

Etabloc 065-050-160 GG

ETB 065-050-160-GGSBV11 WSEEH2HHB

Operating point 1

Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	70 m³/h
Target head	40 m
Fluid	Water
Fluid variant	Clean water
Specified fluid temperature	10 °C
Density Fluid handled	999.5 kg/m³
Kinematic viscosity Fluid handled	1.325 mm²/s

Vapour pressure determined	0.0114 bar.a
Minimum inlet pressure required	-0.3 bar.r
Specified ambient temperature	20 °C
Installation altitude above sea level	1,000 m

Operating conditions (performance)

Flow rate	69.98 m³/h
Minimum permissible flow rate	13.67 m³/h
Head	39.98 m
Shut-off head	44.66 m
Efficiency Pump	79.41 %
NPSH required	2.59 m

Maximum power input at duty point	9.598 kW
Maximum power input / curve	12.33 kW
Pump speed	2,967 1/min
Discharge pressure-max.	4.378 bar.r

Operating point 2

Operating conditions (purchaser requirements)

Target flow rate	70 m³/h
Target mass flow rate	19.16 kg/s
Target head	40 m
Fluid	Water
Fluid variant	Clean water
Specified fluid temperature	55 °C
Density Fluid handled	985.4 kg/m³
Kinematic viscosity Fluid handled	0.5161 mm²/s

Vapour pressure determined	0.1603 bar.a
Minimum inlet pressure required	-0.3 bar.r
Specified ambient temperature	20 °C
Installation altitude above sea level	1,000 m

Operating conditions (performance)

Flow rate	70 m³/h
Minimum permissible flow rate	13.68 m³/h
Head	40 m
Shut-off head	44.67 m
Efficiency Pump	79.41 %
NPSH required	2.59 m

Maximum power input at duty point	9.47 kW
Maximum power input / curve	12.17 kW
Pump speed	2,967 1/min
Discharge pressure-max.	4.317 bar.r

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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	Minimum permissible fluid temperature	0 °C
Specification of wetted parts	Manufactured without paint wetting impairment substances	Maximum permissible fluid temperature	60 °C
Pump direction of rotation, viewed from casing side	Counterclockwise	Quantity Stages, single-entry	1
Impeller diameter D2	172 mm	Casing wear ring design suction-side	Flat
Impeller type	Radial, closed, multi-channel	Casing wear ring design discharge-side	Flat
Free passage	11.6 mm	Installation chamber Casing cover	Conical (A-type cover)
Support foot	No	Bearing bracket size / shaft unit	25
		Pump directive	CE

Nozzle connections pump

Nominal diameter Suction nozzle	DN 65	Nominal diameter Discharge nozzle	DN 50
Nominal pressure Suction nozzle	PN 16	Nominal pressure Discharge nozzle	PN 16
Suction nozzle position	Axial	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	Without Without
6D Fluid Filling and venting	G 1/4 Drilled and plugged	1M Pressure gauge Suction nozzle	Without Without
5B Venting and drain	G 1/4 Drilled and plugged		

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Shaft sealing

Shaft seal type	Single mechanical seal; seal chamber can be vented (A-type casing cover) - AV	Shaft seal code	Code 11
Operating mode of mechanical seal (function)	API plan 03	Shaft seal manufacturer inboard	KSB's choice
Determined pressure Seal chamber	-0.04 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 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		

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Driver

Electric motor	Yes	Rated speed Motor	2,945 1/min
Drive concept	Electric actuator	Number of motor poles	2
Drive standard, mechanical	IEC	Rated power Motor	15 kW
Drive standard electric	IEC	Motor power reserve determined	56.3 %
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 V15 (IM2011) IEC 60034-7	Motor switching type	Delta
Motor size	160M	Rated current Motor	29.4 A
Efficiency class	IE3 (Premium)	Starting current ratio Ia/I _n	9.2
Material motor housing	AL	Cos phi at 4/4 load	0.78
Enclosure Motor	IP55 (TEFC)	Motor efficiency at 4/4 load	91.9 %
Enclosure Unit	Without	Limit value Maximum humidity Motor	30 g/m ³
Thermal class	155 (F) nach IEC 60085	Marking according to directive CE Drive	
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	74 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
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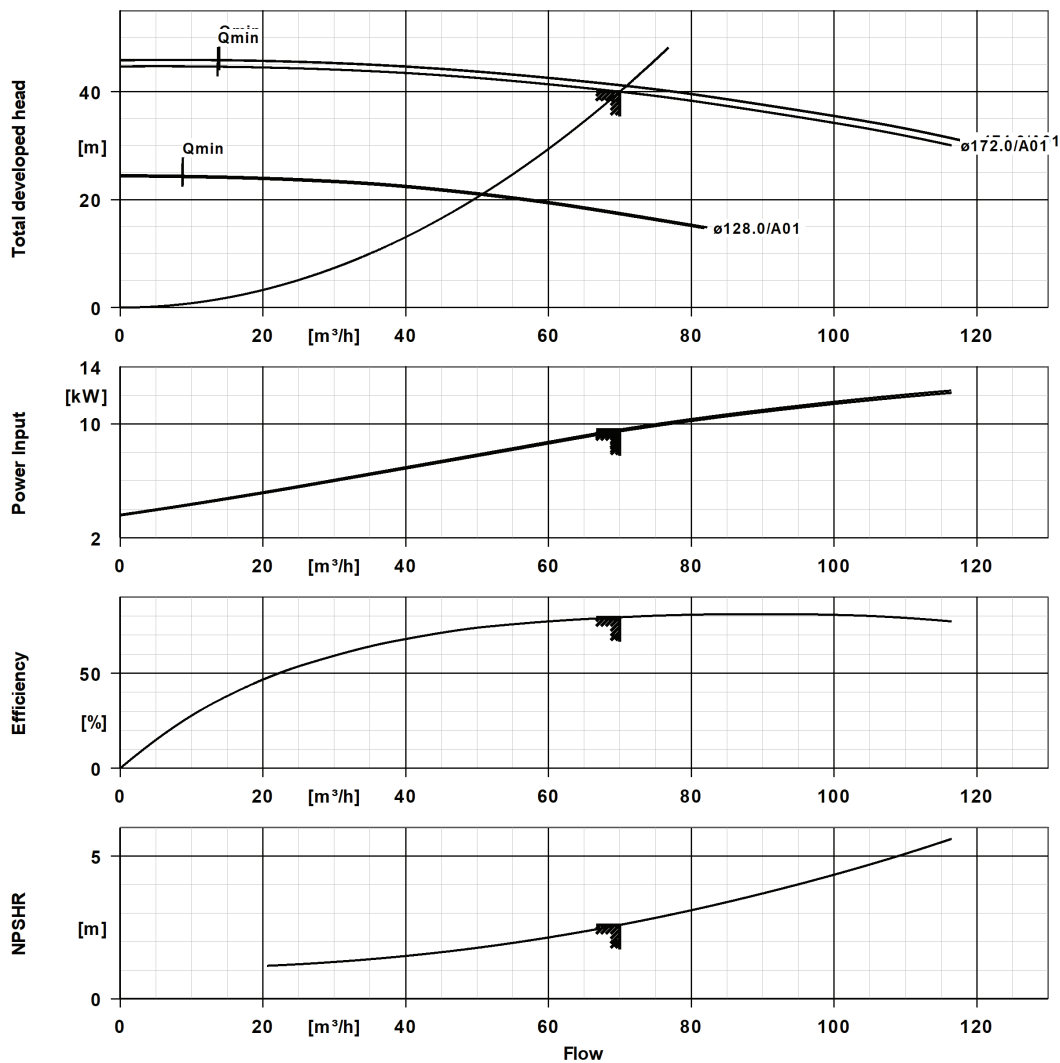
Performance Curve (Pump)



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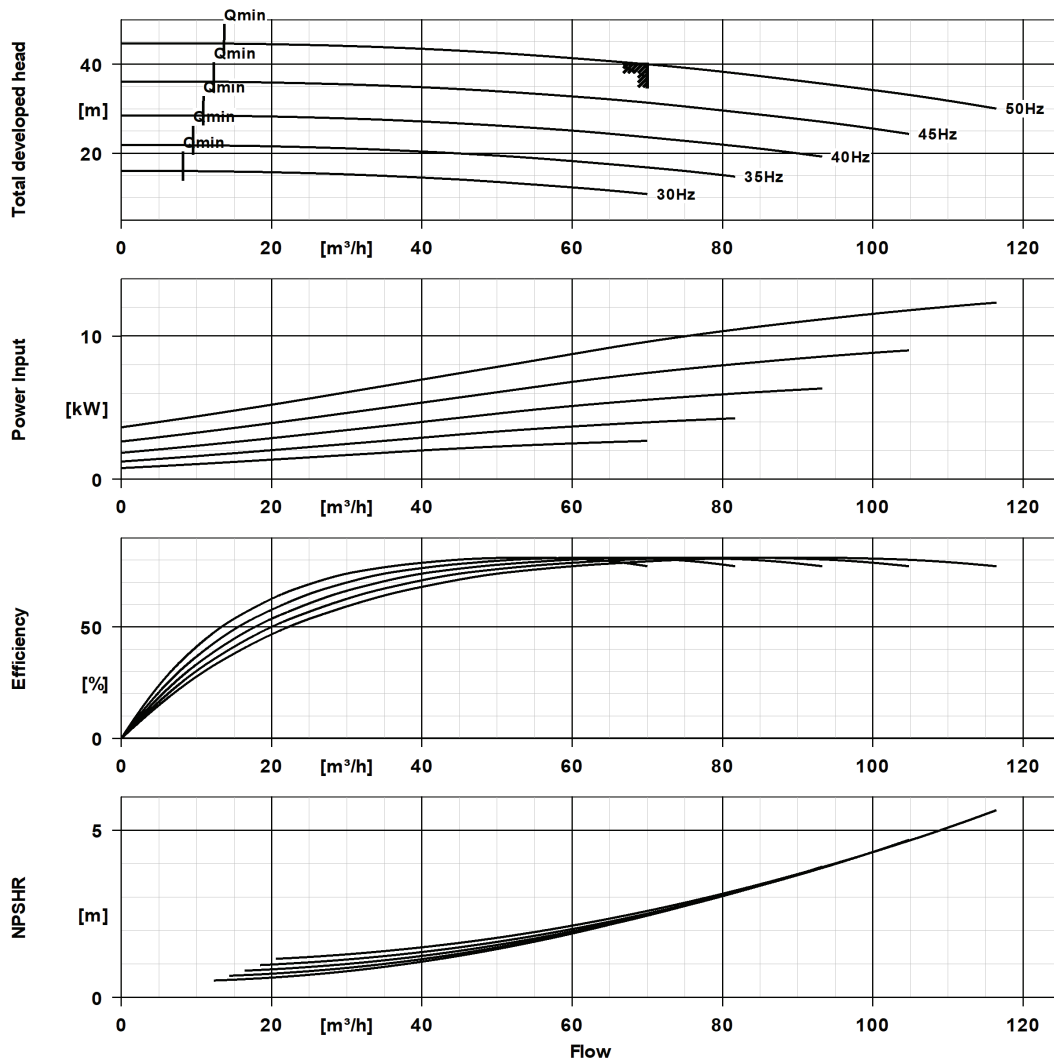
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Curve Data

Pump speed	2,967 1/min	Efficiency Pump	79.4 %
Density Fluid handled	1,000 kg/m^3	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1.33 mm^2/s	Maximum power input at duty point	9.6 kW
Flow rate	70 m^3/h	NPSH required	2.59 m
Head	40 m	Hydraulic impeller diameter	171.8 mm
		Hydraulic calculation according to standard/ class	EN ISO 9906 Class 3B

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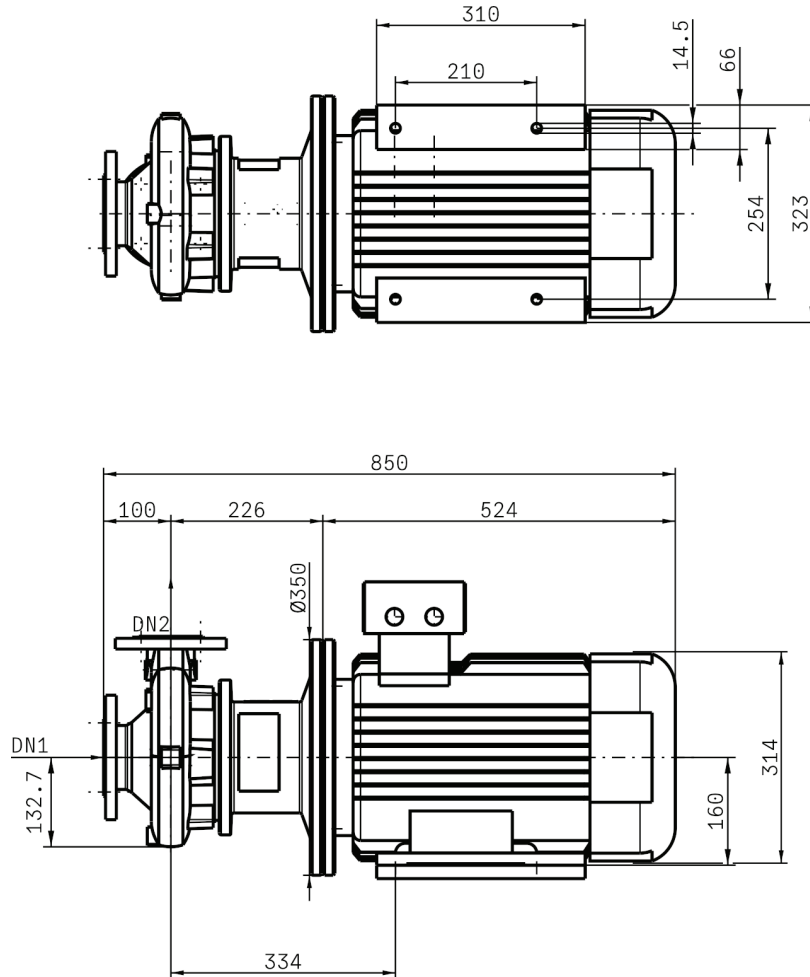


Curve Data

Density Fluid handled	1,000 kg/m^3	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1.33 mm^2/s	Hydraulic impeller diameter	171.8 mm
Flow rate	69.98 m^3/h	Head	39.98 m

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Drawing is not to scale.

Dimensions are given in mm

Motor

Motor manufacturer	KSB's choice
Motor size	160M
Rated power Motor	15 kW
Number of motor poles	2
Rated speed Motor	2,945 1/min
Terminal box position of motor (looking at the motor shaft)	360 °

Connections

Nominal diameter Suction nozzle	DN 65
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	38.45 kg
Total weight Drive	88 kg
Total weight Pump set	126.5 kg
Total weight Assembly/transport aids	3.4 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