

Heat Transfer Fluid / Hot Water Pump

HPK-L

Type Series Booklet



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Type Series Booklet HPK-L

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Centrifugal Pumps with Shaft Seal

Heat Transfer Fluid / Hot Water Pumps

HPK-L



Main applications

Pump for handling hot water and organic or synthetic heat transfer fluids in piping or tank systems.

- Heating systems
- Forced-circulation boiler
- District heating
- Heat transfer systems

Operating data

Operating properties

| Characteristic | | Value | |
|--------------------|----------|--------------|--------|
| | | 50 Hz | 60 Hz |
| Flow rate | Q [m³/h] | ≤ 1160 | ≤ 1400 |
| Head | H [m] | ≤ 162 | ≤ 233 |
| Fluid temperature | T [°C] | Version S/Z: | |
| | | -40 to +350 | |
| | | Version E/Y: | |
| Operating pressure | p [bar] | Version E/S: | |
| | | ≤ 25 bar | |
| | | Version Y/Z: | |
| | | ≤ 40 bar | |

Designation

Example: HPKL050-032-160 EGBS x

Key to the designation

| Code | Description |
|------|---|
| HPKL | Type series |
| 050 | Nominal suction nozzle diameter [mm] |
| 032 | Nominal discharge nozzle diameter [mm] |
| 160 | Nominal impeller diameter [mm] |
| Y | Material of the casing and casing cover |

| Code | Description | |
|------|-----------------------------|--|
| | S | Unalloyed steel and nodular cast iron |
| | E | Unalloyed steel and P250GH/ 1.7335/ P355NL1 (Europe) or unalloyed steel (Asia) |
| | Z | 1.7706 and nodular cast iron |
| | Y | 1.7706 and P250GH/ 1.7335/ P355NL1 |
| G | Impeller material | |
| | G | Cast iron |
| | C | Stainless steel |
| | E | Unalloyed steel |
| BS | Mechanical seal, air-cooled | |
| | BS | Single mechanical seal |
| | TL | Tandem mechanical seals |
| x | Additional code | |
| | x | Special design |

Further information on the designation

(⇒ Page 21)

Design details

Design

- Volute casing pump
- Horizontal installation
- Back pull-out design
- Single-stage
- Meets the technical requirements to ISO 5199
- Dimensions and ratings to ISO 2858 complemented by pumps of nominal diameters DN 25, DN 200 and above

Pump casing

- Single or double volute, depending on the pump size
- Radially split volute casing
- Volute casing with integrally cast pump feet
- Replaceable casing wear rings (as required)

Impeller type

- Closed radial impeller with multiply curved vanes

Shaft seal

- KSB mechanical seal, optimised for installation in an HPK-L pump, with integrated shaft sleeve (standard Europe)
- Optional commercial single mechanical seals with replaceable shaft sleeve (standard Asia/Americas)
- Versions with two mechanical seals can be supplied for heat transfer applications.

Bearings

Bearings:

- Version with single mechanical seal
 - Radial bearing: plain bearing, product-lubricated
 - Fixed bearings: two angular ball bearings, grease-packed
- Version with two mechanical seals
 - Radial bearing: plain bearing, product-lubricated

- Fixed bearing: one deep groove ball bearing or one four-point bearing (depending on the pump size), grease-packed

Bearing bracket designation

Example: CS50

Bearing bracket designation

| Code | Description |
|------|-----------------|
| CS | Bearing bracket |
| 50 | Size |

Bearings used

| Design | Bearing bracket | Plain bearing | Ball bearing |
|----------------------|-----------------|---------------|-----------------|
| One mechanical seal | CS40 | SSiC | 2x7307 |
| | CS50 | SSiC | 2x7307 |
| | CS60 | SSiC | 2x7309 |
| | CS80 | SSiC | 2x7313 |
| Two mechanical seals | CS40 | SSiC | 1x6307 or QJ307 |
| | CS50 | SSiC | 1x6307 or QJ307 |
| | CS60 | SSiC | 1x6309 |
| | CS80 | SSiC | 1x6313 or QJ313 |

Automation (Europe only)

Automation options:

- Hyamaster
- hyatronic
- PumpDrive

Materials

Overview of available materials (Europe)

| Description | Material variant | | | | | | | |
|--------------------|--------------------|--------------------|------------------------------------|--------------------|--------------------|--------------------|------------------------------------|--------------------|
| | SG | SC | EG | EC | ZG | ZC | YG | YC |
| Volute casing | GP240GH+N | | | | 1.7706 | | | |
| Casing cover | EN-GJS-400-18-LT | | P250GH/1.7335/P355NL ¹⁾ | | EN-GJS-40-18-LT | | P250GH/1.7335/P355NL ¹⁾ | |
| Impeller | EN-GJL-250 | 1.4408 | EN-GJL-250 | 1.4408 | EN-GJL-250 | 1.4408 | EN-GJL-250 | 1.4408 |
| Shaft | 1.4021+QT800 | | | | | | | |
| Shaft sleeve | 1.4021+QT800 | | | | | | | |
| Bearing bracket | EN-GJS-400-18-LT | | | | | | | |
| Support foot | Steel | | | | | | | |
| Casing wear ring | None ²⁾ | None ³⁾ | None ²⁾ | None ³⁾ | None ²⁾ | None ³⁾ | None ²⁾ | None ³⁾ |
| Impeller wear ring | None ⁴⁾ | None ⁵⁾ | None ⁴⁾ | None ⁵⁾ | None ⁴⁾ | None ⁵⁾ | None ⁴⁾ | None ⁵⁾ |
| Impeller nut | AISI316 | | | | | | | |
| Gasket | CrNi graphite 1G | | | | | | | |

Overview of available materials (Asia)

| Description | Material variant | |
|---------------|-----------------------|-------------|
| | EG | EE |
| Volute casing | A216 Gr WCB | |
| Casing cover | A216 Gr WCB | |
| Impeller | A48CL35B | A216 Gr WCB |
| Shaft | A276 Type 410 COND. H | |

- 1) Depending on the size
- 2) Optional casing wear ring made of EN-GJL-250 or VG434
- 3) Optional casing wear ring made of VG434
- 4) Optional impeller wear ring made of 1.4021+QT in combination with casing wear ring made of EN-GJL-250 or VG434
- 5) Optional impeller wear ring made of CrNiMoSt in combination with casing wear ring made of VG434

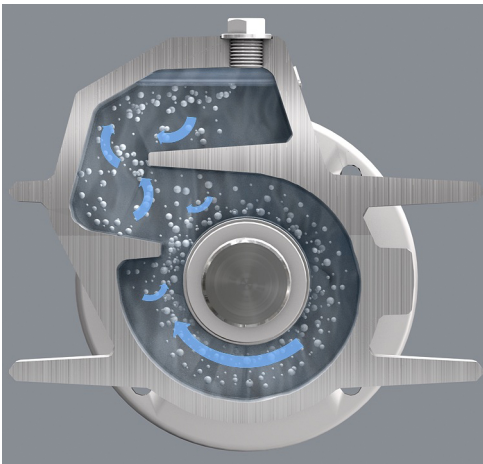
| Description | Material variant | |
|--------------------|-----------------------|--------------------|
| | EG | EE |
| Shaft sleeve | A276 Type 410 COND. H | |
| Bearing bracket | A216 Gr WCB | |
| Support foot | Steel | |
| Casing wear ring | A48CL35B | None ⁶⁾ |
| Impeller wear ring | None | None ⁶⁾ |
| Impeller nut | AISI 316 | |
| Gasket | CrNi graphite 1G | |

Coating and preservation

- Coating and preservation to KSB standard

Product benefits

- Low temperature in the mechanical seal chamber; no cooling water required thanks to air-cooled bearing bracket with heat barrier.
- Increased operating reliability of versions for heat transfer applications by an optional two mechanical seals preventing leakage.
- Higher efficiencies than the previous HPK-L model by continued development of the flow passage within the hydraulic system.
- Optimised venting of mechanical seal chamber by patented VenJet profile.



VenJet profile

Acceptance tests and warranty

- Materials testing
 - Test report 2.2 on request
- Final inspection
 - Inspection certificate 3.1 to EN 10204 on request
- Hydraulic test

The duty point of each pump is guaranteed according to ISO 9906/2A.

The following acceptance tests can be performed and certified at extra charge:

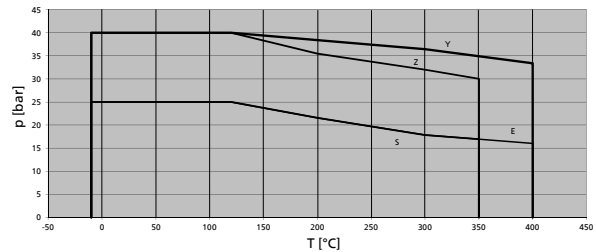
 - Performance test to ISO 9906

- NPSH test

- Other tests (e.g. vibrations, strength) on request.
- Warranty

Warranties are given within the scope of the valid delivery conditions.

Pressure and temperature limits



Pressure and temperature limits of the pump

ASME flanges do not have any impact on the pressure and temperature limits of the pump.

⁶⁾ Optional casing wear ring made of Chrome hard 400 in combination with impeller wear ring made of A743 Gr CA15

Technical data

Technical data

| Size | Bearing bracket | Impeller | | | | | Shaft diameter | | | | | Speed limit | | Weights | Volute type ⁷⁾ |
|---------------|-----------------|-----------------------|--------------|----------------------|------------------------|------------------------|----------------------|------------------|-------------------|----------|--------------|-------------|---------|---------|---------------------------|
| | | Impeller outlet width | Free passage | Impeller inlet width | Max. impeller diameter | Min. impeller diameter | Without shaft sleeve | Pump-end bearing | Drive-end bearing | Coupling | Shaft sleeve | Minimum | Maximum | | |
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [rpm] | | | |
| 040-025-160 | CS40 | 6 | 5,7 | 44 | 169 | 130 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 50 | E |
| 040-025-200 | CS40 | 6 | 5,7 | 44 | 209 | 160 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 60 | E |
| 050-032-125.1 | CS40 | 7 | 6,0 | 52 | 139 | 114 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 47 | E |
| 050-032-160.1 | CS40 | 6 | 5,4 | 52 | 170 | 138 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 51 | E |
| 050-032-200.1 | CS40 | 6 | 5,3 | 54 | 204 | 138 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 60 | E |
| 050-032-250.1 | CS50 | 6 | 5,2 | 58 | 254 | 220 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 87 | E |
| 050-032-125 | CS40 | 10 | 5,7 | 63 | 139 | 110 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 47 | E |
| 050-032-160 | CS40 | 9 | 5,8 | 63 | 174 | 135 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 51 | E |
| 050-032-200 | CS40 | 7 | 6,7 | 62 | 209 | 178 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 61 | E |
| 050-032-250 | CS50 | 8 | 7,1 | 63 | 261 | 212 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 87 | E |
| 065-040-160.1 | CS40 | 9 | 8,5 | 65 | 169 | 130 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 50 | E |
| 065-040-250.1 | CS50 | 7 | 6,6 | 68 | 260 | 200 | 28 | 24 | 35 | 24 | 43 | 800 | 3600 | 88 | E |
| 065-040-125 | CS40 | 14 | 9,6 | 74 | 139 | 110 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 48 | E |
| 065-040-160 | CS40 | 13 | 11,5 | 70 | 174 | 135 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 50 | E |
| 065-040-200 | CS40 | 9 | 8,9 | 69 | 209 | 175 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 64 | E |
| 065-040-250 | CS50 | 8 | 8,0 | 73 | 260 | 214 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 88 | E |
| 065-040-315 | CS50 | 8 | 7,1 | 75 | 326 | 278 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 119 | E |
| 080-050-315.1 | CS50 | 8 | 7,6 | 85 | 320 | 260 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 136 | E |
| 080-050-315 | CS50 | 10 | 9,5 | 86 | 323 | 270 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 136 | E |
| 080-050-125 | CS40 | 20 | 11,6 | 88 | 142 | 114 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 55 | E |
| 080-050-160 | CS40 | 17 | 11,6 | 87 | 174 | 135 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 57 | E |
| 080-050-200 | CS40 | 14 | 11,9 | 83 | 219 | 180 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 66 | E |
| 080-050-250 | CS50 | 11 | 10 | 84 | 260 | 220 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 136 | E |
| 100-065-125 | CS40 | 26 | 12,9 | 99 | 141 | 114 | 28 | 24 | 35 | 24 | 33 | 800 | 3600 | 56 | E |
| 100-065-160 | CS50 | 21 | 12,2 | 92 | 174 | 132 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 89 | E |
| 100-065-200 | CS50 | 17 | 13,3 | 100 | 219 | 180 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 91 | E |
| 100-065-250 | CS50 | 15 | 14,3 | 101 | 260 | 220 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 109 | E |
| 100-065-315 | CS60 | 14 | 13,0 | 107 | 320 | 270 | 48 | 38 | 45 | 42 | 53 | 800 | 3600 | 152 | E |
| 125-080-160 | CS50 | 32 | 15,1 | 124 | 174 | 122 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 95 | E |
| 125-080-200 | CS50 | 25 | 15,2 | 115 | 219 | 180 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 98 | E |
| 125-080-250 | CS50 | 19 | 15,8 | 115 | 269 | 220 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 118 | D |
| 125-080-315 | CS60 | 19 | 17,8 | 115 | 334 | 281 | 48 | 38 | 45 | 42 | 53 | 800 | 3600 | 159 | D |
| 125-080-400 | CS60 | 15 | 14,3 | 129 | 398 | 330 | 48 | 38 | 45 | 42 | 53 | 800 | 1800 | 234 | E |
| 125-100-160 | CS50 | 38 | 16,4 | 135 | 185 | 155 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 115 | E |
| 125-100-200 | CS50 | 33 | 17,9 | 142 | 219 | 179 | 38 | 35 | 35 | 32 | 43 | 800 | 3600 | 108 | E |
| 125-100-250 | CS60 | 27 | 18,8 | 145 | 262 | 216 | 48 | 38 | 45 | 42 | 53 | 800 | 3600 | 134 | D |
| 125-100-315 | CS60 | 23 | 19,9 | 142 | 334 | 280 | 48 | 38 | 45 | 42 | 53 | 800 | 3600 | 166 | D |
| 125-100-400 | CS60 | 18 | 17,1 | 142 | 401 | 329 | 48 | 38 | 45 | 42 | 53 | 800 | 1800 | 243 | E |
| 150-125-200 | CS60 | 41 | 21,1 | 160 | 224 | 162 | 48 | 38 | 45 | 42 | 53 | 800 | 3600 | 142 | D |
| 150-125-250 | CS60 | 37 | 22,4 | 162 | 269 | 218 | 48 | 38 | 45 | 42 | 53 | 800 | 1800 | 167 | E |
| 150-125-315 | CS60 | 31 | 22,6 | 162 | 334 | 280 | 48 | 38 | 45 | 42 | 53 | 800 | 1800 | 208 | E |
| 150-125-400 | CS60 | 26 | 20,9 | 162 | 419 | 330 | 48 | 38 | 45 | 42 | 53 | 800 | 1800 | 263 | D |
| 200-150-200 | CS60 | 60 | 25,2 | 179 | 224 | 158 | 48 | 38 | 45 | 42 | 53 | 800 | 1800 | 213 | E |
| 200-150-250 | CS60 | 49 | 23,0 | 191 | 269 | 220 | 48 | 38 | 45 | 42 | 53 | 800 | 1800 | 201 | E |
| 200-150-315 | CS80 | 40 | 26,9 | 192 | 334 | 264 | 60 | 47 | 65 | 48 | 65 | 800 | 1800 | 278 | E |
| 200-150-400 | CS80 | 33 | 23,8 | 191 | 419 | 330 | 60 | 47 | 65 | 48 | 65 | 800 | 1800 | 327 | D |
| 200-150-500 | CS80 | 23 | 19,1 | 190 | 504 | 400 | 60 | 47 | 65 | 48 | 65 | 800 | 1800 | 454 | D |
| 200-200-250 | CS80 | 62 | 37,2 | 190 | 260 | 200 | 60 | 47 | 65 | 48 | 65 | 800 | 1800 | 327 | E |
| 250-200-315 | CS80 | 50 | 20,8 | 222 | 320 | 260 | 60 | 47 | 65 | 48 | 65 | 800 | 1800 | 342 | E |
| 250-200-400 | CS80 | 40 | 18,4 | 222 | 404 | 320 | 60 | 47 | 65 | 48 | 65 | 800 | 1800 | 409 | D |

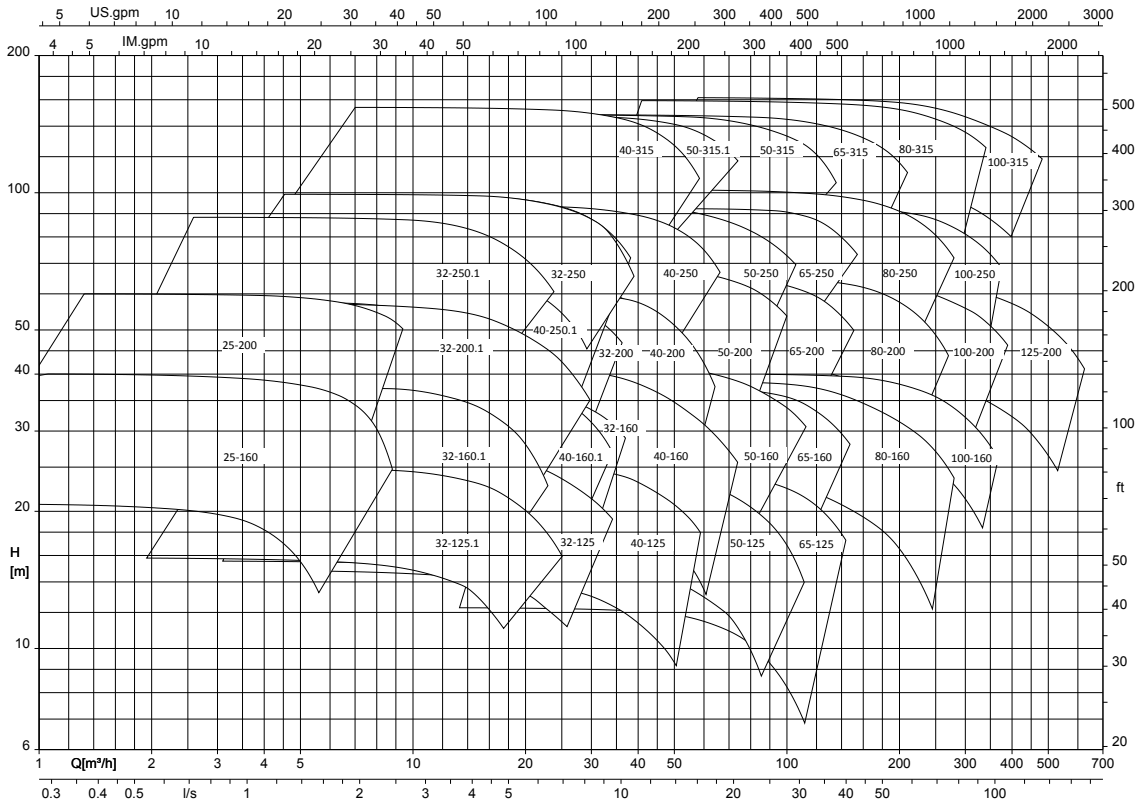
⁷⁾ E = single volute, D = double volute

| Size | Bearing bracket | Impeller | | | | | Shaft diameter | | | | | Speed limit | | Weights | Volute type ⁷⁾ |
|-------------|-----------------|-----------------------|--------------|----------------------|------------------------|------------------------|----------------------|------------------|-------------------|----------|--------------|-------------|---------|---------|---------------------------|
| | | Impeller outlet width | Free passage | Impeller inlet width | Max. impeller diameter | Min. impeller diameter | Without shaft sleeve | Pump-end bearing | Drive-end bearing | Coupling | Shaft sleeve | Minimum | Maximum | | |
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [rpm] | [rpm] | | |
| 250-200-500 | CS80 | 32 | 20,6 | 222 | 504 | 400 | 60 | 47 | 65 | 48 | 65 | 800 | 1800 | 565 | D |
| 300-250-315 | CS80 | 73 | 26,7 | 270 | 324 | 260 | 60 | 47 | 65 | 48 | 65 | 800 | 1800 | 505 | D |

⁷⁾ E = single volute, D = double volute

Selection charts

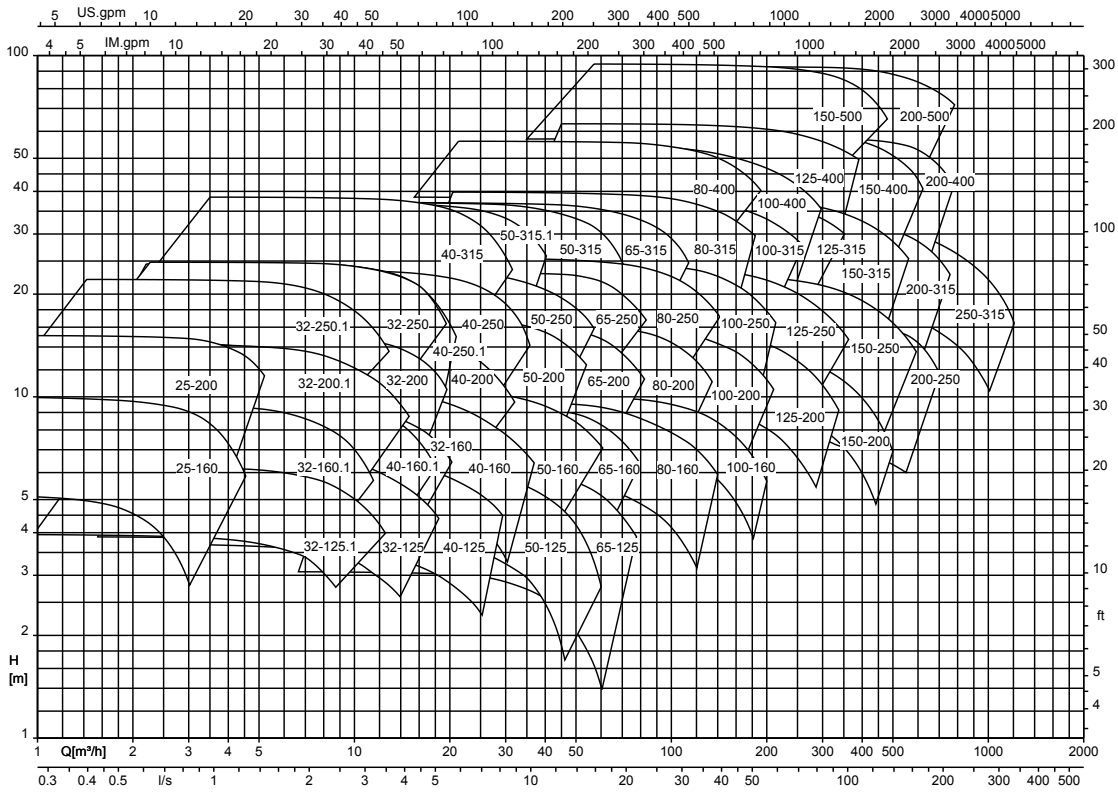
HPK-L, n = 2900 rpm



Size 065-125 not available in Asia

Sizes 040-160.1, 040-250.1 and 050-315.1 are only available in Europe.

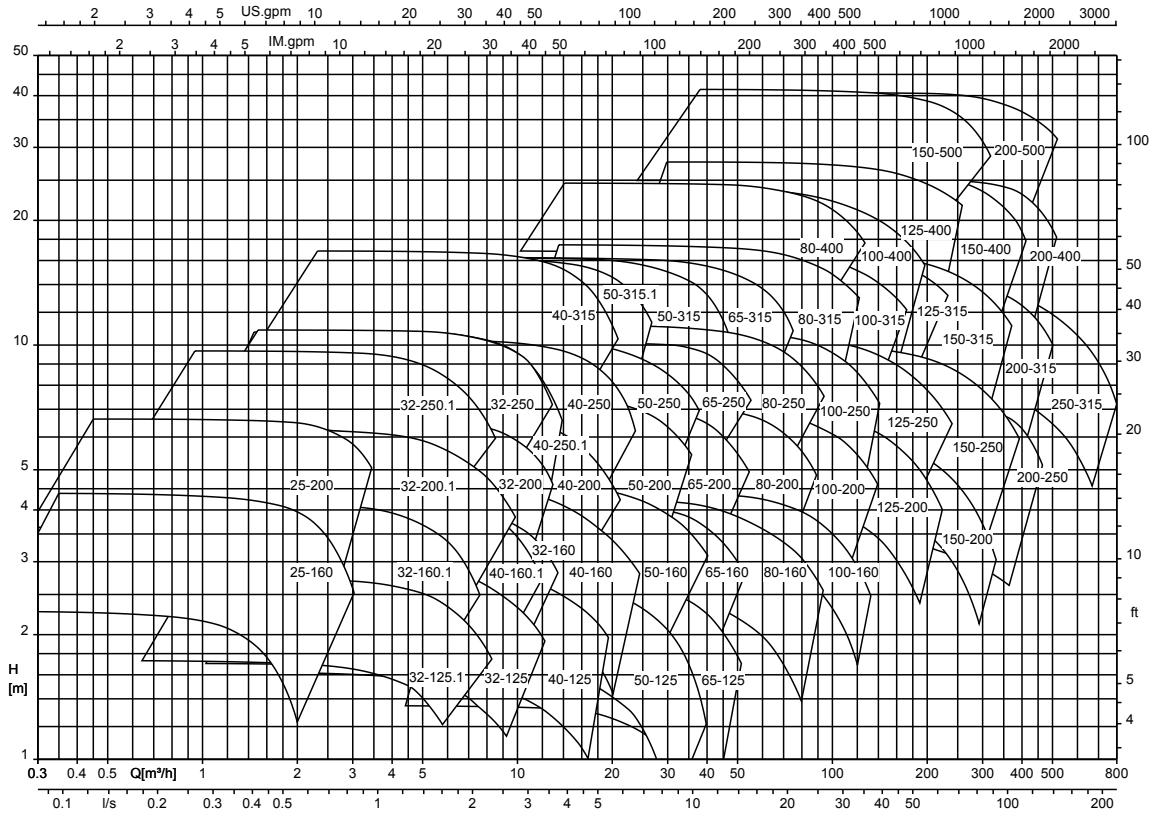
HPK-L, n = 1450 rpm



Size 65-125 not available in Asia

Sizes 040-160.1, 040-250.1 and 050-315.1 are only available in Europe.

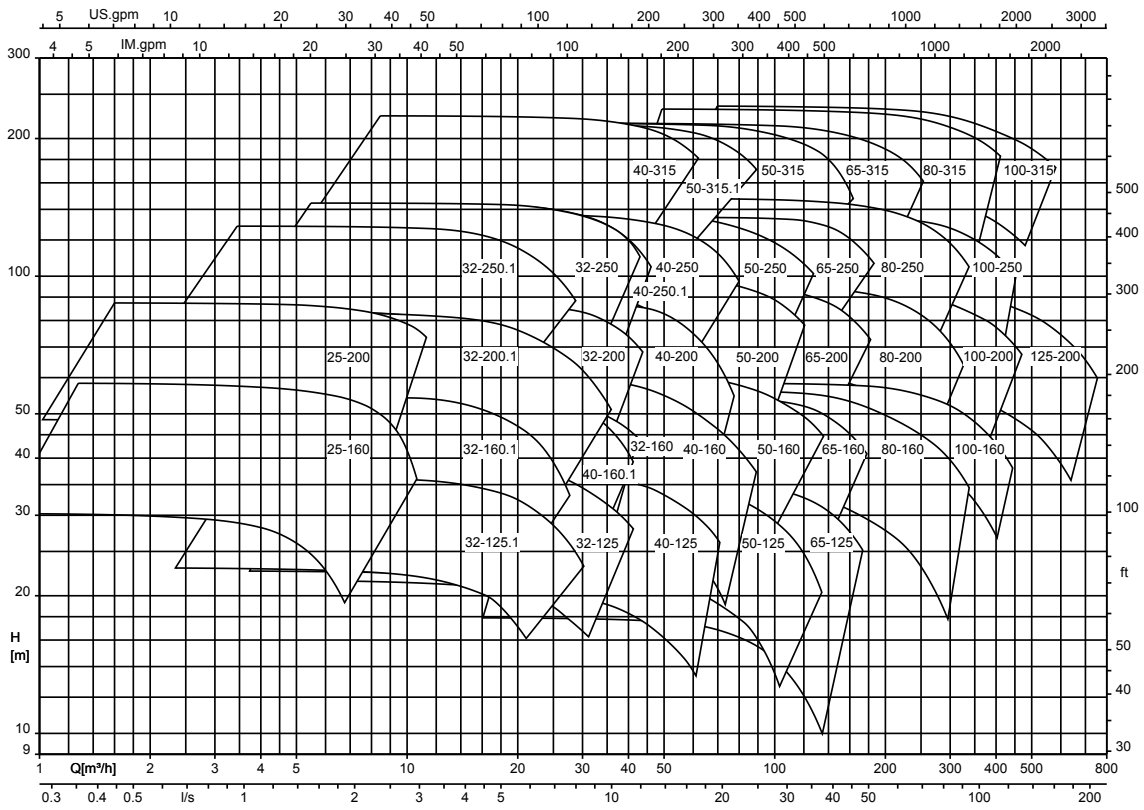
HPK-L, n = 960 rpm



Size 65-125 not available in Asia

Sizes 040-160.1, 040-250.1 and 050-315.1 are only available in Europe.

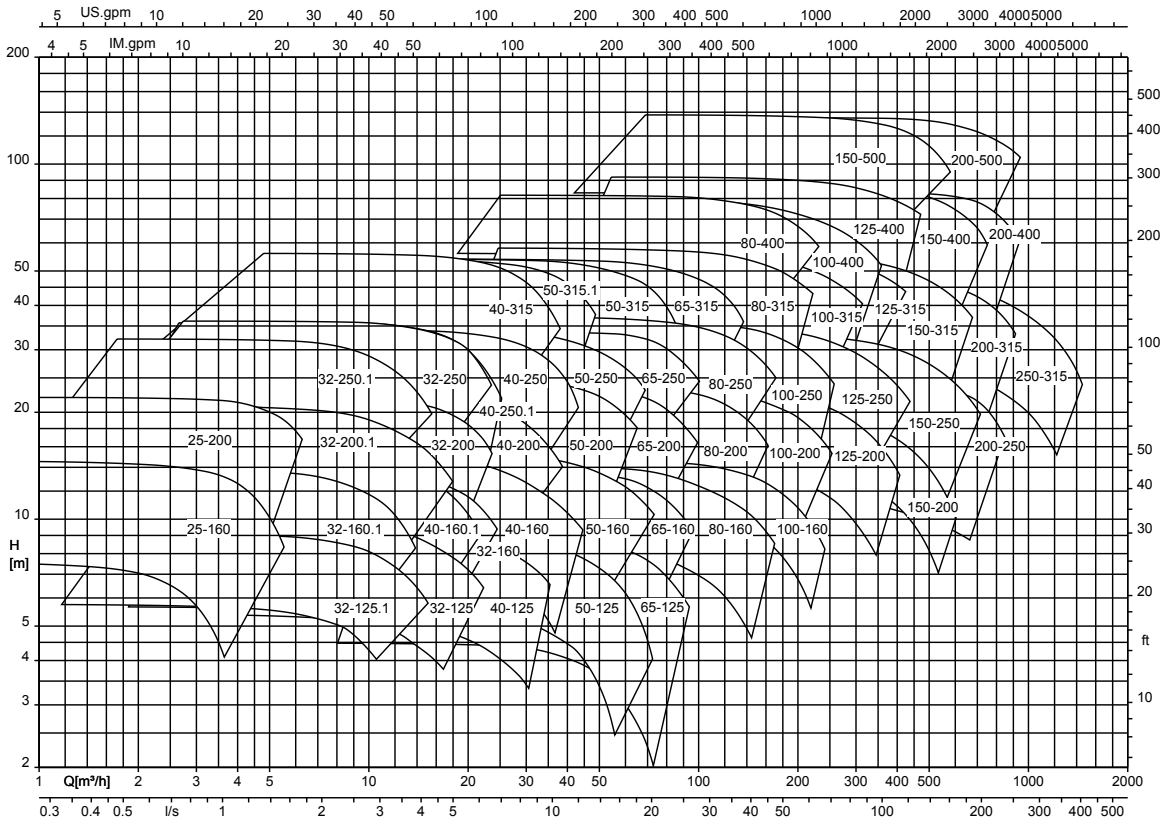
HPK-L, n = 3500 rpm



Size 65-125 not available in Asia

Sizes 040-160.1, 040-250.1 and 050-315.1 are only available in Europe.

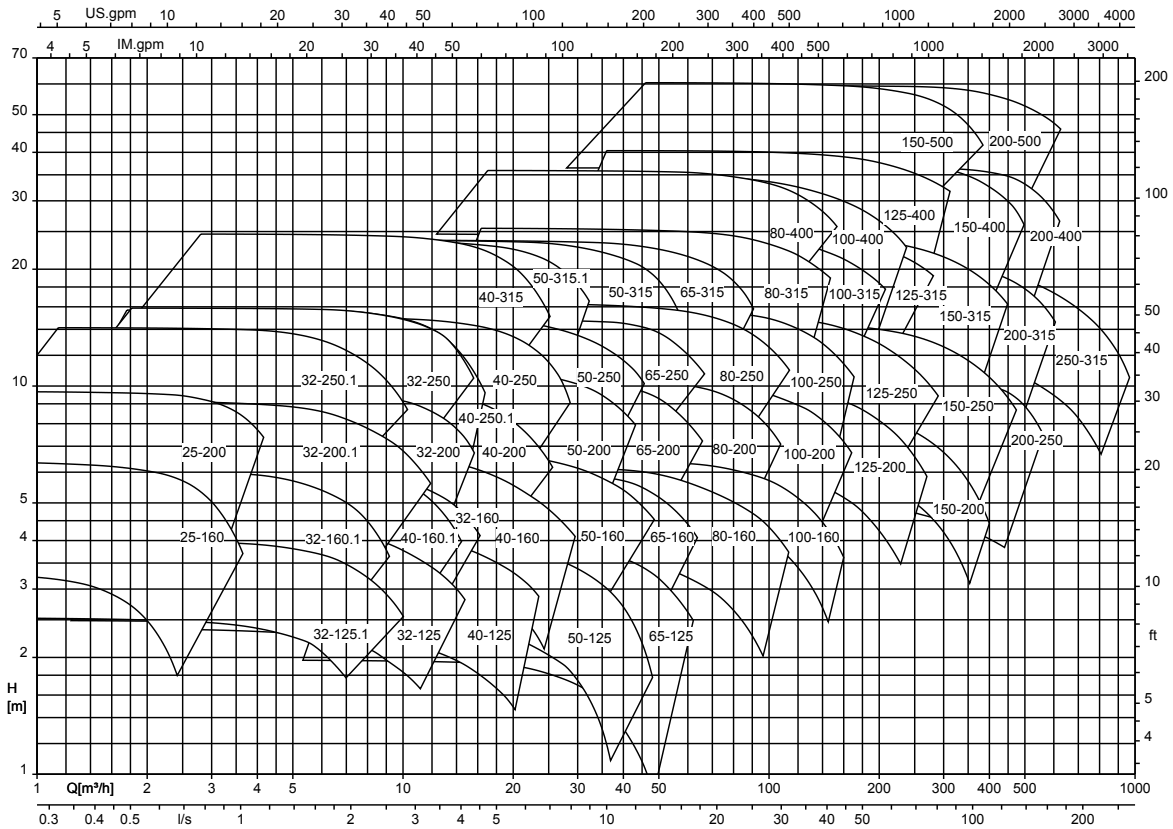
HPK-L, n = 1750 rpm



Size 65-125 not available in Asia

Sizes 040-160.1, 040-250.1 and 050-315.1 are only available in Europe.

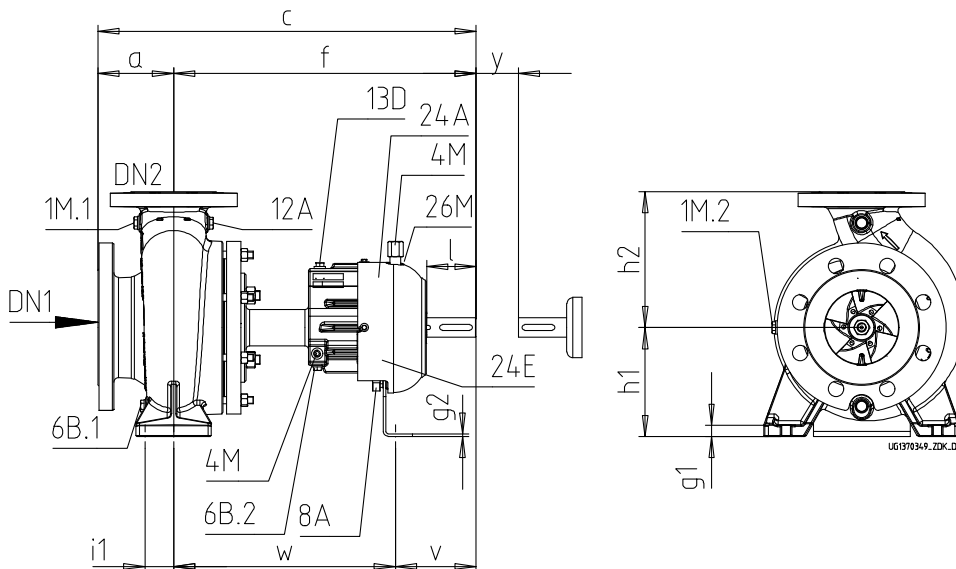
HPK-L, n = 1160 rpm



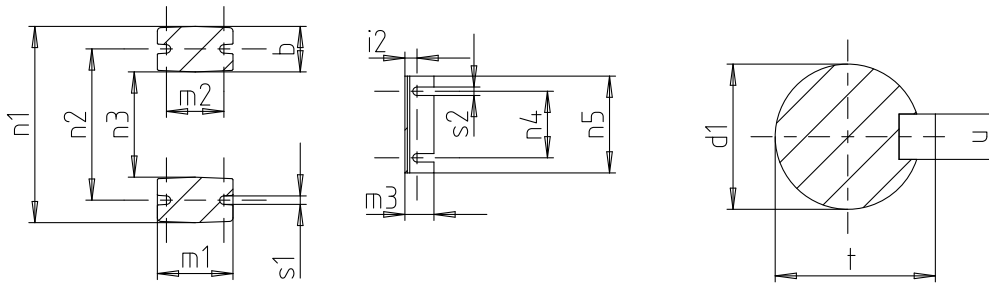
Size 65-125 not available in Asia

Sizes 040-160.1, 040-250.1 and 050-315.1 are only available in Europe.

Dimensions and connections



Dimensions and connections of the pump



Dimensions of pump feet and shaft end

Connection types, Europe

| Connection | Discharge nozzle | | | Description |
|------------|------------------|---------------|----------|----------------------------------|
| | ≤ DN 50 | DN 65 - DN 80 | ≥ DN 100 | |
| 1M.1 | G1/4 | G3/8 | G1/2 | Pressure gauge |
| 1M.2 | G1/4 | G3/8 | G1/2 | Pressure gauge |
| 4M | | G1/4 | | Temperature measuring instrument |
| 6B.1 | G1/4 | G3/8 | G1/2 | Fluid drain |
| 6B.2 | | G1/4 | | Fluid drain |
| 8A | | R1/4 | | Leakage drain |
| 12A | G1/4 | G3/8 | G1/2 | Auxiliary connection |
| 13D | | G1/4 | | Vent plug |
| 24 E/A | | G1/2 | | Quench fluid IN/OUT |
| 26M | | M8 | | Vibration measurement |

Connection types, Asia/Americas

| Connection | Discharge nozzle | | | Description |
|------------|------------------|---------------|----------|----------------------------------|
| | ≤ DN 50 | DN 65 - DN 80 | ≥ DN 100 | |
| 1M.1 | NPT1/4 | NPT3/8 | NPT1/2 | Pressure gauge |
| 1M.2 | NPT1/4 | NPT3/8 | NPT1/2 | Pressure gauge |
| 4M | | G1/4 | | Temperature measuring instrument |
| 6B.1 | NPT1/4 | NPT3/8 | NPT1/2 | Fluid drain |
| 6B.2 | | G1/4 | | Fluid drain |
| 8A | | R1/4 | | Leakage drain |
| 12A | NPT1/4 | NPT3/8 | NPT1/2 | Auxiliary connection |
| 13D | | G1/4 | | Vent plug |
| 24 E/A | | NPT1/2 | | Quench fluid IN/OUT |
| 26M | | M8 | | Vibration measurement |

Pump dimensions

| Size | Bearing bracket | Pump dimensions | | | | | | | | | | | | | | |
|---------------|-----------------|-----------------|-----|-----|----|-----|-----|----|----|-----|-----|-----|----|-----|-----|-----|
| | | DN1 | DN2 | a | b | c | f | g1 | g2 | h1 | h2 | m1 | m3 | n1 | n3 | n5 |
| 040-025-160 | CS40 | 40 | 25 | 80 | 50 | 465 | 385 | 15 | 4 | 132 | 160 | 100 | 48 | 240 | 140 | 160 |
| 040-025-200 | CS40 | 40 | 25 | 80 | 50 | 465 | 385 | 15 | 4 | 160 | 180 | 100 | 48 | 240 | 140 | 160 |
| 050-032-125 | CS40 | 50 | 32 | 80 | 50 | 465 | 385 | 15 | 4 | 112 | 140 | 100 | 48 | 190 | 90 | 160 |
| 050-032-125.1 | CS40 | 50 | 32 | 80 | 50 | 465 | 385 | 15 | 4 | 112 | 140 | 100 | 48 | 190 | 90 | 160 |
| 050-032-160.1 | CS40 | 50 | 32 | 80 | 50 | 465 | 385 | 15 | 4 | 132 | 160 | 100 | 48 | 240 | 140 | 160 |
| 050-032-200.1 | CS40 | 50 | 32 | 80 | 50 | 465 | 385 | 18 | 4 | 160 | 180 | 100 | 48 | 240 | 140 | 160 |
| 050-032-250.1 | CS50 | 50 | 32 | 100 | 65 | 600 | 500 | 18 | 4 | 180 | 225 | 125 | 48 | 320 | 190 | 160 |
| 050-032-160 | CS40 | 50 | 32 | 80 | 50 | 465 | 385 | 15 | 4 | 132 | 160 | 100 | 48 | 240 | 140 | 160 |
| 050-032-200 | CS40 | 50 | 32 | 80 | 50 | 465 | 385 | 18 | 4 | 160 | 180 | 100 | 48 | 240 | 140 | 160 |
| 050-032-250 | CS50 | 50 | 32 | 100 | 65 | 600 | 500 | 18 | 4 | 180 | 225 | 125 | 48 | 320 | 190 | 160 |
| 065-040-160.1 | CS40 | 65 | 40 | 80 | 50 | 465 | 385 | 15 | 4 | 132 | 160 | 100 | 48 | 240 | 140 | 160 |

| Size | Bearing bracket | Pump dimensions | | | | | | | | | | | | | | |
|---------------|-----------------|-----------------|-----|-----|-----|-----|-----|----|----|-----|-----|-----|----|-----|-----|-----|
| | | DN1 | DN2 | a | b | c | f | g1 | g2 | h1 | h2 | m1 | m3 | n1 | n3 | n5 |
| 065-040-250.1 | CS50 | 65 | 40 | 100 | 65 | 600 | 500 | 18 | 4 | 180 | 225 | 125 | 48 | 320 | 190 | 160 |
| 065-040-125 | CS40 | 65 | 40 | 80 | 50 | 465 | 385 | 15 | 4 | 112 | 140 | 100 | 48 | 210 | 110 | 160 |
| 065-040-160 | CS40 | 65 | 40 | 80 | 50 | 465 | 385 | 15 | 4 | 132 | 160 | 100 | 48 | 240 | 140 | 160 |
| 065-040-200 | CS40 | 65 | 40 | 100 | 50 | 485 | 385 | 18 | 4 | 160 | 180 | 100 | 48 | 265 | 165 | 160 |
| 065-040-250 | CS50 | 65 | 40 | 100 | 65 | 600 | 500 | 18 | 4 | 180 | 225 | 125 | 48 | 320 | 190 | 160 |
| 065-040-315 | CS50 | 65 | 40 | 125 | 65 | 625 | 500 | 18 | 6 | 200 | 250 | 125 | 48 | 345 | 215 | 160 |
| 080-050-315.1 | CS50 | 80 | 50 | 125 | 65 | 625 | 500 | 18 | 6 | 225 | 280 | 125 | 48 | 345 | 215 | 160 |
| 080-050-125 | CS40 | 80 | 50 | 100 | 50 | 465 | 385 | 18 | 4 | 132 | 160 | 100 | 48 | 240 | 140 | 160 |
| 080-050-160 | CS40 | 80 | 50 | 100 | 50 | 485 | 385 | 18 | 4 | 160 | 180 | 100 | 48 | 265 | 165 | 160 |
| 080-050-200 | CS40 | 80 | 50 | 100 | 50 | 485 | 385 | 18 | 4 | 160 | 200 | 100 | 48 | 265 | 165 | 160 |
| 080-050-250 | CS50 | 80 | 50 | 125 | 65 | 625 | 500 | 18 | 4 | 180 | 225 | 125 | 48 | 320 | 190 | 160 |
| 080-050-315 | CS50 | 80 | 50 | 125 | 65 | 625 | 500 | 18 | 6 | 225 | 280 | 125 | 48 | 345 | 215 | 160 |
| 100-065-125 | CS40 | 100 | 65 | 100 | 65 | 485 | 385 | 18 | 4 | 160 | 180 | 125 | 48 | 280 | 150 | 160 |
| 100-065-160 | CS50 | 100 | 65 | 100 | 65 | 600 | 500 | 18 | 4 | 160 | 200 | 125 | 48 | 280 | 150 | 160 |
| 100-065-200 | CS50 | 100 | 65 | 100 | 65 | 600 | 500 | 18 | 4 | 180 | 225 | 125 | 48 | 320 | 190 | 160 |
| 100-065-250 | CS50 | 100 | 65 | 125 | 80 | 625 | 500 | 20 | 6 | 200 | 250 | 160 | 48 | 360 | 200 | 160 |
| 100-065-315 | CS60 | 100 | 65 | 125 | 80 | 655 | 530 | 20 | 6 | 225 | 280 | 160 | 48 | 400 | 240 | 160 |
| 125-080-160 | CS50 | 125 | 80 | 125 | 65 | 625 | 500 | 18 | 4 | 180 | 225 | 125 | 48 | 320 | 190 | 160 |
| 125-080-200 | CS50 | 125 | 80 | 125 | 65 | 625 | 500 | 18 | 4 | 180 | 250 | 125 | 48 | 345 | 215 | 160 |
| 125-080-250 | CS50 | 125 | 80 | 125 | 80 | 625 | 500 | 18 | 6 | 225 | 280 | 160 | 48 | 400 | 240 | 160 |
| 125-080-315 | CS60 | 125 | 80 | 125 | 80 | 655 | 530 | 20 | 6 | 250 | 315 | 160 | 48 | 400 | 240 | 160 |
| 125-080-400 | CS60 | 125 | 80 | 125 | 80 | 655 | 530 | 20 | 6 | 280 | 355 | 160 | 48 | 435 | 275 | 160 |
| 125-100-160 | CS50 | 125 | 100 | 125 | 80 | 625 | 500 | 18 | 6 | 200 | 280 | 160 | 48 | 360 | 200 | 160 |
| 125-100-200 | CS50 | 125 | 100 | 125 | 80 | 625 | 500 | 18 | 6 | 200 | 280 | 160 | 48 | 360 | 200 | 160 |
| 125-100-250 | CS60 | 125 | 100 | 140 | 80 | 670 | 530 | 18 | 6 | 225 | 280 | 160 | 48 | 400 | 240 | 160 |
| 125-100-315 | CS60 | 125 | 100 | 140 | 80 | 670 | 530 | 18 | 6 | 250 | 315 | 160 | 48 | 400 | 240 | 160 |
| 125-100-400 | CS60 | 125 | 100 | 140 | 100 | 670 | 530 | 20 | 6 | 280 | 355 | 200 | 48 | 500 | 300 | 160 |
| 150-125-200 | CS60 | 150 | 125 | 140 | 80 | 670 | 530 | 20 | 6 | 250 | 315 | 160 | 48 | 400 | 240 | 160 |
| 150-125-250 | CS60 | 150 | 125 | 140 | 80 | 670 | 530 | 20 | 6 | 250 | 355 | 160 | 48 | 400 | 240 | 160 |
| 150-125-315 | CS60 | 150 | 125 | 140 | 100 | 670 | 530 | 20 | 6 | 280 | 355 | 200 | 48 | 500 | 300 | 160 |
| 150-125-400 | CS60 | 150 | 125 | 140 | 100 | 670 | 530 | 20 | 6 | 315 | 400 | 200 | 48 | 500 | 300 | 160 |
| 200-150-200 | CS60 | 200 | 150 | 180 | 100 | 710 | 530 | 20 | 6 | 280 | 400 | 200 | 48 | 550 | 350 | 160 |
| 200-150-250 | CS60 | 200 | 150 | 160 | 100 | 690 | 530 | 20 | 6 | 280 | 375 | 200 | 48 | 500 | 300 | 160 |
| 200-150-315 | CS80 | 200 | 150 | 160 | 100 | 830 | 670 | 20 | 12 | 315 | 400 | 200 | 60 | 550 | 350 | 200 |
| 200-150-400 | CS80 | 200 | 150 | 160 | 100 | 830 | 670 | 20 | 12 | 315 | 450 | 200 | 60 | 550 | 350 | 200 |
| 200-150-500 | CS80 | 200 | 150 | 180 | 100 | 850 | 670 | 22 | 12 | 375 | 500 | 200 | 60 | 550 | 350 | 200 |
| 200-200-250 | CS80 | 200 | 200 | 180 | 100 | 850 | 670 | 22 | 12 | 355 | 425 | 200 | 60 | 550 | 350 | 200 |
| 250-200-315 | CS80 | 250 | 200 | 200 | 100 | 870 | 670 | 22 | 12 | 355 | 450 | 200 | 60 | 550 | 350 | 200 |
| 250-200-400 | CS80 | 250 | 200 | 180 | 100 | 850 | 670 | 22 | 12 | 355 | 500 | 200 | 60 | 550 | 350 | 200 |
| 250-200-500 | CS80 | 250 | 200 | 200 | 100 | 870 | 670 | 22 | 12 | 425 | 560 | 200 | 60 | 660 | 460 | 200 |
| 300-250-315 | CS80 | 300 | 250 | 250 | 130 | 920 | 670 | 26 | 12 | 400 | 560 | 260 | 60 | 690 | 430 | 200 |

Dimensions of shaft end and foot bolts

| Size | Bearing bracket | Shaft end | | | | | Foot bolts | | | | | | | | | |
|---------------|-----------------|-----------|----|----|----|-----|------------|----|----|-----|-----|----|----|-----|-----|--|
| | | d1 | l | t | u | y | i1 | i2 | m2 | n2 | n4 | s1 | s2 | v | w | |
| 040-025-160 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 190 | 110 | 14 | 14 | 100 | 285 | |
| 040-025-200 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 190 | 110 | 14 | 14 | 100 | 285 | |
| 050-032-125 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 140 | 110 | 14 | 14 | 100 | 285 | |
| 050-032-125.1 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 140 | 110 | 14 | 14 | 100 | 285 | |
| 050-032-160.1 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 190 | 110 | 14 | 14 | 100 | 285 | |
| 050-032-200.1 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 190 | 110 | 14 | 14 | 100 | 285 | |
| 050-032-250.1 | CS50 | 32 | 80 | 35 | 10 | 100 | 47,5 | 20 | 95 | 250 | 110 | 14 | 14 | 130 | 370 | |
| 050-032-160 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 190 | 110 | 14 | 14 | 100 | 285 | |
| 050-032-200 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 190 | 110 | 14 | 14 | 100 | 285 | |
| 050-032-250 | CS50 | 32 | 80 | 35 | 10 | 100 | 47,5 | 20 | 95 | 250 | 110 | 14 | 14 | 130 | 370 | |

| Size | Bearing bracket | Shaft end | | | | | Foot bolts | | | | | | | | | |
|---------------|-----------------|-----------|-----|----|----|-----|------------|----|-----|-----|-----|----|----|-----|-----|--|
| | | d1 | l | t | u | y | i1 | i2 | m2 | n2 | n4 | s1 | s2 | v | w | |
| 065-040-160.1 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 190 | 110 | 14 | 14 | 100 | 285 | |
| 065-040-250.1 | CS50 | 32 | 80 | 35 | 10 | 100 | 47,5 | 20 | 95 | 250 | 110 | 14 | 14 | 130 | 370 | |
| 065-040-125 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 160 | 110 | 14 | 14 | 100 | 285 | |
| 065-040-160 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 190 | 110 | 14 | 14 | 100 | 285 | |
| 065-040-200 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 212 | 110 | 14 | 14 | 100 | 285 | |
| 065-040-250 | CS50 | 32 | 80 | 35 | 10 | 100 | 47,5 | 20 | 95 | 250 | 110 | 14 | 14 | 130 | 370 | |
| 065-040-315 | CS50 | 32 | 80 | 35 | 10 | 100 | 47,5 | 20 | 95 | 280 | 110 | 14 | 14 | 130 | 370 | |
| 080-050-315.1 | CS50 | 32 | 80 | 35 | 10 | 100 | 47,5 | 20 | 95 | 280 | 110 | 14 | 14 | 130 | 370 | |
| 080-050-125 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 190 | 110 | 14 | 14 | 100 | 285 | |
| 080-050-160 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 212 | 110 | 14 | 14 | 100 | 285 | |
| 080-050-200 | CS40 | 24 | 50 | 27 | 8 | 100 | 35 | 20 | 70 | 212 | 110 | 14 | 14 | 100 | 285 | |
| 080-050-250 | CS50 | 32 | 80 | 35 | 10 | 100 | 47,5 | 20 | 95 | 250 | 110 | 14 | 14 | 130 | 370 | |
| 080-050-315 | CS50 | 32 | 80 | 35 | 10 | 100 | 47,5 | 20 | 95 | 280 | 110 | 14 | 14 | 130 | 370 | |
| 100-065-125 | CS40 | 24 | 50 | 27 | 8 | 100 | 47,5 | 20 | 95 | 212 | 110 | 14 | 14 | 100 | 285 | |
| 100-065-160 | CS50 | 32 | 80 | 35 | 10 | 100 | 47,5 | 20 | 95 | 212 | 110 | 14 | 14 | 130 | 370 | |
| 100-065-200 | CS50 | 32 | 80 | 35 | 10 | 140 | 47,5 | 20 | 95 | 250 | 110 | 14 | 14 | 130 | 370 | |
| 100-065-250 | CS50 | 32 | 80 | 35 | 10 | 140 | 60 | 20 | 120 | 280 | 110 | 18 | 14 | 130 | 370 | |
| 100-065-315 | CS60 | 42 | 110 | 45 | 12 | 140 | 60 | 20 | 120 | 315 | 110 | 18 | 14 | 160 | 370 | |
| 125-080-160 | CS50 | 32 | 80 | 35 | 10 | 140 | 47,5 | 20 | 95 | 250 | 110 | 14 | 14 | 130 | 370 | |
| 125-080-200 | CS50 | 32 | 80 | 35 | 10 | 140 | 47,5 | 20 | 95 | 280 | 110 | 14 | 14 | 130 | 370 | |
| 125-080-250 | CS50 | 32 | 80 | 35 | 10 | 140 | 60 | 20 | 120 | 315 | 110 | 18 | 14 | 130 | 370 | |
| 125-080-315 | CS60 | 42 | 110 | 45 | 12 | 140 | 60 | 20 | 120 | 315 | 110 | 18 | 14 | 160 | 370 | |
| 125-080-400 | CS60 | 42 | 110 | 45 | 12 | 140 | 60 | 20 | 120 | 355 | 110 | 18 | 14 | 160 | 370 | |
| 125-100-160 | CS50 | 32 | 80 | 35 | 10 | 140 | 60 | 20 | 120 | 280 | 110 | 19 | 14 | 130 | 370 | |
| 125-100-200 | CS50 | 32 | 80 | 35 | 10 | 140 | 60 | 20 | 120 | 280 | 110 | 18 | 14 | 130 | 370 | |
| 125-100-250 | CS60 | 42 | 110 | 45 | 12 | 140 | 60 | 20 | 120 | 315 | 110 | 18 | 14 | 160 | 370 | |
| 125-100-315 | CS60 | 42 | 110 | 45 | 12 | 140 | 60 | 20 | 120 | 315 | 110 | 18 | 14 | 160 | 370 | |
| 125-100-400 | CS60 | 42 | 110 | 45 | 12 | 140 | 75 | 20 | 150 | 400 | 110 | 23 | 14 | 160 | 370 | |
| 150-125-200 | CS60 | 42 | 110 | 45 | 12 | 140 | 60 | 20 | 120 | 315 | 110 | 19 | 14 | 160 | 370 | |
| 150-125-250 | CS60 | 42 | 110 | 45 | 12 | 140 | 60 | 20 | 120 | 315 | 110 | 18 | 14 | 160 | 370 | |
| 150-125-315 | CS60 | 42 | 110 | 45 | 12 | 140 | 75 | 20 | 150 | 400 | 110 | 23 | 14 | 160 | 370 | |
| 150-125-400 | CS60 | 42 | 110 | 45 | 12 | 140 | 75 | 20 | 150 | 400 | 110 | 23 | 14 | 160 | 370 | |
| 200-150-200 | CS60 | 42 | 110 | 45 | 12 | 180 | 75 | 20 | 150 | 450 | 110 | 24 | 14 | 160 | 370 | |
| 200-150-250 | CS60 | 42 | 110 | 45 | 12 | 180 | 75 | 20 | 150 | 400 | 110 | 23 | 14 | 160 | 370 | |
| 200-150-315 | CS80 | 48 | 110 | 51 | 14 | 180 | 75 | 39 | 150 | 450 | 140 | 23 | 18 | 170 | 500 | |
| 200-150-400 | CS80 | 48 | 110 | 51 | 14 | 180 | 75 | 39 | 150 | 450 | 140 | 23 | 18 | 170 | 500 | |
| 200-150-500 | CS80 | 48 | 110 | 51 | 14 | 180 | 75 | 39 | 150 | 450 | 140 | 23 | 18 | 170 | 500 | |
| 200-200-250 | CS80 | 48 | 110 | 51 | 14 | 180 | 75 | 39 | 150 | 450 | 140 | 23 | 18 | 170 | 500 | |
| 250-200-315 | CS80 | 48 | 110 | 51 | 14 | 180 | 75 | 39 | 150 | 450 | 140 | 23 | 18 | 170 | 500 | |
| 250-200-400 | CS80 | 48 | 110 | 51 | 14 | 180 | 75 | 39 | 150 | 450 | 140 | 23 | 18 | 170 | 500 | |
| 250-200-500 | CS80 | 48 | 110 | 51 | 14 | 180 | 75 | 39 | 150 | 560 | 140 | 23 | 18 | 170 | 500 | |
| 300-250-315 | CS80 | 48 | 110 | 51 | 14 | 180 | 95 | 39 | 190 | 560 | 140 | 28 | 18 | 170 | 500 | |

Flange design

Flange design by materials

| Material | Standard | Pressure class |
|----------|-----------------------|-------------------------|
| E/ S | EN 1092-1 | PN 25 |
| | Drilled to ASME B16.5 | Class 300 ⁸⁾ |
| Y/ Z | EN 1092-1 | PN 40 |
| | Drilled to ASME B16.5 | Class 300 |

Scope of supply

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

- Pump

Drive

- Surface-cooled IEC frame three-phase squirrel-cage motor

Coupling

- Flexible coupling with or without spacer

Contact guard

- Coupling guard

Baseplate

Europe:

⁸⁾ Not possible for size 100-065-125

- Baseplate (to ISO 3661), cast or welded, for pump and motor, in torsion-resistant design
- Channel section steel or folded steel plate

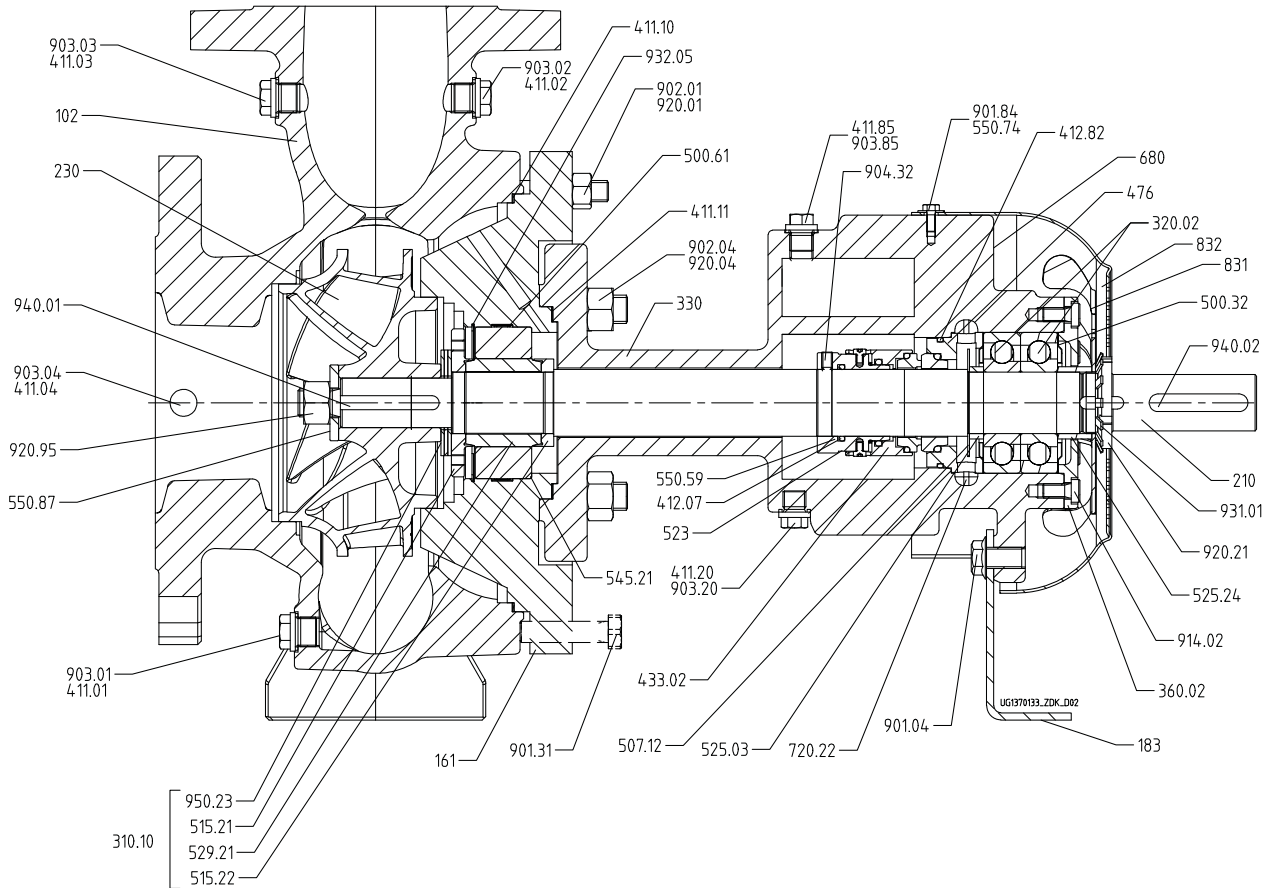
Asia/Americas:

- Baseplate to local KSB standard

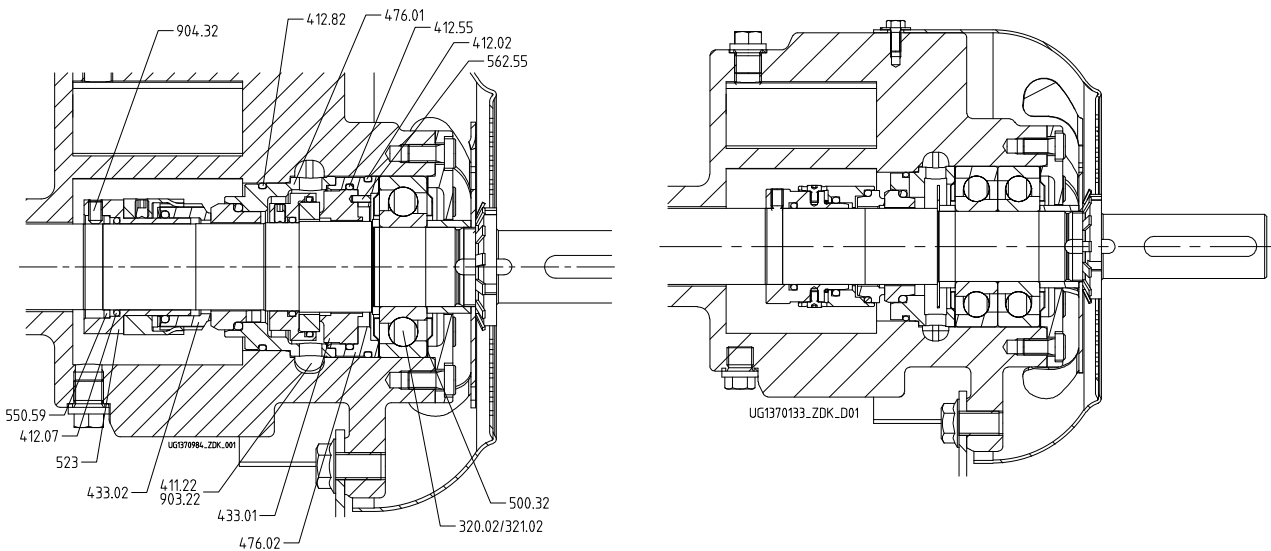
Special accessories

- As required

General assembly drawing with list of components

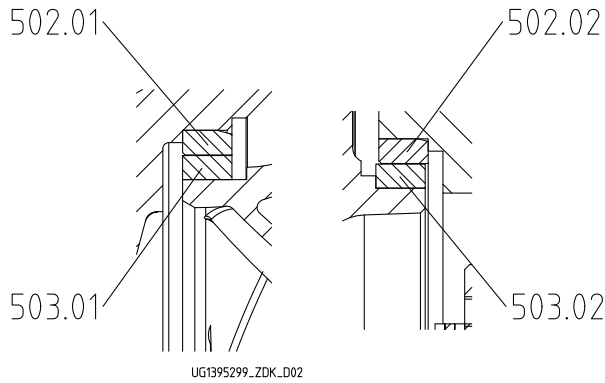


General assembly drawing, version with single mechanical seal

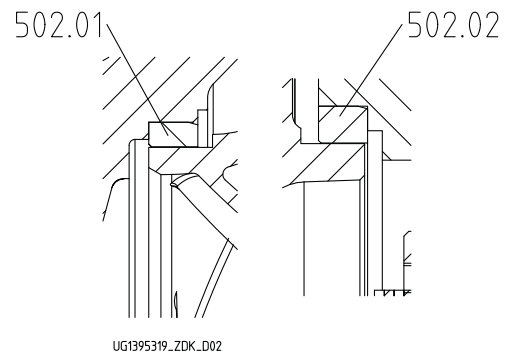


Version with two mechanical seals

Dead-end seal arrangement



Version with casing wear ring and impeller wear ring



Version with casing wear ring

List of components

| Part No. | Comprising | Description |
|--|--|------------------------------|
| 102 | 102 | Volute casing |
| | 411.01/.02/.03/.04/.10 | Joint ring |
| | 502.01 ⁹⁾ | Casing wear ring |
| | 902.01 | Stud |
| | 903.01/.02/.03/.04 | Screw plug |
| | 920.01 | Hexagon nut |
| 161 | 161 | Casing cover |
| | 411.11 | Joint ring |
| | 500.61 | Tolerance ring |
| | 502.02 ⁹⁾ | Casing wear ring |
| | 545.21 | Bearing bush |
| | 901.31 | Hexagon head bolt |
| | 902.04 | Stud |
| | 920.04 | Hexagon nut |
| 932.05 | Circlip | |
| 183 | 183 | Support foot |
| 210 | 210 | Shaft |
| | 550.87 | Disc |
| | 920.21 | Slotted round nut |
| | 920.95 | Hexagon nut |
| | 931.01 | Lock washer |
| | 940.01/02 | Key |
| 230 | 230 | Impeller |
| | 503.01/.02 ¹⁰⁾ | Impeller wear ring |
| 310.10 | 310.10 | Plain bearing |
| | 515.21/.22 | Locking ring |
| | 529.21 | Bearing sleeve |
| | 950.23 | Disc spring |
| 320.02 ¹¹⁾ | 320.02 ¹¹⁾ | Angular contact ball bearing |
| 321.02 ¹¹⁾ | 321.02 ¹¹⁾ | Deep groove ball bearing |
| 330 | 330 | Bearing bracket |
| 360.02 | 360.02 | Bearing cover |
| 411.20/.22/.35 ¹²⁾ /.36 ¹²⁾ /.55/.85 | 411.20/.22/.35 ¹²⁾ /.36 ¹²⁾ /.55/.85 | Joint ring |
| 412.02/.82 | 412.02/.82 | O-ring |
| 412.07 ¹³⁾ | 412.07 ¹³⁾ | O-ring |
| 433.01 | 433.01 | Mechanical seal |
| 433.02 | 433.02 | Mechanical seal |
| 476/.01/.02 | 476/.01/.02 | Mating ring carrier |

9) On pumps with casing wear ring only
 10) On pumps with casing wear ring and impeller wear ring only
 11) Depending on the design
 12) On pumps with two mechanical seals only
 13) Not fitted on pumps with KSB mechanical seal

| Part No. | Comprising | Description |
|---|---|-------------------------------|
| 500.32 | 500.32 | Nilos ring |
| 507.12 | 507.12 | Thrower |
| 523 ¹³⁾ | 523 ¹³⁾ | Shaft sleeve |
| 525.03/.24 | 525.03/.24 | Spacer sleeve |
| 550.59 ¹³⁾ | 550.59 ¹³⁾ | Support disc |
| 550.74 | 550.74 | Disc |
| 562.55 | 562.55 | Parallel pin |
| 680 | 680 | Guard |
| 720.22 | 720.22 | Hexagon nipple |
| 720.35 ¹²⁾ /.36 ¹²⁾ | 720.35 ¹²⁾ /.36 ¹²⁾ | Extension |
| 831 | 831 | Fan impeller |
| 832 | 832 | Fan hood |
| 901.04/.84 | 901.04/.84 | Hexagon head bolt |
| 902.04 | 902.04 | Stud |
| 903.20/.22/.85 | 903.20/.22/.85 | Screw plug |
| 904.32 ¹³⁾ | 904.32 ¹³⁾ | Grub screw |
| 914.02 | 914.02 | Hexagon socket head cap screw |
| 920.04 | 920.04 | Hexagon nut |

Detailed designation

Product code 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 |
| H | P | K | L | 0 | 5 | 0 | - | 0 | 3 | 2 | - | 2 | 5 | 0 | 1 | E | G | B | S | | X | W | | W | 0 | 0 | 7 | 5 | 4 | | B |
| See name plate and data sheet | | | | | | | | | | | | | | | | | | | | See data sheet | | | | | | | | | | | |

Key to the designation

| Position | Code | Description |
|----------|--|---|
| 1-4 | Pump type | |
| | HPK-L | Type series |
| 5-16 | Size | |
| | 050 | Nominal suction nozzle diameter [mm] |
| | 032 | Nominal discharge nozzle diameter [mm] |
| | 2501 | Nominal impeller diameter [mm] |
| 17 | Material of pump casing and casing cover | |
| | S | Pump casing: GP240GH+N/ A216 Gr WCB Casing cover: EN-GJS-400-18-18-LT |
| | E | Pump casing: GP240GH+N/ A216 Gr WCB Casing cover: P250GH/1.7335/P355NL1 (Europe) or Casing cover: GP240GH+N/ A216 Gr WCB (Asia) |
| | Z | Pump casing: 1.7706 Casing cover: EN-GJS-400-18-18-LT |
| | Y | Pump casing: 1.7706 Casing cover: P250GH / 1.7335/P355NL1 |
| 18 | Impeller material | |
| | G | Grey cast iron EN-GJL-250 / grey cast iron A 48 CL 35B |
| | C | Stainless steel 1.4408 / A743 GR CF8M |
| | E | Steel GP240GH+N / A216 Gr WCB |
| 19-21 | Seal variants | |
| | BS | Single mechanical seal, dead-end arrangement, air-cooled |
| | TL | Tandem mechanical seals, dead-end arrangement, air-cooled |
| 22 | Special design | |
| | X | Special design |
| | - | Standard |
| 23 | Fluid handled | |
| | W | Hot water |
| | O | Heat transfer fluids |
| 24 | Blank | |
| 25 | Bearing bracket design | |
| | W | Bearing bracket for heat transfer applications |

| Position | | Code | Description |
|----------|--------------------|---------|---|
| 26-29 | Motor rating | | |
| | | 1 3 2 0 | 132 kW |
| | | 0 0 7 5 | 7.5 KW |
| | | 0 0 0 7 | 0.75 KW |
| 30 | Number of poles | | |
| | | 2 | 2 poles |
| | | 4 | 4 poles |
| | | 6 | 6 poles |
| 31-32 | Product generation | | |
| | | B | Product generation HPK-L 2013 Global Pump |
| | | A | Product generation HPK-L 2001 |



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