

Etaline 040-040-160 GG

ETL 040-040-160-GGSBV11 WSEBS2HHB

Operating point 1

Dimensioning operating point

Operating conditions (purchaser requirements)

| | | | |
|-----------------------------------|-----------------------|---------------------------------------|---------------|
| Target flow rate | 10 m ³ /h | Vapour pressure determined | -0.9766 bar.r |
| Target head | 22.16 m | Minimum inlet pressure | -0.3 bar.r |
| Fluid | Water, process water | required | |
| Fluid variant | Flushing water | Specified ambient temperature | 20 °C |
| Specified fluid temperature | 20 °C | Installation altitude above sea level | 1,000 m |
| Density Fluid handled | 998 kg/m ³ | | |
| Kinematic viscosity Fluid handled | 1 mm ² /s | | |

Operating conditions (performance)

| | | | |
|-------------------------------|-------------------------|-----------------------------------|-------------|
| Flow rate | 10.29 m ³ /h | Maximum power input at duty point | 1.39 kW |
| Minimum permissible flow rate | 4.053 m ³ /h | Maximum power input / curve | 2.487 kW |
| Head | 23.46 m | Pump speed | 2,927 1/min |
| Shut-off head | 24.56 m | Discharge pressure-max. | 2.404 bar.r |
| Efficiency Pump | 47.1 % | | |
| NPSH required | 1.14 m | | |

Design data pump

| | | | |
|---|--|-----------------------------------|------------------------|
| Scope of supply Pump supplied by KSB | Pump + motor | Input voltage and frequency | Without |
| Pump standard | EN 733 | Mains voltage | 400 V |
| Shaft axis position | Horizontal | Mains frequency | 50 Hz |
| Pump design | Close-coupled | Minimum efficiency index MEI | 0.7 |
| Pump system design | Single-pump system | Quantity Stages, single-entry | 1 |
| Specification of wetted parts | Manufactured without paint wetting impairment substances | Installation chamber Casing cover | Conical (A-type cover) |
| Pump direction of rotation, viewed from casing side | Counterclockwise | Bearing bracket size / shaft unit | 25 |
| Impeller diameter D2 | 136 mm | Pump directive | CE |
| Impeller type | Radial, closed, multi-channel | | |
| Free passage | 5.8 mm | | |
| Hydraulic casing foot | No | | |

Nozzle connections pump

| | | | |
|--|------------------------------|--|----------|
| Nominal diameter Suction nozzle | DN 40 | Nominal diameter Discharge nozzle | DN 40 |
| Nominal pressure Suction nozzle | PN 16 | Nominal pressure Discharge nozzle | PN 16 |
| Suction nozzle position | Opposite of discharge nozzle | Discharge nozzle position | 0 deg |
| Suction nozzle design acc.to | EN1092-2 | Discharge nozzle design acc.to | EN1092-2 |
| Suction flange bolt hole pattern as per standard | EN1092-2 | Discharge flange bolt hole pattern as per standard | EN1092-2 |
| Flange facing type Inlet | Raised face (B,RF) | | |
| Flange facing type Outlet | Raised face (B,RF) | | |

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Auxiliary connections pump

| | | | |
|------------------------------|------------------------------|---------------------------------------|------------------------------|
| 6B Fluid Drain | G 1/4 Drilled and plugged | 1M Pressure gauge Discharge nozzle | G 1/4 Drilled and plugged |
| 6D Fluid Filling and venting | G 1/4 Drilled and plugged | 1M Pressure gauge Suction nozzle | G 1/4 Drilled and plugged |
| 5B Venting and drain | G 1/4 Drilled and plugged | | |

Shaft sealing

| | | | |
|----------------------------------|--|---------------------------------|--------------|
| Shaft seal type | Single-acting mechanical seal with vented chamber (A-type casing cover, taper bore) - AV | Shaft seal code | Code 11 |
| | | Shaft seal manufacturer inboard | KSB's choice |
| Determined pressure Seal chamber | 1.5 bar.r | Mechanical seal type inboard | KSB's choice |
| | | Material Shaft seal inboard | BQEGG DW001 |

Materials

| | | | |
|---|--------------------------------|--|------|
| Material Volute casing (102) | EN-GJL-250/A48 CL 35B | Material Bolts/Screws Volute casing (902.01) | 8.8 |
| Material Casing cover (161) | EN-GJL-250/A48 CL 35B | Material Nut Impeller fastening (920.95) | (ST) |
| Material Shaft | C45+N | | |
| Material Impeller (230) | EN-GJL-250/A48 CL 35B | | |
| Material Static seal Volute casing (400.10) | DPAF DW001 | | |
| Material Casing wear ring suction-side | JL/LAMELLAR GRAPHITE CAST IRON | | |
| Material Casing wear ring discharge-side (502.02) | JL/LAMELLAR GRAPHITE CAST IRON | | |
| Material Shaft protecting sleeve (523) | (CRNIMO ST INT) | | |
| Material Static seal Discharge cover | DPAF DW001 | | |
| Material Drive lantern | EN-GJL-250/A48 CL 35B | | |
| Material Support foot | WITHOUT | | |

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Driver

| | | | |
|---|-----------------------------|---|-------------|
| Electric motor | Yes | Rated speed Motor | 2,870 1/min |
| Drive concept | Electric actuator | Number of motor poles | 2 |
| Drive standard, mechanical | IEC | Rated power Motor | 2.2 kW |
| Drive standard electric | IEC | Motor power reserve determined | 58.3 % |
| Motor bearing, insulated | No | Rated voltage Motor | 400 V |
| Motor manufacturer | KSB's choice | Motor winding | 230 / 400 V |
| Customer supply Drive | No | Rated frequency Motor | 50Hz |
| Motor construction type | IM V1 (IM3011) IEC 60034-7 | Motor switching type | Star |
| Motor size | 90L | Rated current Motor | 4.62 A |
| Efficiency class | IE3 (Premium) | Starting current ratio Ia/In | 8.7 |
| Material motor housing | AL | Cos phi at 4/4 load | 0.86 |
| Enclosure Motor | IP55 (TEFC) | Motor efficiency at 4/4 load | 85.9 % |
| Enclosure Unit | Without | Marking according to directive CE Drive | |
| Thermal class | 155 (F) nach IEC 60085 | | |
| Temperature sensor motor | 1 PTC thermistors | | |
| Terminal box position of motor (looking at the motor shaft) | 360 ° | | |
| Operation on a frequency inverter permitted | Yes (acc to motor manufact) | | |
| Sound pressure level Motor | 68 dBa | | |
| Type series Motor manufacturer | Acc. to motor manufacturer | | |

Coating

Aggregate

| | |
|------------------------|-----------------------------------|
| Surface preparation | Free from dirt, grease, rust |
| Properties Primer coat | Hydro dip primer, water-dilutable |
| Thickness Primer coat | 60 µm |
| Properties Top coat | Acrylate dispersion water-thinned |
| Thickness Top coat | 40 µm |
| Colour Top coat | RAL5002 Ultramarine Blue |

Packaging

| | |
|------------------------|-------------------|
| Suitable for transport | Truck transport |
| Suitable for storage | Indoor storage |
| Packaging category | KSB's choice (A0) |

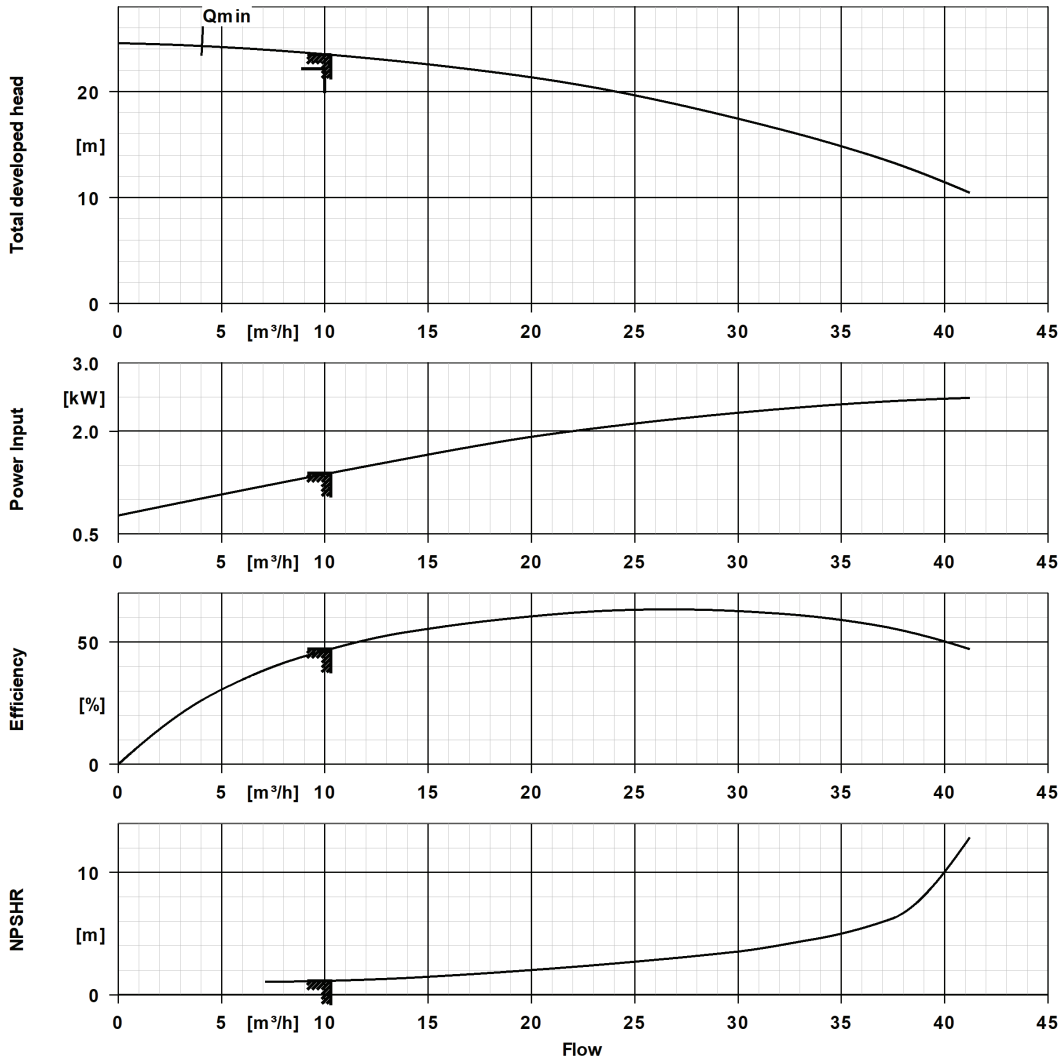
Nameplates

| | |
|----------------------|----|
| Duplicate name plate | No |
|----------------------|----|

Performance Curve (Pump)



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Curve Data

| | | | |
|-----------------------------------|------------------------|--|----------------------|
| Pump speed | 2,927 1/min | Efficiency Pump | 47.1 % |
| Density Fluid handled | 998 kg/m ³ | Minimum efficiency index MEI | 0.7 |
| Kinematic viscosity Fluid handled | 1 mm ² /s | Maximum power input at duty point | 1.39 kW |
| Flow rate | 10.3 m ³ /h | NPSH required | 1.14 m |
| Head | 23.5 m | Hydraulic impeller diameter | 136 mm |
| | | Hydraulic calculation according to standard/ class | EN ISO 9906 Class 3B |



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Dimensions are given in mm

Motor

| | |
|--|--------------|
| Motor manufacturer | KSB's choice |
| Motor size | 90L |
| Rated power Motor | 2.2 kW |
| Number of motor poles | 2 |
| Rated speed Motor | 2,870 1/min |
| Terminal box position of motor (looking at the motor shaft) | 360 ° |

Connections

| | |
|---|----------|
| Nominal diameter Suction nozzle | DN 40 |
| Suction flange bolt hole pattern as per standard | EN1092-2 |
| Nominal diameter Discharge nozzle | DN 40 |
| Discharge flange bolt hole pattern as per standard | EN1092-2 |
| Nominal pressure Suction nozzle | PN 16 |
| Nominal pressure Discharge nozzle | PN 16 |



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Net weight

| | |
|--------------------------------------|---------|
| Total weight Pump | 25.9 kg |
| Total weight Drive | 21 kg |
| Total weight Pump set | 46.9 kg |
| Total weight Assembly/transport aids | 2.42 kg |

Connect pipelines stress-free

Dimensional tolerances for shaft axis height: DIN 747
Dimensions without tolerances, middle tolerances to: ISO 2768-m
Connection dimensions for pumps: EN735
Dimensions without tolerances - welded parts: ISO 13920-B
Dimensions without tolerances - gray cast iron parts: ISO 8062-CT9

Plan for additional connections see extra drawing