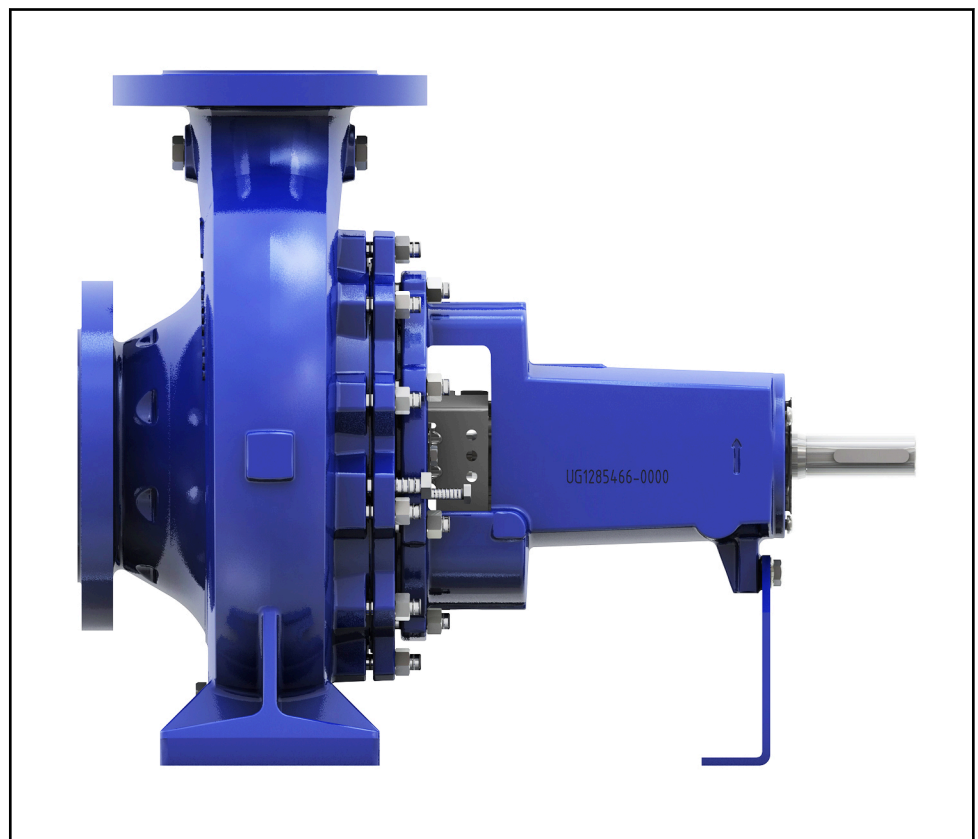


Standardised Water Pump

Etanorm

Installation/Operating Manual



4.4 Name plate

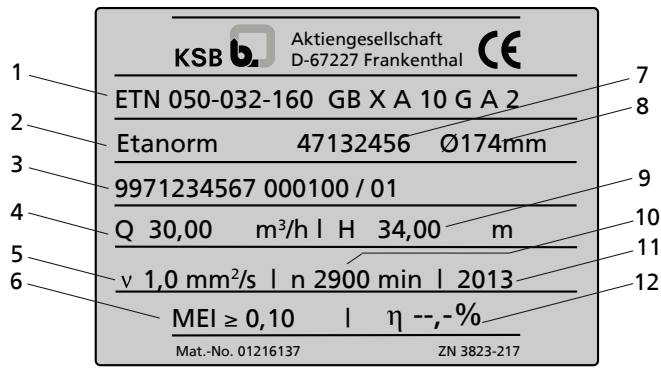


Fig. 5: Name plate (example) Etanorm

| | | | |
|----|--|----|-----------------------------|
| 1 | Type series code, size and version (⇒ Section 4.3 Page 16) | 2 | Type series |
| 3 | KSB order, order item and consecutive number | 4 | Flow rate |
| 5 | Kinematic viscosity of the fluid handled | 6 | Minimum efficiency index |
| 7 | Material number (if applicable) | 8 | Impeller diameter |
| 9 | Head | 10 | Speed |
| 11 | Year of construction | 12 | Efficiency (see data sheet) |

4.5 Design details

Design

- Volute casing pump
- Horizontal installation
- Back pull-out design
- Single-stage
- Dimensions and ratings to EN 733
- Complies with the 2009/125/EC Directive

Pump casing

- Radially split volute casing
- Volute casing with integrally cast pump feet²⁾
- Replaceable casing wear rings

Impeller type

- Closed radial impeller with multiply curved vanes

Bearings

- Standard bearings
 - Floating bearings: deep groove ball bearings
- Reinforced bearings
 - Floating bearings: deep groove ball bearings
- Bearings with bearing pedestal
 - Floating bearings: deep groove ball bearings

²⁾ Depending on the size, pumps with bearing pedestal have integrally cast pump feet.

4.6 Configuration and function

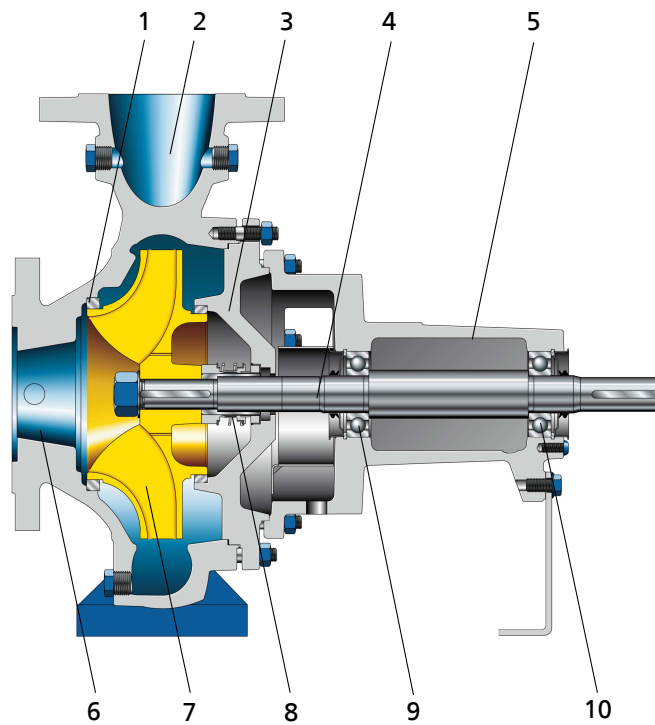


Fig. 6: Sectional drawing

| | | | |
|---|-----------------------------------|----|------------------------------------|
| 1 | Clearance gap | 2 | Discharge nozzle |
| 3 | Casing cover | 4 | Shaft |
| 5 | Bearing bracket | 6 | Suction nozzle |
| 7 | Impeller | 8 | Shaft seal |
| 9 | Rolling element bearing, pump end | 10 | Rolling element bearing, motor end |

Design The pump is designed with an axial fluid inlet and a radial outlet. The hydraulic system runs in its own bearings and is connected to the motor by a shaft coupling.

Function The fluid enters the pump axially via the suction nozzle (6) and is accelerated outward by the rotating impeller (7). In the flow passage of the pump casing the kinetic energy of the fluid is converted into pressure energy. The fluid is pumped to the discharge nozzle (2), where it leaves the pump. The clearance gap (1) prevents any fluid from flowing back from the casing to the suction nozzle. At the rear side of the impeller, the shaft (4) enters the casing via the casing cover (3). The shaft passage through the cover is sealed towards the atmosphere with a shaft seal (8). The shaft runs in rolling element bearings (9 and 10), which are supported by a bearing bracket (5) linked with the pump casing and/or casing cover.

Sealing The pump is sealed by a shaft seal (standardised mechanical seal or gland packing).

5.4.2 Permissible forces and moments at the pump nozzles

The data on forces and moments apply to static pipelines only. The values are only applicable if the pump is installed on a baseplate and bolted to a rigid and level foundation.

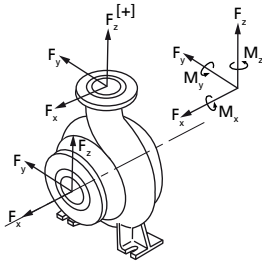


Fig. 10: Forces and moments at the pump nozzles

Table 9: Forces and moments at the pump nozzles for casing material G (JL1040/ A48CL35B)

| Size | Suction nozzle | | | | | | | Discharge nozzle | | | | | | | | |
|---------------|----------------|------|------|------|------|------|------|------------------|-----|------|------|------|------|------|------|------|
| | DN | Fx | Fy | Fz | ΣF | Mx | My | Mz | DN | Fx | Fy | Fz | ΣF | Mx | My | Mz |
| | | [N] | [N] | [N] | [N] | [Nm] | [Nm] | [Nm] | | [N] | [N] | [N] | [N] | [Nm] | [Nm] | [Nm] |
| 040-025-160 | 40 | 450 | 400 | 350 | 696 | 450 | 320 | 370 | 25 | 265 | 250 | 300 | 472 | 315 | 210 | 245 |
| 040-025-200 | 40 | 450 | 400 | 350 | 696 | 450 | 320 | 370 | 25 | 265 | 250 | 300 | 472 | 315 | 210 | 245 |
| 050-032-125.1 | 50 | 580 | 530 | 470 | 916 | 500 | 350 | 400 | 32 | 320 | 300 | 370 | 574 | 390 | 265 | 300 |
| 050-032-160.1 | 50 | 580 | 530 | 470 | 916 | 500 | 350 | 400 | 32 | 320 | 300 | 370 | 574 | 390 | 265 | 300 |
| 050-032-200.1 | 50 | 580 | 530 | 470 | 916 | 500 | 350 | 400 | 32 | 320 | 300 | 370 | 574 | 390 | 265 | 300 |
| 050-032-250.1 | 50 | 580 | 530 | 470 | 916 | 500 | 350 | 400 | 32 | 320 | 300 | 370 | 574 | 390 | 265 | 300 |
| 050-032-125 | 50 | 580 | 530 | 470 | 916 | 500 | 350 | 400 | 32 | 320 | 300 | 370 | 574 | 390 | 265 | 300 |
| 050-032-160 | 50 | 580 | 530 | 470 | 916 | 500 | 350 | 400 | 32 | 320 | 300 | 370 | 574 | 390 | 265 | 300 |
| 050-032-200 | 50 | 580 | 530 | 470 | 916 | 500 | 350 | 400 | 32 | 320 | 300 | 370 | 574 | 390 | 265 | 300 |
| 050-032-250 | 50 | 580 | 530 | 470 | 916 | 500 | 350 | 400 | 32 | 320 | 300 | 370 | 574 | 390 | 265 | 300 |
| 065-040-125 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 40 | 400 | 350 | 450 | 696 | 450 | 320 | 370 |
| 065-040-160 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 40 | 400 | 350 | 450 | 696 | 450 | 320 | 370 |
| 065-040-200 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 40 | 400 | 350 | 450 | 696 | 450 | 320 | 370 |
| 065-040-250 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 40 | 400 | 350 | 450 | 696 | 450 | 320 | 370 |
| 065-040-315 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 40 | 400 | 350 | 450 | 696 | 450 | 320 | 370 |
| 065-050-125 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 50 | 530 | 470 | 580 | 916 | 500 | 350 | 400 |
| 065-050-160 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 50 | 530 | 470 | 580 | 916 | 500 | 350 | 400 |
| 065-050-200 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 50 | 530 | 470 | 580 | 916 | 500 | 350 | 400 |
| 065-050-250 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 50 | 530 | 470 | 580 | 916 | 500 | 350 | 400 |
| 065-050-315 | 65 | 740 | 650 | 600 | 1153 | 530 | 390 | 420 | 50 | 530 | 470 | 580 | 916 | 500 | 350 | 400 |
| 080-065-125 | 80 | 880 | 790 | 720 | 1385 | 560 | 400 | 460 | 65 | 650 | 600 | 740 | 1153 | 530 | 390 | 420 |
| 080-065-160 | 80 | 880 | 790 | 720 | 1385 | 560 | 400 | 460 | 65 | 650 | 600 | 740 | 1153 | 530 | 390 | 420 |
| 080-065-200 | 80 | 880 | 790 | 720 | 1385 | 560 | 400 | 460 | 65 | 650 | 600 | 740 | 1153 | 530 | 390 | 420 |
| 080-065-250 | 80 | 880 | 790 | 720 | 1385 | 560 | 400 | 460 | 65 | 650 | 600 | 740 | 1153 | 530 | 390 | 420 |
| 080-065-315 | 80 | 880 | 790 | 720 | 1385 | 560 | 400 | 460 | 65 | 650 | 600 | 740 | 1153 | 530 | 390 | 420 |
| 100-080-160 | 100 | 1180 | 1050 | 950 | 1843 | 620 | 440 | 510 | 80 | 790 | 720 | 880 | 1385 | 560 | 400 | 460 |
| 100-080-200 | 100 | 1180 | 1050 | 950 | 1843 | 620 | 440 | 510 | 80 | 790 | 720 | 880 | 1385 | 560 | 400 | 460 |
| 100-080-250 | 100 | 1180 | 1050 | 950 | 1843 | 620 | 440 | 510 | 80 | 790 | 720 | 880 | 1385 | 560 | 400 | 460 |
| 100-080-315 | 100 | 1180 | 1050 | 950 | 1843 | 620 | 440 | 510 | 80 | 790 | 720 | 880 | 1385 | 560 | 400 | 460 |
| 100-080-400 | 100 | 1180 | 1050 | 950 | 1843 | 620 | 440 | 510 | 80 | 790 | 720 | 880 | 1385 | 560 | 400 | 460 |
| 125-100-160 | 125 | 1400 | 1250 | 1120 | 2186 | 740 | 530 | 670 | 100 | 1050 | 950 | 1180 | 1843 | 620 | 440 | 510 |
| 125-100-200 | 125 | 1400 | 1250 | 1120 | 2186 | 740 | 530 | 670 | 100 | 1050 | 950 | 1180 | 1843 | 620 | 440 | 510 |
| 125-100-250 | 125 | 1400 | 1250 | 1120 | 2186 | 740 | 530 | 670 | 100 | 1050 | 950 | 1180 | 1843 | 620 | 440 | 510 |
| 125-100-315 | 125 | 1400 | 1250 | 1120 | 2186 | 740 | 530 | 670 | 100 | 1050 | 950 | 1180 | 1843 | 620 | 440 | 510 |
| 125-100-400 | 125 | 1400 | 1250 | 1120 | 2186 | 740 | 530 | 670 | 100 | 1050 | 950 | 1180 | 1843 | 620 | 440 | 510 |
| 150-125-200 | 150 | 1750 | 1600 | 1400 | 2754 | 880 | 610 | 720 | 125 | 1250 | 1120 | 1400 | 2186 | 740 | 530 | 670 |
| 150-125-250 | 150 | 1750 | 1600 | 1400 | 2754 | 880 | 610 | 720 | 125 | 1250 | 1120 | 1400 | 2186 | 740 | 530 | 670 |
| 150-125-315 | 150 | 1750 | 1600 | 1400 | 2754 | 880 | 610 | 720 | 125 | 1250 | 1120 | 1400 | 2186 | 740 | 530 | 670 |
| 150-125-400 | 150 | 1750 | 1600 | 1400 | 2754 | 880 | 610 | 720 | 125 | 1250 | 1120 | 1400 | 2186 | 740 | 530 | 670 |
| 200-150-200 | 200 | 2350 | 2100 | 1900 | 3680 | 1150 | 800 | 930 | 150 | 1600 | 1400 | 1750 | 2754 | 880 | 610 | 720 |
| 200-150-250 | 200 | 2350 | 2100 | 1900 | 3680 | 1150 | 800 | 930 | 150 | 1600 | 1400 | 1750 | 2754 | 880 | 610 | 720 |
| 200-150-315 | 200 | 2350 | 2100 | 1900 | 3680 | 1150 | 800 | 930 | 150 | 1600 | 1400 | 1750 | 2754 | 880 | 610 | 720 |
| 200-150-400 | 200 | 2350 | 2100 | 1900 | 3680 | 1150 | 800 | 930 | 150 | 1600 | 1400 | 1750 | 2754 | 880 | 610 | 720 |



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