

Etaline 050-050-160 GG

ETL 050-050-160-GGSCV11 WSECM2HBB

Operating point 1

Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	40 m³/h	Vapour pressure determined	-0,5264 bar.r
Target head	21 m	Minimum inlet pressure	-0,2681 bar.r
Fluid	Water, raw water	required	
Fluid variant	without further specification	Specified ambient temperature	20 °C
	50658	Installation altitude above sea level	1.000 m
Specified fluid temperature	80 °C		
Density Fluid handled	972 kg/m³		
Kinematic viscosity Fluid handled	0,37 mm²/s		

Operating conditions (performance)

Flow rate	40,08 m³/h	Maximum power input at duty point	3,287 kW
Minimum permissible flow rate	7,164 m³/h	Maximum power input / curve	3,828 kW
Head	21,08 m	Pump speed	2.922 1/min
Shut-off head	27,07 m	Discharge pressure-max.	2,58 bar.r
Efficiency Pump	68,07 %		
NPSH required	2,21 m		

Design data pump

Scope of supply Pump supplied by KSB	Pump + motor	Mains voltage	400 V
Pump standard	EN 733	Mains frequency	50 Hz
Shaft axis position	Vertical	Minimum efficiency index MEI	0,7
Pump design	Close-coupled	Quantity Stages, single-entry	1
Pump system design	Single-pump system	Installation chamber Casing cover	Conical (A-type cover)
Specification of wetted parts	Manufactured without paint wetting impairment substances	Bearing bracket size / shaft unit	25
Pump direction of rotation, viewed from casing side	Counterclockwise	Pump directive	CE
Impeller diameter D2	137 mm		
Impeller type	Radial, closed, multi-channel		
Free passage	11,5 mm		
Hydraulic casing foot	Yes		

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Nozzle connections pump

Nominal diameter Suction nozzle	DN 50	Nominal diameter Discharge nozzle	DN 50
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)		

Auxiliary connections pump

6B Fluid Drain	G 1/4 Drilled and plugged	1M Pressure gauge Discharge nozzle	G 1/4 Pressure sensor
6D Fluid Filling and venting	G 1/4 Drilled and plugged	1M Pressure gauge Suction nozzle	G 1/4 Pressure sensor
5B Venting and drain	G 1/4 Manual globe valve, fitted		

Shaft sealing

Shaft seal type	Single mechanical seal; seal chamber can be vented (A-type casing cover) - AV	Shaft seal code	Code 11
		Shaft seal manufacturer inboard	KSB's choice
Determined pressure Seal chamber	-0,12 bar.r	Mechanical seal type inboard	KSB's choice
		Material Shaft seal inboard	BQEGG DW001

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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 (502.01)	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 Volute casing foot	ST+PAINTED		
Material Support foot	WITHOUT		

Driver

Electric motor	Yes	Rated speed Motor	2.900 1/min
Drive concept	Electric actuator	Number of motor poles	2
Drive standard, mechanical	IEC	Rated power Motor	4 kW
Drive standard electric	IEC	Motor power reserve determined	21,7 %
Motor bearing, insulated	No	Rated voltage Motor	400 V
Motor manufacturer	KSB's choice	Motor winding	400 / 690 V
Customer supply Drive	No	Rated frequency Motor	50Hz
Motor construction type	IM V1 (IM3011) IEC 60034-7	Motor switching type	Delta
Motor size	112M	Rated current Motor	8 A
Efficiency class	IE3 (Premium)	Starting current ratio Ia/In	8,6
Material motor housing	AL	Cos phi at 4/4 load	0,81
Enclosure Motor	IP55 (TEFC)	Motor efficiency at 4/4 load	88,1 %
Enclosure Unit	Without	Limit value Maximum humidity Motor	30 g/m³
Thermal class	155 (F) nach IEC 60085	Marking according to directive Drive	CE
Temperature sensor motor	3 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	72 dBa		
Type series Motor manufacturer	Acc. to motor manufacturer		



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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

Energy cost and Environmental Impact

Product Carbon Footprint indication (cradle-to-gate) (CO2eq) 365 kg

This PCF indication is based on the product mass assuming the typical shares of materials in use. The conversion rate between product mass and CO2 emissions is based on several life cycle assessments acc. ISO 14040 / 14044 of sample products of the same type series. Objective and scope of these LCAs was defined as being limited to the manufacturing phase (cradle-to-gate). With regard to inputs, all materials, energy and auxiliary materials were accounted for, and with regard to outputs, emissions, scrap and waste were accounted for. The impact of outbound logistics is not covered. The assessments' input variables has covered at least 95% of the total product mass. The analysis focuses exclusively on the Global Warming Potential (EF3.0 Climate Change – total).

Packaging

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

Nameplates

Duplicate name plate	No
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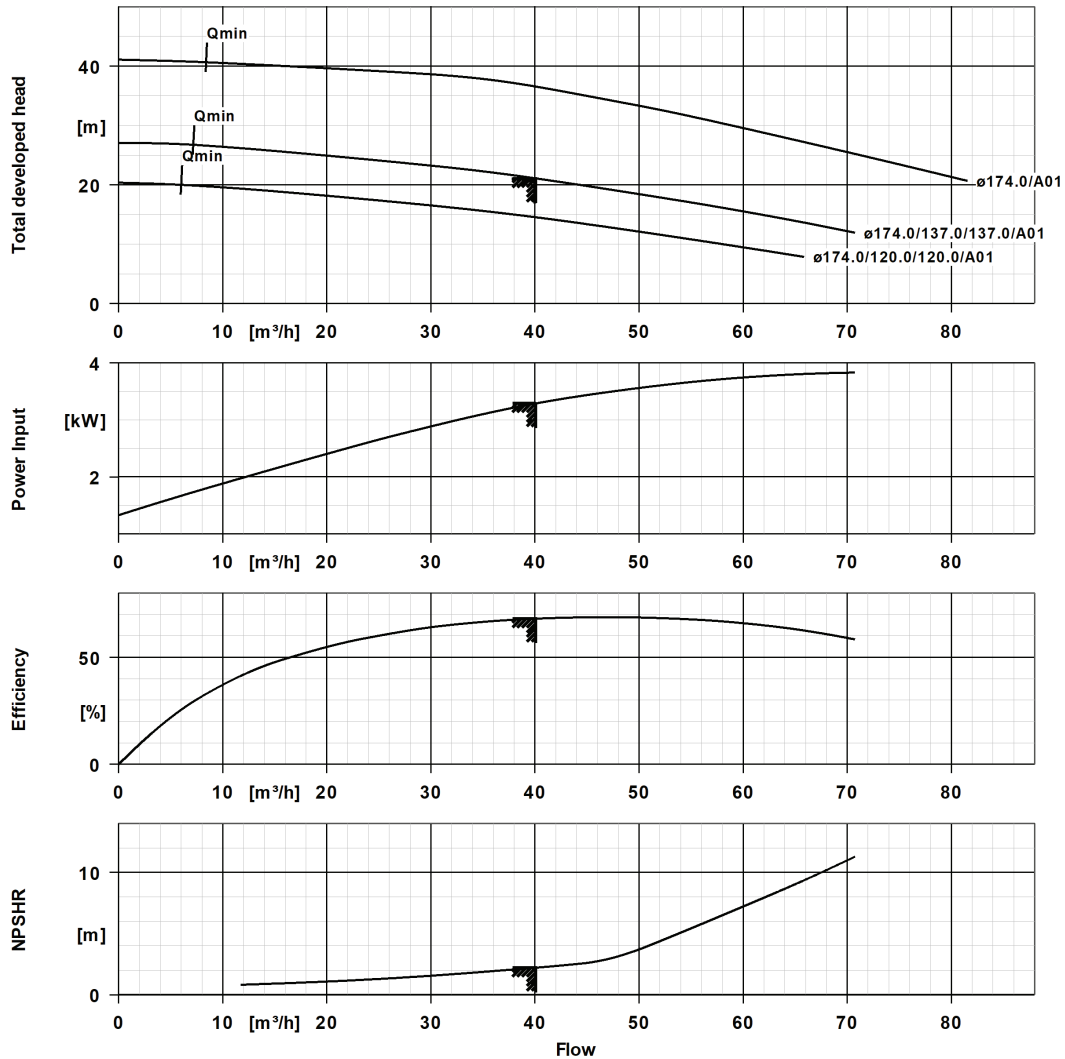
Performance Curve (Pump)



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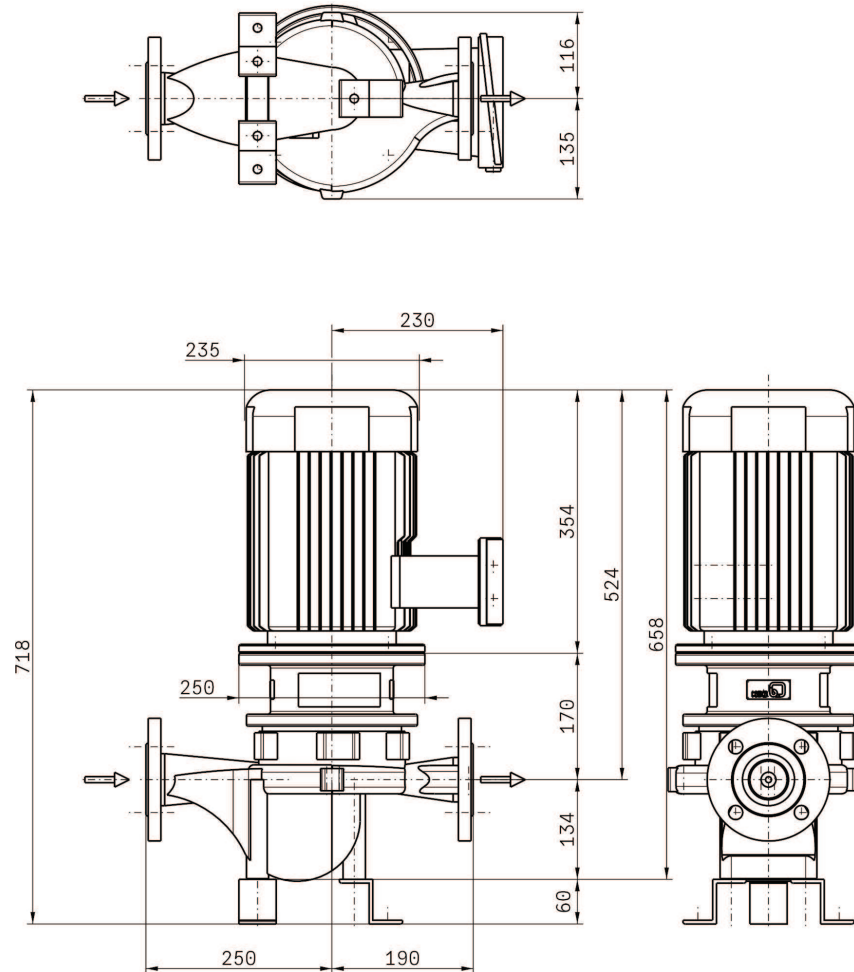


Curve Data

Pump speed	2.922 1/min	Efficiency Pump	68,1 %
Density Fluid handled	972 kg/m ³	Minimum efficiency index MEI	0,7
Kinematic viscosity Fluid handled	0,37 mm ² /s	Maximum power input at duty point	3,29 kW
Flow rate	40,1 m ³ /h	NPSH required	2,21 m
Head	21,1 m	Hydraulic impeller diameter	137 mm
		Hydraulic calculation according to standard/class	EN ISO 9906 Class 3B

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Drawing is not to scale.

Dimensions are given in mm

Motor

Electric motor	Yes
Motor manufacturer	KSB's choice
Motor size	112M
Rated power Motor	4 kW
Number of motor poles	2
Rated speed Motor	2.900 1/min
Terminal box position of motor (looking at the motor shaft)	360 °

Connections

Nominal diameter Suction nozzle	DN 50
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 50
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	32,62 kg
Total weight Drive	38 kg
Total weight Pump set	72,15 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

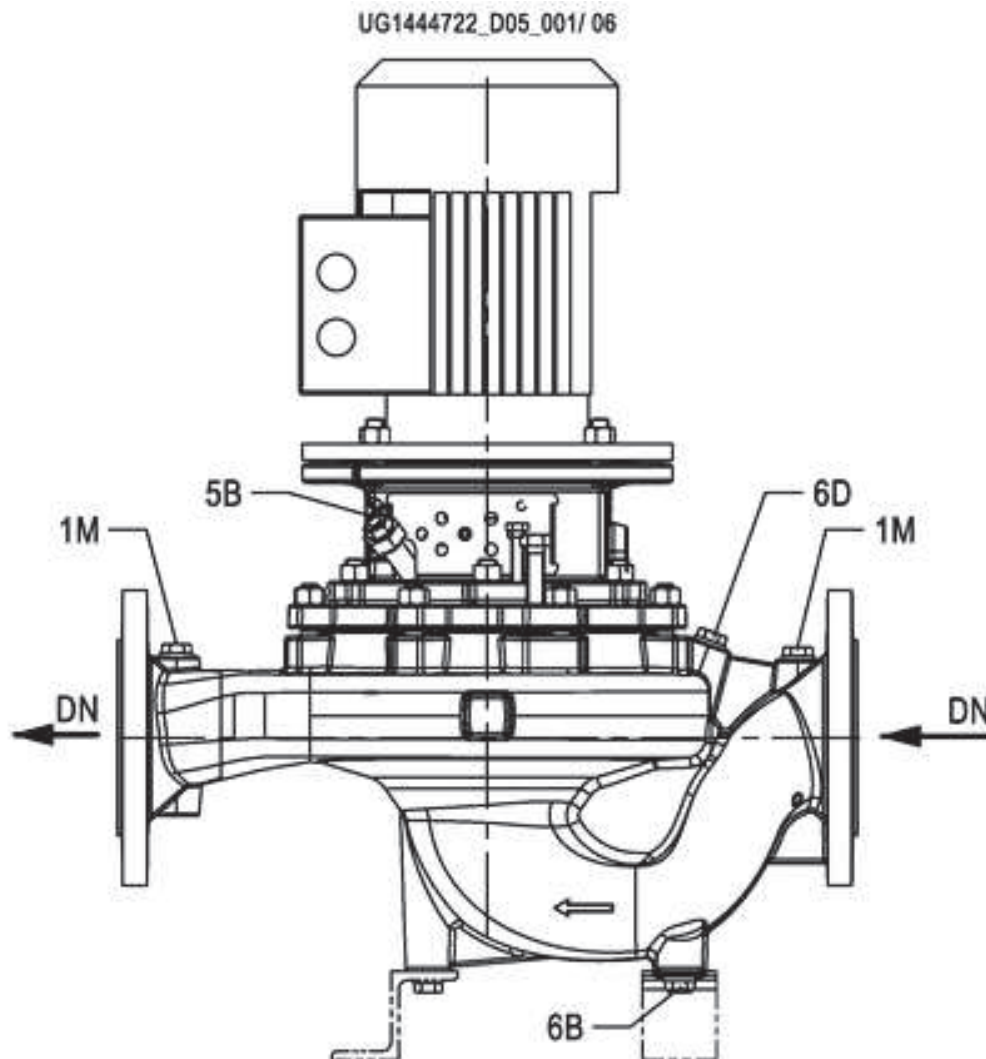
Connection dimensions for pumps: EN735

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

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Connections

6B Fluid Drain	G 1/4	Drilled and plugged
6D Fluid Filling and venting	G 1/4	Drilled and plugged
5B Venting and drain	G 1/4	Manual globe valve, fitted
1M Pressure gauge Discharge nozzle	G 1/4	Pressure sensor
1M Pressure gauge Suction nozzle	G 1/4	Pressure sensor



PumpMeter

Design

Explosion protection type	Monitoring unit	Without
Length Connection cable	Monitoring unit	5 m