

**ETB 050-032-160-GGSBV10WS2AP4HHB**

**Operating point 1 Dimensioning operating point**

**Operating conditions (purchaser requirements)**

Target flow rate	8.5 m³/h	Vapour pressure determined	0.02337 bar.a
Target head	9 m	Minimum required inlet pressure	-0.3 bar
Fluid	Water	Specified ambient temperature	20 °C
Fluid variant	Clean water	Installation altitude above sea level	1,000 m
Specified fluid temperature	20 °C		
Density Fluid handled	998 kg/m³		
Kinematic viscosity Fluid handled	1 mm²/s		

**Operating conditions (performance)**

Flow rate	8.5 m³/h	Maximum power input at duty point	0.3846 kW
Minimum permissible flow rate	2.345 m³/h	max power @ rated impeller	0.5786 kW
Head	9 m	Pump speed	1,500 1/min
Shut-off head	9.233 m	Discharge pressure-max.	0.9037 bar
Efficiency Pump	54.1 %		
NPSH required	2.09 m		

**Design data pump**

Scope of supply Pump supplied by KSB	Pump	Mains voltage	400 V
Pump standard	EN 733	Mains frequency	50 Hz
Shaft axis position	Horizontal	Minimum efficiency index MEI	0.5
Pump design	Close-coupled	Minimum permissible fluid temperature	0 °C
Pump system design	Single-pump system	Maximum permissible fluid temperature	60 °C
Specification of wetted parts	Silicone-free	Quantity Stages, single-entry	1
Pump direction of rotation, viewed from casing side	Counterclockwise	Casing wear ring design suction-side	Flat
Impeller diameter D2	164 mm	Casing wear ring design discharge-side	Flat
Impeller	Closed rad multi-channel imp	Installation chamber Casing cover	Conical (A-type cover)
Free passage	5.8 mm	Bearing bracket size / shaft unit	25
Nut lock for diesel engine	No	Pump bearing type, non-drive end	Anti-friction bearing
Swirl break	No	Pump bearing type, drive end	Anti-friction bearing
		Directive Pump/Valve	CE

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**Nozzle connections pump**

Nominal diameter Suction nozzle	DN 50	Nominal diameter Discharge nozzle	DN 32
Nominal pressure Suction nozzle	PN 16	Nominal pressure Discharge nozzle	PN 16
Suction nozzle position	Axial	Discharge nozzle position	0 deg
Connection standard Inlet	EN1092-2	Connection standard Outlet	EN1092-2
Suction flange bolt hole pattern as per standard	EN1092-2	Discharge flange bolt hole pattern as per standard	EN1092-2

**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
Connection type 24E Quench liquid inlet	Without Without		
Connection type 5B Venting and drain	G 1/4 Drilled and plugged		

**Shaft sealing**

Shaft seal type	SMS A-type cover, vented	Shaft seal code	Code 10
Determined pressure Seal chamber	0.38 bar	Shaft seal manufacturer inboard	KSB's choice
		Mechanical seal type inboard	1
		Material Shaft seal inboard	Q1Q1X4GG

**Materials**

Material Volute casing (102)	EN-GJL-250/A48 CL 35B	Material Bolts/Screws Hydraulic casing (902.01)	8.8
Material Casing cover (161)	EN-GJL-250/A48 CL 35B	Material Screw plug Hydraulic casing (903.01)	ST
Material Shaft	C45+N	Material Static seal Screw plug Volute casing	A4/AISI 316
Material Impeller (230)	EN-GJL-250/A48 CL 35B	Material Nut Impeller fastening (920.95)	(ST)
Material Casing wear ring suction-side (502.01)	JL/LAMELLAR GRAPHITE CAST IRON	Material Key	C45+C/A311 GR 1045 CLASS A
Material Casing wear ring discharge-side (502.02)	JL/LAMELLAR GRAPHITE CAST IRON		
Material Shaft protecting sleeve (523)	(CRNIMO ST INT)		
Material Bearing bracket	WITHOUT		
Material Static seal Discharge cover	DPAF DW001		
Material drive lantern	EN-GJL-250/A48 CL 35B		
Material support foot	(ST)		

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**Driver**

Electric motor	Yes	Rated speed Motor	1,500 1/min
Drive concept	With electric actuator	Number of motor poles	4
Drive standard, mechanical	IEC	Rated power Motor	0.55 kW
Drive standard electric	IEC	Motor power reserve determined	43 %
Motor bearing, insulated	No	Rated voltage Motor	400 V
Motor manufacturer	KSB	Motor winding	- / 400 V
Customer supply Drive	No	Rated frequency Motor	50Hz
Motor construction type	IM V1 (IM3011) IEC 60034-7	Motor starting method	Star
Motor size	80M	Rated current Motor	1.3 A
Efficiency class	IE5 (Ultra Premium)	Motor cos phi at nominal speed	0.79
Material motor housing	AL	Efficiency Motor	88.3 %
Enclosure Motor	IP55 (TEFC)	Directive Drive	CE
Thermal class	155 (F) nach IEC 60085		
Temperature sensor motor	3 PTC thermistors		
Terminal box position of motor (looking at the motor shaft)	360 Grad		
Operation on a frequency inverter permitted	Required by design		
Sound pressure level Motor	60 dBa		
Type series Motor manufacturer	SuPremE D2		

**Installation parts / Accessories**

**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-thin
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)

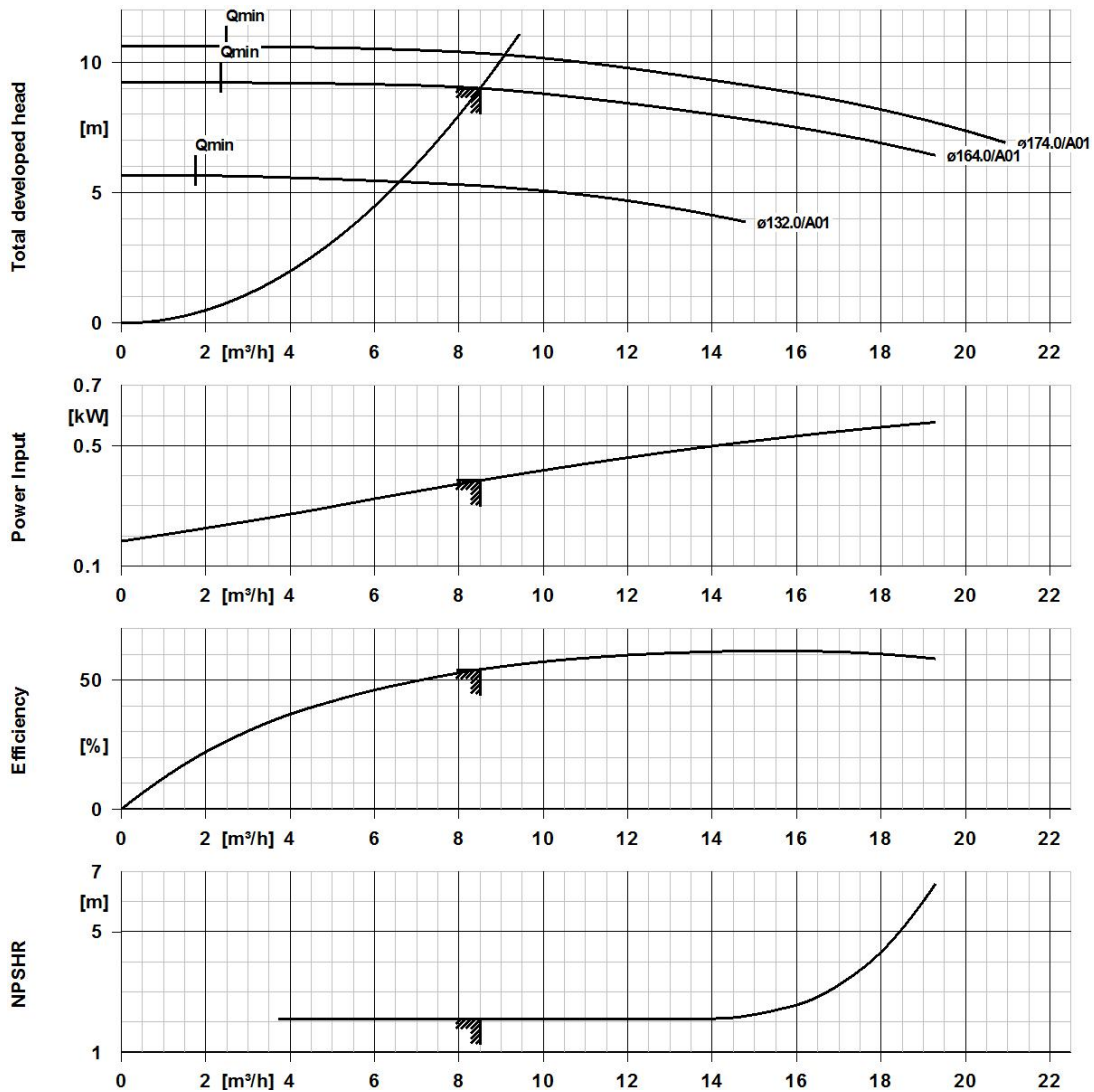
**Baseplate**

Material Installation part Pump (S185)

**Nameplates**

Duplicate name plate	No
Material Installation part Pump	(S185)

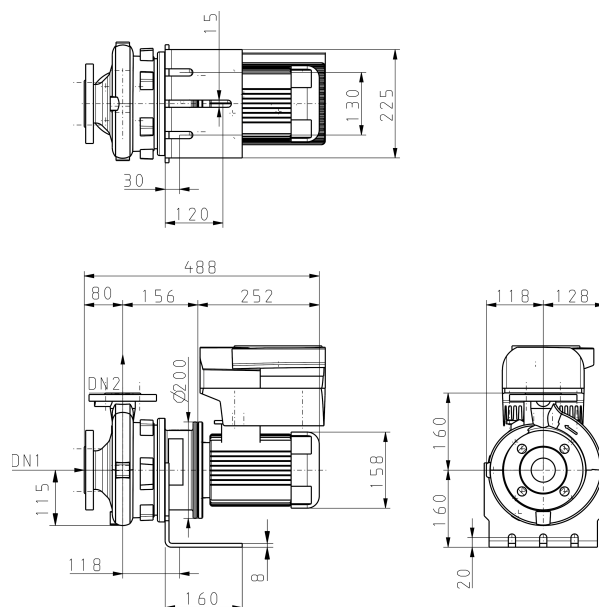
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Curve Data

Pump speed	1,500 1/min	Efficiency Pump	54.1 %
Density Fluid handled	998 kg/m <sup>3</sup>	Minimum efficiency index MEI	0.5
Kinematic viscosity Fluid handled	1 mm <sup>2</sup> /s	Maximum power input at duty point	0.38 kW
Flow rate	8.5 m <sup>3</sup> /h	NPSH required	2.09 m
Head	9 m	Hydraulic impeller diameter	163.4 mm

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Drawing is not to scale.

Dimensions are given in mm

**Motor**

Motor manufacturer	KSB
Motor size	80M
Rated power Motor	0.55 kW
Number of motor poles	4
Rated speed Motor	1,500 1/min
Terminal box position of motor (looking at the motor shaft)	360 Grad

**Connections**

Nominal diameter Suction nozzle	DN 50
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 32
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

**Net weight**

Total weight Pump	30 kg
Total weight Drive	10 kg
Total weight Pump set	40 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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Etabloc (ETB) low-pressure centrifugal pump, standardised pump made by KSB

Horizontal single-stage volute casing pump in close-coupled design, with ratings to EN 733. Axial suction nozzle, discharge nozzle pointing radially upwards. Shaft fitted with a replaceable shaft sleeve in the shaft seal area. Volute casing and casing cover with replaceable casing wear rings. Volute casing with integrally cast pump feet for variants B, C and S.

Compliant with ErP Directive 2009/125/EC. Meets the ecodesign requirements established in 2015 for water pumps with a maximum shaft power of 150 kW as per EU regulation 547/2012; the MEI values (min.  $\geq 0.4$ ) are documented on the name plate and in the data sheet.

Component type series	KSB Etabloc [B]
Fluid	Eau
Maximum specified fluid temperature	20 °C
Maximum permissible fluid temperature	60 °C
Density Fluid handled	998 kg/m <sup>3</sup>
Kinematic viscosity Fluid handled	1 mm <sup>2</sup> /s
Flow rate	8.5 m <sup>3</sup> /h
Head	9 m
Maximum power input at duty point	0.38 kW
NPSH required	2.09 m
Nominal pressure Discharge nozzle	PN 16
Nominal pressure Suction nozzle	PN 16
Nominal diameter Suction nozzle	DN 50
Nominal diameter Discharge nozzle	DN 32
Motor size	80M
Rated frequency Motor	50Hz
Rated voltage Motor	400 V
Motor power P1	0.435 kW
Rated power Motor	0.55 kW
Rated current Motor	1.3 A
Pump speed	1,500 1/min
Number of motor poles	4
Temperature sensor motor	3 PTC thermistors
Thermal class	155 (F) nach IEC 60085
Enclosure Motor	IP55 (TEFC)
Motor starting method	Star
Mains type Motor	AC – three-phase
Motor winding	- / 400 V
Efficiency class	IE5 (Ultra Premium)
Motor canopy	No
Temperature class Drive	Without
Motor manufacturer	KSB
Baseplate type	Without , Without

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Coupling type	Without , Without
Coupling guard type	Without , Without
Properties Top coat	Hydro dip primer, water-dilutable
Colour Top coat	RAL5002 Ultramarine Blue
Total film thickness approx.	100 µm
Design concept	GG
Material Volute casing	EN-GJL-250/A48 CL 35B
Material Casing cover	EN-GJL-250/A48 CL 35B
Material Shaft	C45+N
Material Impeller	EN-GJL-250/A48 CL 35B
Material Bearing bracket	WITHOUT
Material Casing wear ring suction-side	JL/LAMELLAR GRAPHITE CAST IRON
Material Casing wear ring discharge-side	JL/LAMELLAR GRAPHITE CAST IRON
Material Shaft protecting sleeve	(CRNIMO ST INT)
Material Bolts/Screws Hydraulic casing	8.8
Material Nut Impeller fastening	(ST)
Shaft/Stem seal	Inboard SM seal
Shaft seal manufacturer inboard	KSB's choice
Mechanical seal type inboard	1
Material Shaft seal inboard	Q1Q1X4GG
Shaft seal type	SMS A-type cover, vented
Installation chamber Casing cover	Conical (A-type cover)
Operation on a frequency inverter permitted	Required by design
Installation code	2Y
Total weight Pump	30 kg
Total weight Pump set	40 kg
Product description	KSB Etabloc [B] , 050-032-160 , ETB 050-032-160-GGSBV10 , WS2AP4HHB

**Accessories**