 104            | 95             | -              | -              | 33             | 120            | 160            | 9              | 87             | 227            | 38             | 80             | 152             | 441               | -              | -              | 100            | 125            | -              | -              | 125            | 153            | -              | 10             | 102             | 60  |  |
| 025-025-100 <sup>21)</sup>    | -     | -    | ✗    | ✗    | 1,10                   | 25 | 70         | 104            | 95             | -              | -              | 33             | 120            | 160            | 9              | 87             | 227            | 38             | 80             | 152             | 473               | -              | -              | 100            | 125            | -              | -              | 125            | 153            | -              | 10             | 102             | 60  |  |
| 032-032-120 <sup>21)</sup>    | ✗     | ✗    | -    | -    | 0,55                   | 32 | 95         | 118            | 95             | -              | -              | 33             | 120            | 160            | 9              | 90             | 239            | 46             | 80             | 149             | 463               | -              | -              | 100            | 125            | -              | -              | 125            | 153            | -              | 10             | 99              | 60  |  |
| 032-032-120 <sup>21)</sup>    | -     | -    | ✗    | -    | 1,10                   | 32 | 95         | 118            | 95             | -              | -              | 33             | 120            | 160            | 9              | 90             | 239            | 46             | 80             | 149             | 495               | -              | -              | 100            | 125            | -              | -              | 125            | 153            | -              | 10             | 99              | 60  |  |
| 040-040-110 <sup>21)</sup>    | ✗     | ✗    | -    | -    | 0,55                   | 40 | 105        | 118            | 110            | -              | -              | 33             | 120            | 160            | 9              | 101            | 256            | 55             | 80             | 154             | 478               | -              | -              | 100            | 125            | -              | -              | 125            | 153            | -              | 10             | 104             | 60  |  |
| 040-040-110 <sup>21)</sup>    | -     | -    | ✗    | ✗    | 1,10                   | 40 | 105        | 118            | 110            | -              | -              | 33             | 120            | 160            | 9              | 101            | 256            | 55             | 80             | 154             | 510               | -              | -              | 100            | 125            | -              | -              | 125            | 153            | -              | 10             | 104             | 60  |  |
| 040-040-140                   | ✗     | -    | -    | -    | 0,55                   | 40 | 115        | 128            | 115            | 57             | 16             | -              | 200            | 162            | -              | 112            | 284            | 73             | -              | -               | 550               | 100            | 70             | -              | -              | 220            | 160            | -              | -              | 13             | -              | 166             | 100 |  |
| 040-040-140                   | -     | ✗    | -    | -    | 1,50                   | 40 | 115        | 128            | 115            | 57             | 16             | -              | 200            | 190            | -              | 112            | 284            | 73             | -              | -               | 635               | 100            | 70             | -              | -              | 220            | 160            | -              | -              | 13             | -              | 166             | 100 |  |
| 040-040-140                   | -     | -    | ✗    | -    | 2,20                   | 40 | 115        | 128            | 115            | 57             | 16             | -              | 200            | 190            | -              | 112            | 284            | 73             | -              | -               | 635               | 100            | 70             | -              | -              | 220            | 160            | -              | -              | 13             | -              | 166             | 100 |  |
| 040-040-140                   | -     | -    | ✗    | -    | 3,00                   | 40 | 115        | 128            | 115            | 57             | 16             | -              | 250            | 213            | -              | 112            | 284            | 73             | -              | -               | 685               | 100            | 70             | -              | -              | 220            | 160            | -              | -              | 13             | -              | 180             | 100 |  |
| 040-040-140                   | -     | -    | -    | ✗    | 4,00                   | 40 | 115        | 128            | 115            | 57             | 16             | -              | 250            | 235            | -              | 112            | 284            | 73             | -              | -               | 667               | 100            | 70             | -              | -              | 220            | 160            | -              | -              | 13             | -              | 180             | 100 |  |
| 040-040-140 <sup>22)23)</sup> | -     | -    | -    | ✗    | 5,50                   | 40 | 115        | 128            | 115            | 57             | 16             | 55             | 300            | 274            | 12             | 112            | 284            | 73             | 132            | 292             | 731               | 100            | 70             | 140            | 220            | 220            | 160            | 216            | 270            | 13             | 12             | 203             | 100 |  |
| 050-050-130                   | ✗     | -    | -    | -    | 0,55                   | 50 | 130        | 138            | 128            | 55             | 16             | -              | 200            | 162            | -              | 132            | 317            | 78             | -              | -               | 565               | 100            | 70             | -              | -              | 250            | 190            | -              | -              | 17             | -              | 166             | 100 |  |
| 050-050-130                   | -     | ✗    | -    | -    | 1,50                   | 50 | 130        | 138            | 128            | 55             | 16             | -              | 200            | 190            | -              | 132            | 317            | 78             | -              | -               | 650               | 100            | 70             | -              | -              | 250            | 190            | -              | -              | 17             | -              | 166             | 100 |  |
| 050-050-130                   | -     | -    | ✗    | -    | 2,20                   | 50 | 130        | 138            | 128            | 55             | 16             | -              | 200            | 190            | -              | 132            | 317            | 78             | -              | -               | 650               | 100            | 70             | -              | -              | 250            | 190            | -              | -              | 17             | -              | 166             | 100 |  |
| 050-050-130                   | -     | -    | ✗    | -    | 3,00                   | 50 | 130        | 138            | 128            | 55             | 16             | -              | 250            | 213            | -              | 132            | 317            | 78             | -              | -               | 700               | 100            | 70             | -              | -              | 250            | 190            | -              | -              | 17             | -              | 180             | 100 |  |
| 050-050-130                   | -     | -    | -    | ✗    | 4,00                   | 50 | 130        | 138            | 128            | 55             | 16             | -              | 250            | 235            | -              | 132            | 317            | 78             | -              | -               | 682               | 100            | 70             | -              | -              | 250            | 190            | -              | -              | 17             | -              | 180             | 100 |  |
| 050-050-130                   | -     | -    | -    | ✗    | 5,50                   | 50 | 130        | 138            | 128            | 55             | 16             | 55             | 300            | 274            | 12             | 132            | 317            | 78             | 132            | 292             | 746               | 100            | 70             | 140            | 220            | 250            | 190            | 216            | 270            | 17             | 12             | 203             | 100 |  |
| 050-050-160                   | ✗     | -    | -    | -    | 0,55                   | 50 | 130        | 145            | 126            | 55             | 16             | -              | 200            | 162            | -              | 132            | 327            | 75             | -              | -               | 565               | 100            | 70             | -              | -              | 250            | 190            | -              | -              | 17             | -              | 166             | 100 |  |
| 050-050-160                   | -     | ✗    | -    | -    | 1,50                   | 50 | 130        | 145            | 126            | 55             | 16             | -              | 200            | 190            | -              | 132            | 327            | 75             | -              | -               | 650               | 100            | 70             | -              | -              | 250            | 190            | -              | -              | 17             | -              | 166             | 100 |  |
| 050-050-160                   | -     | -    | ✗    | -    | 4,00                   | 50 | 130        | 145            | 126            | 55             | 16             | -              | 250            | 235            | -              | 132            | 327            | 75             | -              | -               | 682               | 100            | 70             | -              | -              | 250            | 190            | -              | -              | 17             | -              | 180             | 100 |  |
| 050-050-160                   | -     | -    | ✗    | ✗    | 5,50                   | 50 | 130        | 145            | 126            | 55             | 16             | 55             | 300            | 274            | 12             | 132            | 327            | 75             | 132            | 292             | 746               | 100            | 70             | 140            | 220            | 250            | 190            | 216            | 270            | 17             | 12             | 203             | 100 |  |
| 050-050-160                   | -     | -    | -    | ✗    | 7,50                   | 50 | 130        | 145            | 126            | 55             | 16             | 55             | 300            | 274            | 12             | 132            | 327            | 75             | 132            | 292             | 790               | 100            | 70             | 140            | 220            | 250            | 190            | 216            | 270            | 17             | 12             | 203             | 100 |  |
| 065-065-150                   | ✗     | -    | -    | -    | 0,55                   | 65 | 140        | 155            | 149            | 55             | 16             | -              | 200            | 162            | -              | 160            | 370            | 85             | -              | -               | 575               | 125            | 95             | -              | -              | 270            | 212            | -              | -              | 20             | -              | 166             | 100 |  |
| 065-065-150                   | -     | ✗    | -    | -    | 1,50                   | 65 | 140        | 155            | 149            | 55             | 16             | -              | 200            | 190            | -              | 160            | 370            | 85             | -              | -               | 660               | 125            | 95             | -              | -              | 270            | 212            | -              | -              | 20             | -              | 166             | 100 |  |
| 065-065-150                   | -     | -    | ✗    | -    | 4,00                   | 65 | 140        | 155            | 149            | 55             | 16             | -              | 250            | 235            | -              | 160            | 370            | 85             | -              | -               | 692               | 125            | 95             | -              | -              | 270            | 212            | -              | -              | 20             | -              | 180             | 100 |  |
| 065-065-150 <sup>22)23)</sup> | -     | -    | ✗    | ✗    | 5,50                   | 65 | 140        | 155            | 149            | 55             | 16             | 55             | 300            | 274            | 12             | 160            | 370            | 85             | 132            | 292             | 756               | 125            | 95             | 140            | 220            | 270            | 212            | 216            | 270            | 20             | 12             | 203             | 100 |  |
| 065-065-150 <sup>22)23)</sup> | -     | -    | -    | ✗    | 7,50                   | 65 | 140        | 155            | 149            | 55             | 16             | 55             | 300            | 274            | 12             | 160            | 370            | 85             | 132            | 292             | 800               | 125            | 95             | 140            | 220            | 270            | 212            | 216            | 270            | 20             | 12             | 203             | 100 |  |

<sup>20</sup> Dimensions for variants with a single mechanical seal

<sup>21</sup> Shim the motor feet by 30 mm.

<sup>22</sup> If h<sub>1</sub> > h<sub>4</sub>: shim the motor feet.

<sup>23</sup> If h<sub>1</sub> < h<sub>4</sub>: shim the pump feet.

| Size                            | n     |      |      |      | P <sub>N</sub><br>[kW] | DN  | Pump        |                |                |                |                |                |                |                |                |                |                |                |                |                 |                   |                |                |                |                |                |                |                |                |                |                |                 |     |  |
|---------------------------------|-------|------|------|------|------------------------|-----|-------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----|--|
|                                 | 1450  | 1750 | 2900 | 3500 |                        |     | a           | b <sub>1</sub> | b <sub>2</sub> | b <sub>3</sub> | b <sub>4</sub> | b <sub>5</sub> | d <sub>1</sub> | d <sub>2</sub> | d <sub>3</sub> | h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> | h <sub>4</sub> | i <sub>20</sub> | l <sub>1 20</sub> | m <sub>1</sub> | m <sub>2</sub> | m <sub>3</sub> | m <sub>4</sub> | n <sub>1</sub> | n <sub>2</sub> | n <sub>3</sub> | n <sub>4</sub> | s <sub>1</sub> | s <sub>2</sub> | w <sub>20</sub> | x   |  |
|                                 | [rpm] |      |      |      |                        |     | (ap-prox. ) |                |                |                |                |                |                |                |                |                |                |                |                |                 |                   |                |                |                |                |                |                |                |                |                |                |                 |     |  |
| 065-065-180                     | ✗     | ✗    | -    | -    | 2,20                   | 65  | 140         | 158            | 138            | 55             | 16             | -              | 250            | 213            | -              | 160            | 376            | 89             | -              | -               | 740               | 125            | 95             | -              | -              | 270            | 212            | -              | -              | 18             | -              | 210             | 140 |  |
| 065-065-180 <sup>22)23)</sup>   | -     | -    | ✗    | -    | 5,50                   | 65  | 140         | 158            | 138            | 55             | 16             | 55             | 300            | 274            | 12             | 160            | 376            | 89             | 132            | 322             | 786               | 125            | 95             | 140            | 220            | 270            | 212            | 216            | 270            | 18             | 12             | 233             | 140 |  |
| 065-065-180 <sup>22)23)</sup>   | -     | -    | ✗    | -    | 7,50                   | 65  | 140         | 158            | 138            | 55             | 16             | 55             | 300            | 274            | 12             | 160            | 376            | 89             | 132            | 322             | 830               | 125            | 95             | 140            | 220            | 270            | 212            | 216            | 270            | 18             | 12             | 233             | 140 |  |
| 065-065-180                     | -     | -    | -    | ✗    | 11,00                  | 65  | 140         | 158            | 138            | 55             | 16             | 70             | 350            | 325            | 15             | 160            | 376            | 89             | 160            | 374             | 952               | 125            | 95             | 210            | 310            | 270            | 212            | 254            | 323            | 18             | 15             | 266             | 140 |  |
| 080-080-170                     | ✗     | ✗    | -    | -    | 2,20                   | 80  | 156         | 173            | 168            | 65             | 18             | -              | 250            | 213            | -              | 160            | 380            | 104            | -              | -               | 756               | 140            | 106            | -              | -              | 310            | 240            | -              | -              | 18             | -              | 210             | 140 |  |
| 080-080-170 <sup>22)23)</sup>   | -     | -    | ✗    | -    | 7,50                   | 80  | 156         | 173            | 168            | 65             | 18             | 55             | 300            | 274            | 12             | 160            | 380            | 104            | 132            | 322             | 846               | 140            | 106            | 140            | 220            | 310            | 240            | 216            | 270            | 18             | 12             | 233             | 140 |  |
| 080-080-170                     | -     | -    | -    | ✗    | 15,00                  | 80  | 156         | 173            | 168            | 65             | 18             | 70             | 350            | 325            | 15             | 160            | 380            | 104            | 160            | 374             | 968               | 140            | 106            | 210            | 310            | 310            | 240            | 254            | 323            | 18             | 15             | 266             | 140 |  |
| 080-080-190                     | ✗     | ✗    | -    | -    | 2,20                   | 80  | 170         | 188            | 181            | 65             | 20             | -              | 250            | 213            | -              | 180            | 420            | 107            | -              | -               | 770               | 160            | 120            | -              | -              | 345            | 280            | -              | -              | 22             | -              | 210             | 140 |  |
| 080-080-190 <sup>22)23)</sup>   | -     | -    | -    | ✗    | 11,00                  | 80  | 170         | 188            | 181            | 65             | 20             | 70             | 350            | 325            | 15             | 180            | 420            | 107            | 160            | 374             | 982               | 160            | 120            | 210            | 310            | 345            | 280            | 254            | 323            | 22             | 15             | 266             | 140 |  |
| 080-080-190 <sup>22)23)</sup>   | -     | -    | -    | ✗    | 18,50                  | 80  | 170         | 188            | 181            | 65             | 20             | 70             | 350            | 325            | 15             | 180            | 420            | 107            | 160            | 374             | 1018              | 160            | 120            | 254            | 314            | 345            | 280            | 254            | 323            | 22             | 15             | 266             | 140 |  |
| 080-080-200                     | ✗     | ✗    | -    | -    | 2,20                   | 80  | 154         | 172            | 152            | 65             | 20             | -              | 250            | 213            | -              | 160            | 378            | 107            | -              | -               | 754               | 140            | 100            | -              | -              | 285            | 220            | -              | -              | 22             | -              | 210             | 140 |  |
| 080-080-200                     | -     | -    | ✗    | -    | 11,00                  | 80  | 154         | 172            | 152            | 65             | 20             | 70             | 350            | 325            | 15             | 160            | 378            | 107            | 160            | 374             | 966               | 140            | 100            | 210            | 310            | 285            | 220            | 254            | 323            | 22             | 15             | 266             | 140 |  |
| 080-080-200                     | -     | -    | -    | ✗    | 15,00                  | 80  | 154         | 172            | 152            | 65             | 20             | 70             | 350            | 325            | 15             | 160            | 378            | 107            | 160            | 374             | 966               | 140            | 100            | 210            | 310            | 285            | 220            | 254            | 323            | 22             | 15             | 266             | 140 |  |
| 100-100-240.1                   | ✗     | -    | -    | -    | 2,20                   | 100 | 182         | 203            | 178            | 68             | 20             | -              | 250            | 213            | -              | 200            | 457            | 127            | -              | -               | 771               | 140            | 100            | -              | -              | 330            | 260            | -              | -              | 18             | -              | 199             | 140 |  |
| 100-100-240.1                   | ✗     | ✗    | -    | -    | 3,00                   | 100 | 182         | 203            | 178            | 68             | 20             | -              | 250            | 213            | -              | 200            | 457            | 127            | -              | -               | 771               | 140            | 100            | -              | -              | 330            | 260            | -              | -              | 18             | -              | 199             | 140 |  |
| 100-100-240.1                   | -     | ✗    | -    | -    | 4,00                   | 100 | 182         | 203            | 178            | 68             | 20             | -              | 250            | 235            | -              | 200            | 457            | 127            | -              | -               | 753               | 140            | 100            | -              | -              | 330            | 260            | -              | -              | 18             | -              | 199             | 140 |  |
| 100-100-240.1 <sup>22)23)</sup> | -     | -    | ✗    | -    | 18,50                  | 100 | 182         | 203            | 178            | 68             | 20             | 70             | 350            | 325            | 15             | 200            | 457            | 127            | 160            | 363             | 1019              | 140            | 100            | 254            | 314            | 330            | 260            | 254            | 323            | 18             | 15             | 255             | 140 |  |
| 100-100-240.1                   | -     | -    | -    | ✗    | 30,00                  | 100 | 182         | 203            | 178            | 68             | 20             | 85             | 400            | 422            | 19             | 200            | 457            | 127            | 200            | 388             | 1106              | 140            | 100            | 305            | 388            | 330            | 260            | 318            | 404            | 18             | 19             | 255             | 140 |  |

## Flange designs

Table 19: Symbols key

| Symbol   | Description |
|----------|-------------|
| <b>x</b> | Standard    |
| <b>o</b> | Option      |

Table 20: Threaded connections, shaft unit 17

| Size        | Shaft unit | Material variant          |          |                      |          |
|-------------|------------|---------------------------|----------|----------------------|----------|
|             |            | G/GC/C                    |          |                      |          |
|             |            | Connection pipe thread to |          |                      |          |
|             |            | ISO 7-1<br>PN10           |          | ASME B1.20.1<br>PN10 |          |
| 025-025-100 | 17         | Rp 1                      | <b>x</b> | NPT 1                | <b>o</b> |
| 032-032-120 | 17         | Rp 1 1/4                  | <b>x</b> | NPT 1 1/4            | <b>o</b> |
| 040-040-110 | 17         | Rp 1 1/2                  | <b>x</b> | NPT 1 1/2            | <b>o</b> |

Table 21: Flanged connections<sup>24)</sup> shaft units 25, 35

| Size          | Shaft unit | Nominal size to |           | Material variant     |                     |                   |                     |
|---------------|------------|-----------------|-----------|----------------------|---------------------|-------------------|---------------------|
|               |            |                 |           | G/GC                 |                     | C                 |                     |
|               |            |                 |           | Flange dimensions to |                     |                   |                     |
|               |            |                 |           | EN 1092-2            |                     | EN 1092-1         |                     |
|               |            |                 |           | Drilled to           |                     |                   |                     |
|               |            | EN 1092         | ASME      | EN 1092-2<br>PN16    | ASME B16.1<br>CL125 | EN 1092-1<br>PN16 | ASME B16.5<br>CL150 |
| 040-040-110   | 25         | DN 40           | NPS 1 1/2 | ✗                    | o                   | ✗                 | o                   |
| 050-050-130   |            | DN 50           | NPS 2     | ✗                    | o                   | ✗                 | o                   |
| 050-050-160   |            | DN 50           | NPS 2     | ✗                    | o                   | ✗                 | o                   |
| 065-065-150   |            | DN 65           | NPS 2 1/2 | ✗                    | o                   | ✗                 | o                   |
| 065-065-180   | 35         | DN 65           | NPS 2 1/2 | ✗                    | o                   | ✗                 | o                   |
| 080-080-170   |            | DN 80           | NPS 3     | ✗                    | o                   | ✗                 | o                   |
| 080-080-190   |            | DN 80           | NPS 3     | ✗                    | o                   | -                 | -                   |
| 080-080-200   |            | DN 80           | NPS 3     | ✗                    | o                   | ✗                 | o                   |
| 100-100-240.1 |            | DN 100          | NPS 4     | ✗                    | o                   | -                 | -                   |

<sup>24)</sup> Type RF (Raised Face)

## Interchangeability of Etaprime B and Etaprime L pump components

Components featuring the same number in a column are interchangeable.

Table 22: Symbols key

| Symbol | Description                               |
|--------|-------------------------------------------|
| *      | Component interchangeable with Etaprime L |
| ○      | Components differ                         |
| ✕      | Component not fitted                      |

Table 23: Interchangeability of Etaprime B and Etaprime L pump components and interchangeability of components among each other

| Size          | Shaft unit | Description   |              |       |          |                 |              |
|---------------|------------|---------------|--------------|-------|----------|-----------------|--------------|
|               |            | Volute casing | Casing cover | Shaft | Impeller | Mechanical seal | Shaft sleeve |
|               |            | Part No.      |              |       |          |                 |              |
|               |            | 102           | 161          | 210   | 230      | 433             | 523          |
| 025-025-100   | 17         | ○*            | ✕            | 1     | ○*       | 1*              | ✕            |
| 032-032-120   | 17         | ○*            | ✕            | 1     | ○*       | 1*              | ✕            |
| 040-040-110   | 17         | ○*            | ✕            | 1     | ○*       | 1*              | ✕            |
| 040-040-140   | 25         | ○*            | ○*           | 2     | ○*       | 2*              | 1*           |
| 050-050-130   | 25         | ○*            | ○*           | 2     | ○*       | 2*              | 1*           |
| 050-050-160   | 25         | ○*            | 1*           | 2     | ○*       | 2*              | 1*           |
| 065-065-150   | 25         | ○*            | 1*           | 2     | ○*       | 2*              | 1*           |
| 065-065-180   | 35         | ○*            | ○*           | 3     | ○*       | 3*              | 2*           |
| 080-080-170   | 35         | ○*            | ○*           | 3     | ○*       | 3*              | 2*           |
| 080-080-190   | 35         | ○*            | ○*           | 3     | ○*       | 3*              | 2*           |
| 080-080-200   | 35         | ○*            | ○*           | 3     | ○*       | 3*              | 2*           |
| 100-100-240.1 | 35         | ○*            | ○*           | 3     | ○*       | 3*              | 2*           |

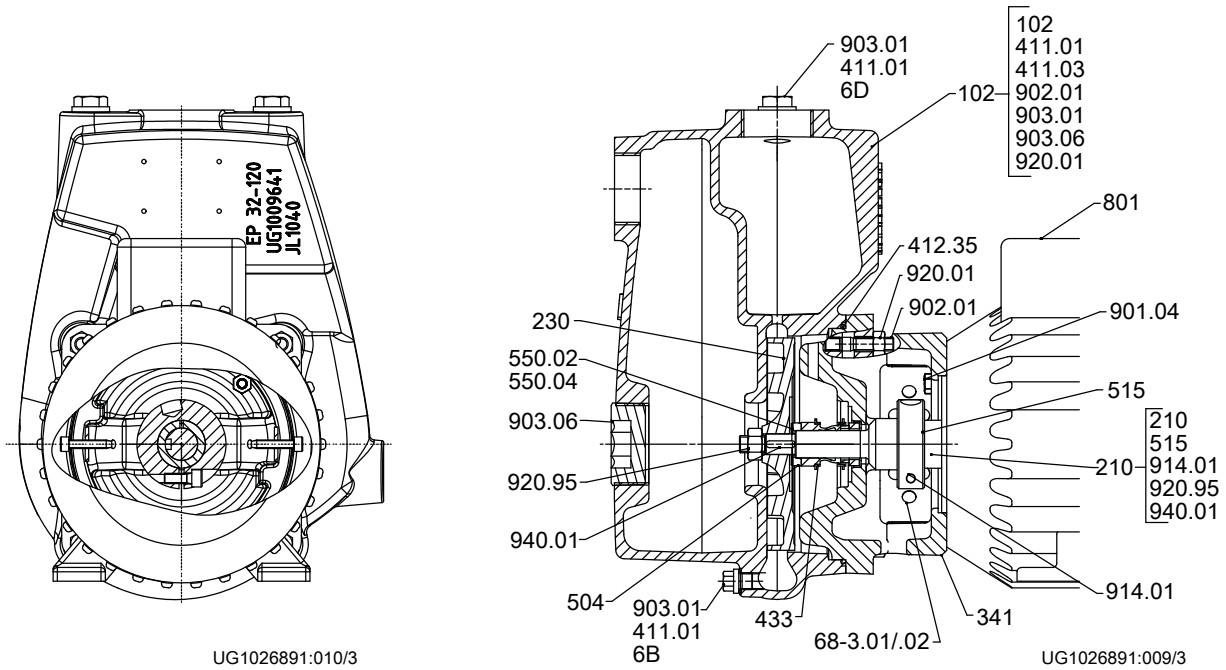
### Scope of supply

Depending on the model, the following items are included in the scope of supply:

- Pump
- Surface-cooled IEC three-phase current squirrel-cage motor
- Cover plates at drive lantern to EN 294

General arrangement drawings with list of components

Etaprime B and C with threaded connection (SU 17)



**Fig. 3:** Variant with a single mechanical seal  
[ Supplied in packaging units only

**Table 24:** List of components

| Part No.  | Description     | Part No.     | Description                   |
|-----------|-----------------|--------------|-------------------------------|
| 102       | Volute casing   | 550.02/04    | Disc                          |
| 210       | Shaft           | 68-3.01/02   | Cover plate                   |
| 230       | Impeller        | 801          | Flanged motor                 |
| 341       | Drive lantern   | 901.04       | Hexagon head bolt             |
| 411.01/03 | Joint ring      | 902.01       | Stud                          |
| 412.35    | O-ring          | 903.01/03/06 | Screw plug                    |
| 433       | Mechanical seal | 914.01       | Hexagon socket head cap screw |
| 504       | Spacer ring     | 920.01/95    | Nut                           |
| 515       | Locking ring    | 940.01       | Key                           |

**Table 25:** Connections

| Part No. | Description | Part No. | Description               |
|----------|-------------|----------|---------------------------|
| 6B       | Fluid drain | 6D       | Fluid priming and venting |

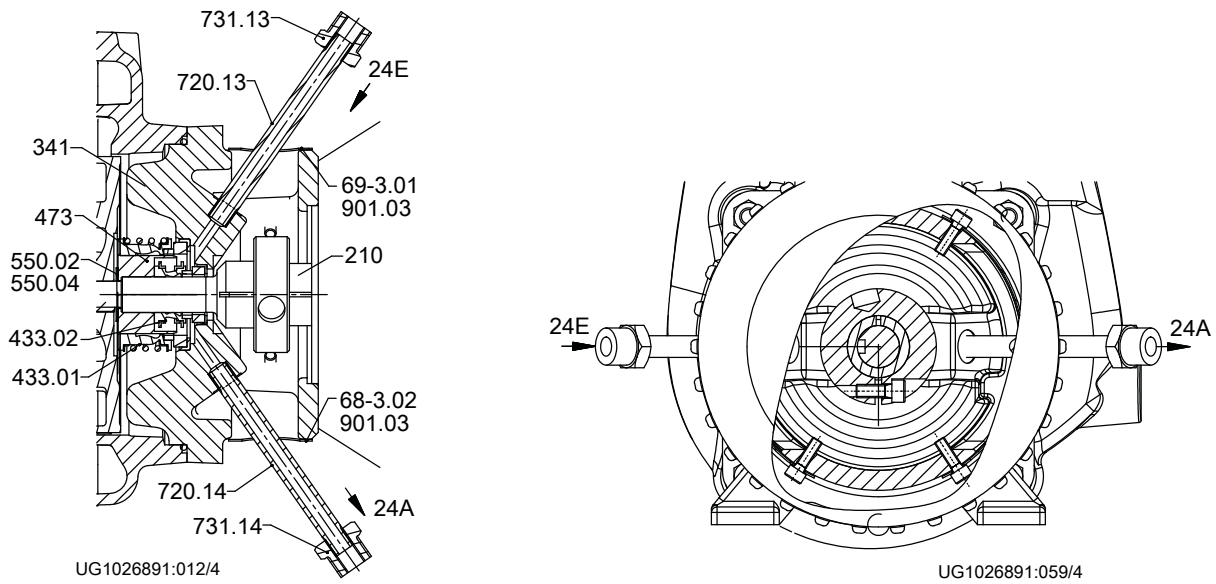


Fig. 4: Variant with double mechanical seal in tandem arrangement

Table 26: List of components

| Part No. | Description                | Part No.    | Description       |
|----------|----------------------------|-------------|-------------------|
| 210      | Shaft                      | 550.02/.04  | Disc              |
| 341      | Drive lantern              | 68-3.01/.02 | Cover plate       |
| 433.01   | Mechanical seal (inboard)  | 720.13/.14  | Fitting           |
| 433.02   | Mechanical seal (outboard) | 731.13/.14  | Reducing nipple   |
| 473      | Primary ring carrier       | 901.03      | Hexagon head bolt |

Table 27: Connections

| Part No. | Description          | Part No. | Description         |
|----------|----------------------|----------|---------------------|
| 24A      | Quench liquid outlet | 24E      | Quench liquid inlet |

Etaprime G and C with flanged connection (SU 25 and SU 35)

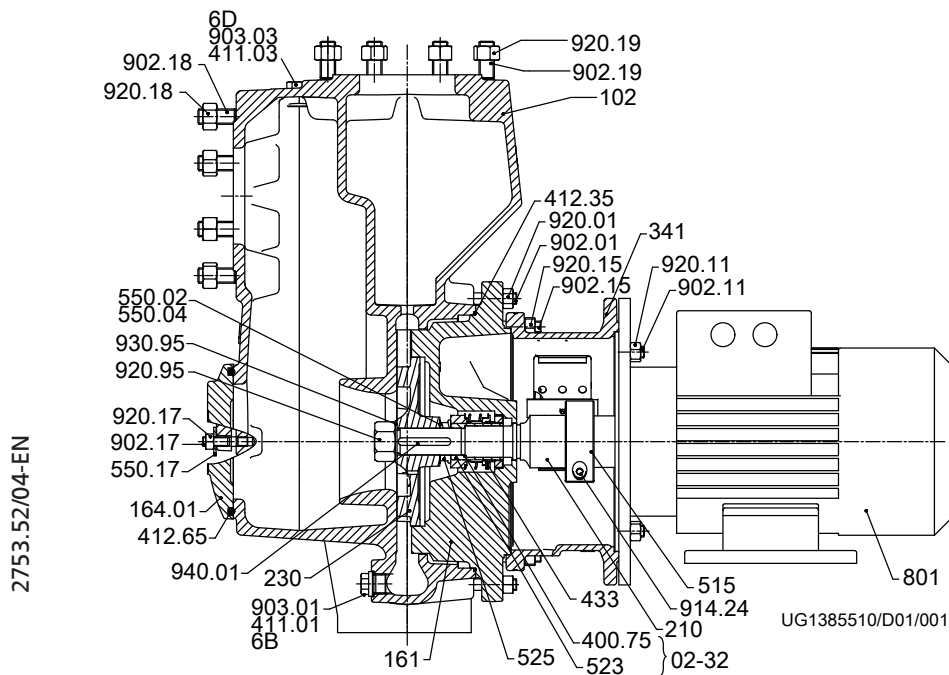


Fig. 5: Variant with a single mechanical seal

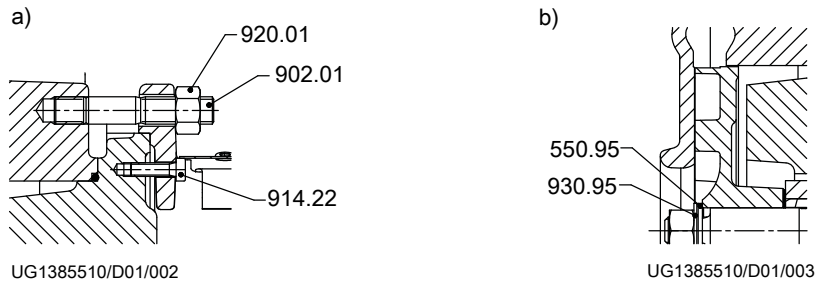


Fig. 6: a) Clamped casing cover, b) impeller fastening elements for shaft unit 25

[ Supplied in packaging units only

Table 28: List of components

| Part No.   | Description      | Part No.                           | Description                   |
|------------|------------------|------------------------------------|-------------------------------|
| 102        | Volute casing    | 525 <sup>25)</sup>                 | Spacer sleeve                 |
| 161        | Casing cover     | 550.02/.04/.17                     | Disc                          |
| 164.01     | Inspection cover | 550.95 <sup>26)</sup>              | Disc                          |
| 210        | Shaft            | 68-3.01/.02                        | Cover plate                   |
| 230        | Impeller         | 801                                | Flanged motor                 |
| 341        | Drive lantern    | 902.01/.11/.15/.17/.18/.19         | Stud                          |
| 400.75     | Gasket           | 903.01/.03                         | Screw plug                    |
| 411.01/.03 | Joint ring       | 914.22/.24                         | Hexagon socket head cap screw |
| 412.35/.65 | O-ring           | 920.01/.05/.11/.15/.17/.18/.19/.95 | Nut                           |
| 433        | Mechanical seal  | 930.95                             | Safety device                 |
| 515        | Locking ring     | 940.01                             | Key                           |
| 523        | Shaft sleeve     |                                    |                               |

Table 29: Connections

| Part No. | Description | Part No. | Description               |
|----------|-------------|----------|---------------------------|
| 6B       | Fluid drain | 6D       | Fluid priming and venting |

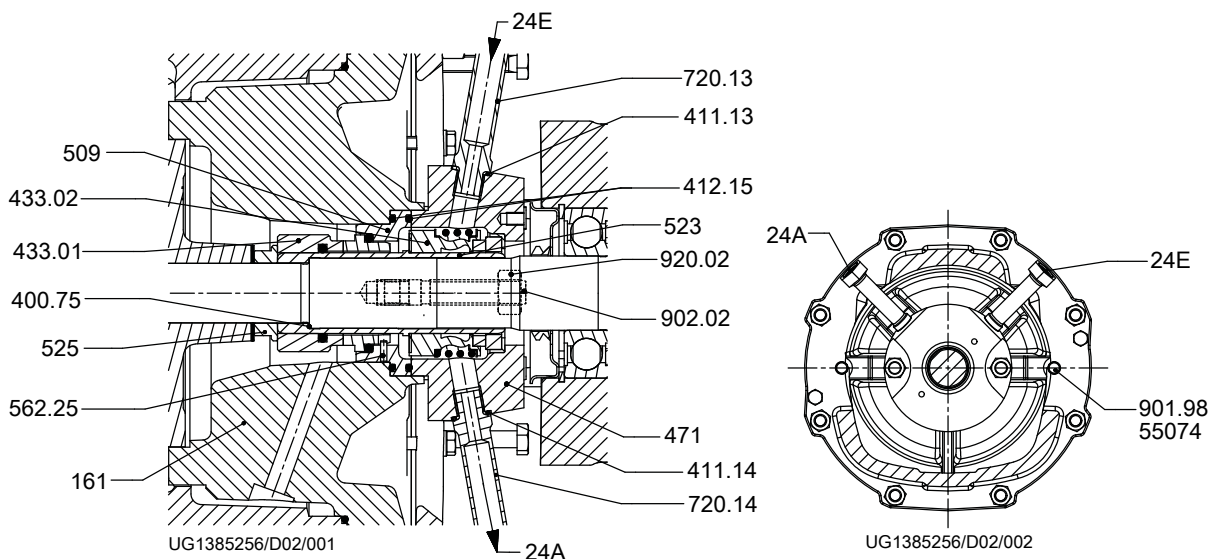


Fig. 7: Variant with double mechanical seal in tandem arrangement

<sup>25)</sup> For shaft unit 35 only; shaft unit see data sheet.

<sup>26)</sup> For shaft unit 25 only; shaft unit see data sheet.

Table 30: List of components

| Part No.   | Description                | Part No.           | Description       |
|------------|----------------------------|--------------------|-------------------|
| 161        | Casing cover               | 509                | Intermediate ring |
| 400.75     | Gasket                     | 523                | Shaft sleeve      |
| 411.13/.14 | Joint ring                 | 525 <sup>27)</sup> | Spacer sleeve     |
| 412.15     | O-ring                     | 562.25             | Parallel pin      |
| 433.01     | Mechanical seal (inboard)  | 720.13/.14         | Fitting           |
| 433.02     | Mechanical seal (outboard) | 902.02             | Stud              |
| 471        | Seal cover                 | 920.02             | Nut               |

Table 31: Connections

| Part No. | Description          | Part No. | Description         |
|----------|----------------------|----------|---------------------|
| 24A      | Quench liquid outlet | 24E      | Quench liquid inlet |

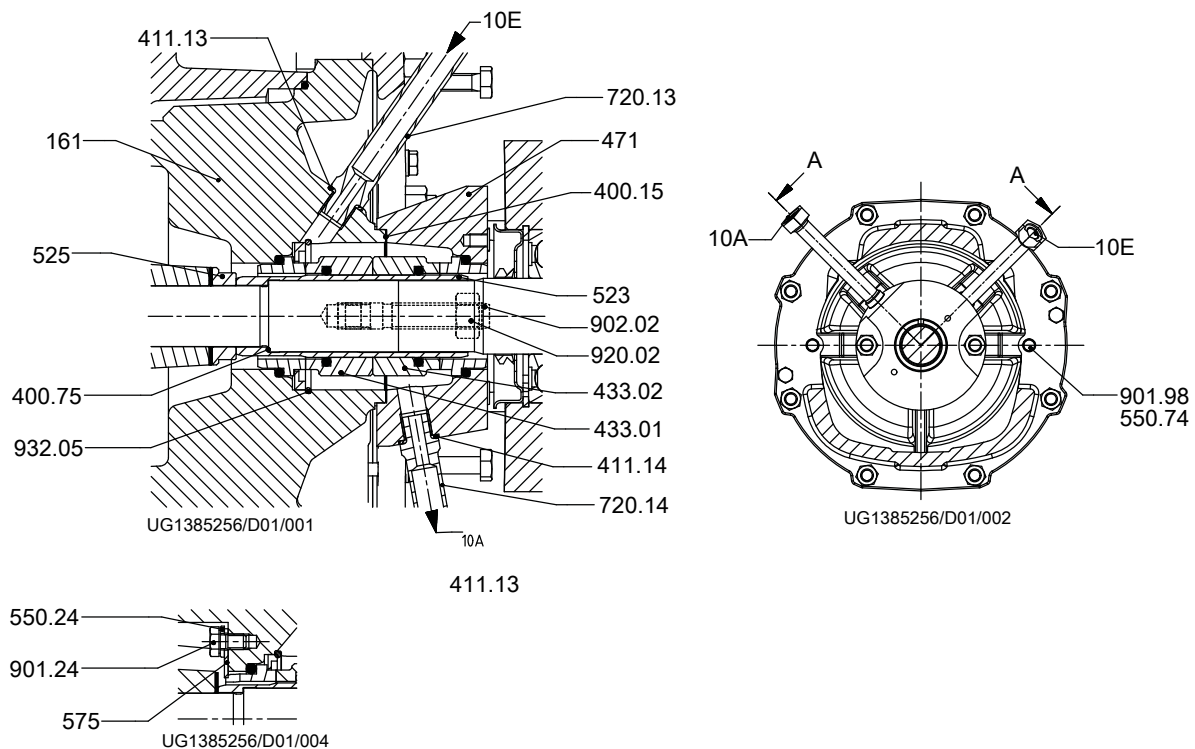


Fig. 8: Variant with double mechanical seal in back-to-back arrangement

Table 32: List of components

| Part No.                   | Description                | Part No.   | Description       |
|----------------------------|----------------------------|------------|-------------------|
| 161                        | Casing cover               | 550.24     | Disc              |
| 400.15 <sup>28)</sup> /.75 | Gasket                     | 575        | Lug               |
| 411.13/.14                 | Joint ring                 | 720.13/.14 | Fitting           |
| 433.01                     | Mechanical seal (inboard)  | 901.24     | Hexagon head bolt |
| 433.02                     | Mechanical seal (outboard) | 902.02     | Stud              |
| 471                        | Seal cover                 | 920.02     | Nut               |
| 523                        | Shaft sleeve               | 932.05     | Circlip           |
| 525 <sup>29)</sup>         | Spacer sleeve              |            |                   |

<sup>27</sup> For shaft unit 35 only; shaft unit see data sheet.

<sup>28</sup> Only for shaft unit 25: joint ring 411.15

<sup>29</sup> For shaft unit 35 only; shaft unit see data sheet.

Table 33: Connections

| Part No. | Description          | Part No. | Description         |
|----------|----------------------|----------|---------------------|
| 10A      | Barrier fluid outlet | 10E      | Barrier fluid inlet |





**KSB ITUR Spain, S.A.**  
Camino de Urteta, s/n • 20800 ZARAUTZ (SPAIN)  
Tel. +34 943 899 899 • Fax +34 943 130 710  
[www.ksb.com](http://www.ksb.com)