

Etaline 032-032-160 GG
 ETL 032-032-160-GGSCV66 WSEBS2HHB

Operating point 1 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	15 m ³ /h	Vapour pressure determined	0.0726 bar.a
Target head	25 m	Minimum inlet pressure	-0.3 bar
Fluid	Antifreeze on propylene glycol base, inhibited, closed system, e.g. Antifrogen L or similar products	required	
Fluid variant	Concentration 50%	Specified ambient temperature	20 °C
Specified fluid temperature	45 °C	Installation altitude above sea level	1,000 m
Density Fluid handled	1,030 kg/m ³		
Kinematic viscosity Fluid handled	2.74 mm ² /s		

Operating conditions (performance)

Flow rate	14.99 m ³ /h	Maximum power input at duty point	1.82 kW
Minimum permissible flow rate	2.84 m ³ /h	Maximum power input / curve	2.37 kW
Head	24.96 m	Pump speed	2,898 1/min
Shut-off head	29.87 m	Discharge pressure-max.	3.02 bar
Efficiency Pump	57.5 %		
NPSH required	2.91 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	Minimum permissible fluid temperature	-30 °C
Pump system design	Single-pump system	Maximum permissible fluid temperature	120 °C
Specification of wetted parts	Manufactured without paint wetting impairment substances	Quantity Stages, single-entry	1
Pump direction of rotation, viewed from casing side	Counterclockwise	Casing wear ring design suction-side	Flat
Impeller diameter D2	147 mm	Casing wear ring design discharge-side	Without
Impeller type	Radial, closed, multi-channel	Installation chamber Casing cover	Conical (A-type cover)
Free passage	5.4 mm	Bearing bracket size / shaft unit	25
Nut lock for Impeller	No	Pump directive	CE
Swirl break	No		
Support foot	No		

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Nozzle connections pump

Nominal diameter Suction nozzle	DN 32	Nominal diameter Discharge nozzle	DN 32
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	Without Without
6D Fluid Filling and venting	G 1/4 Drilled and plugged	1M Pressure gauge Suction nozzle	Without Without
Connection type 5B Venting and drain	G 1/4 Manual globe valve, fitted		

Shaft sealing

Shaft seal type	SMS A-type cover, vented	Shaft seal code	Code 66
Determined pressure Seal chamber	1.96 bar	Shaft seal manufacturer inboard	BURGMANN
		Mechanical seal type inboard	MG13G6
		Material Shaft seal inboard	Q7Q7EGG

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 Static seal Hydraulic casing (400.10)	DPAF DW001	Material Key	C45+C/A311 GR 1045 CLASS A
Material Casing wear ring suction-side	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	With 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	20.6 %
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	Motor efficiency at 4/4 load	85.9 %
Thermal class	155 (F) nach IEC 60085	Directive Drive	CE
Temperature sensor motor	1 PTC thermistors		
Terminal box position of motor (looking at the motor shaft)	360 Grad		
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-thin
Thickness Top coat	40 µm
Colour Top coat	RAL5002 Ultramarine Blue

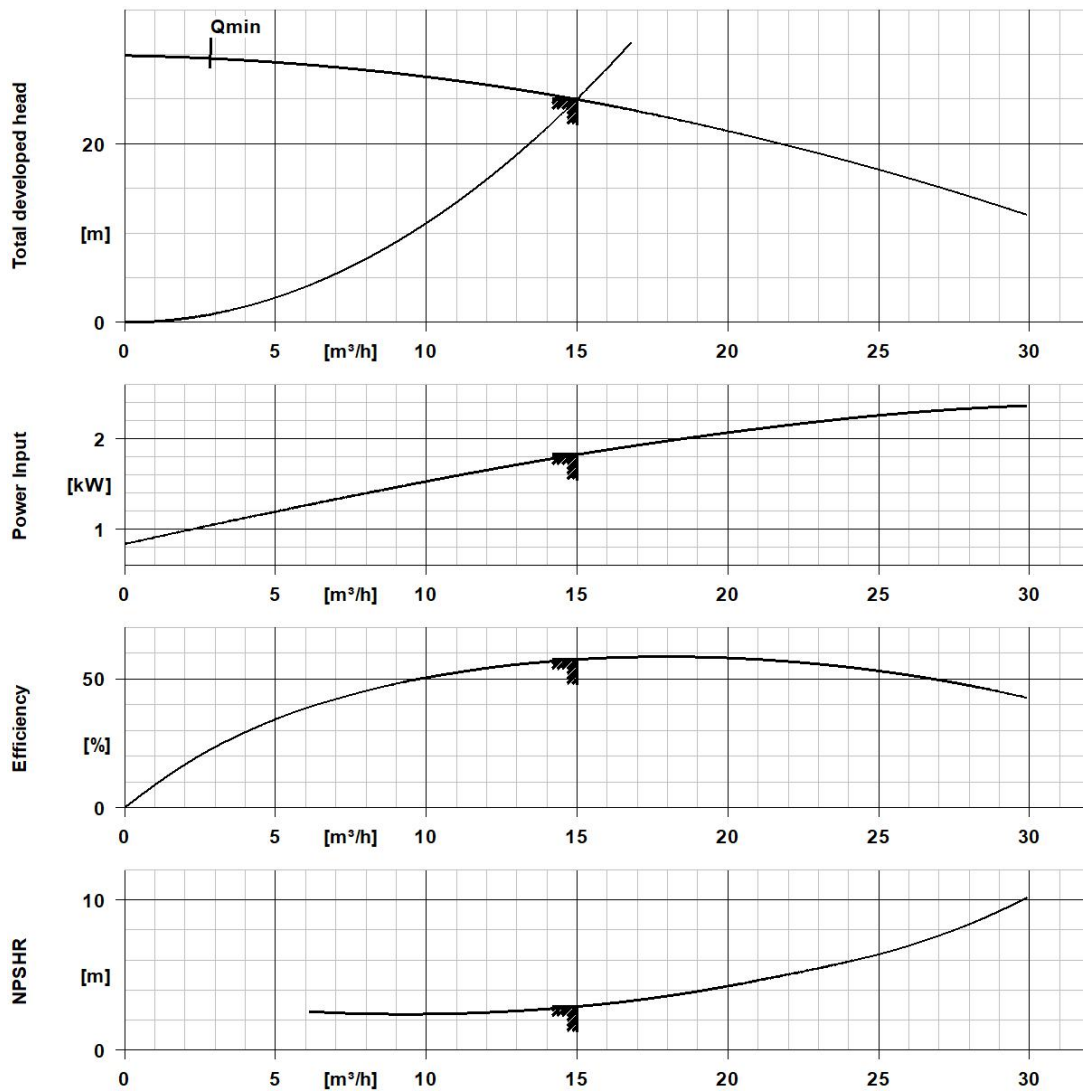
Packaging

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

Nameplates

Duplicate name plate	No
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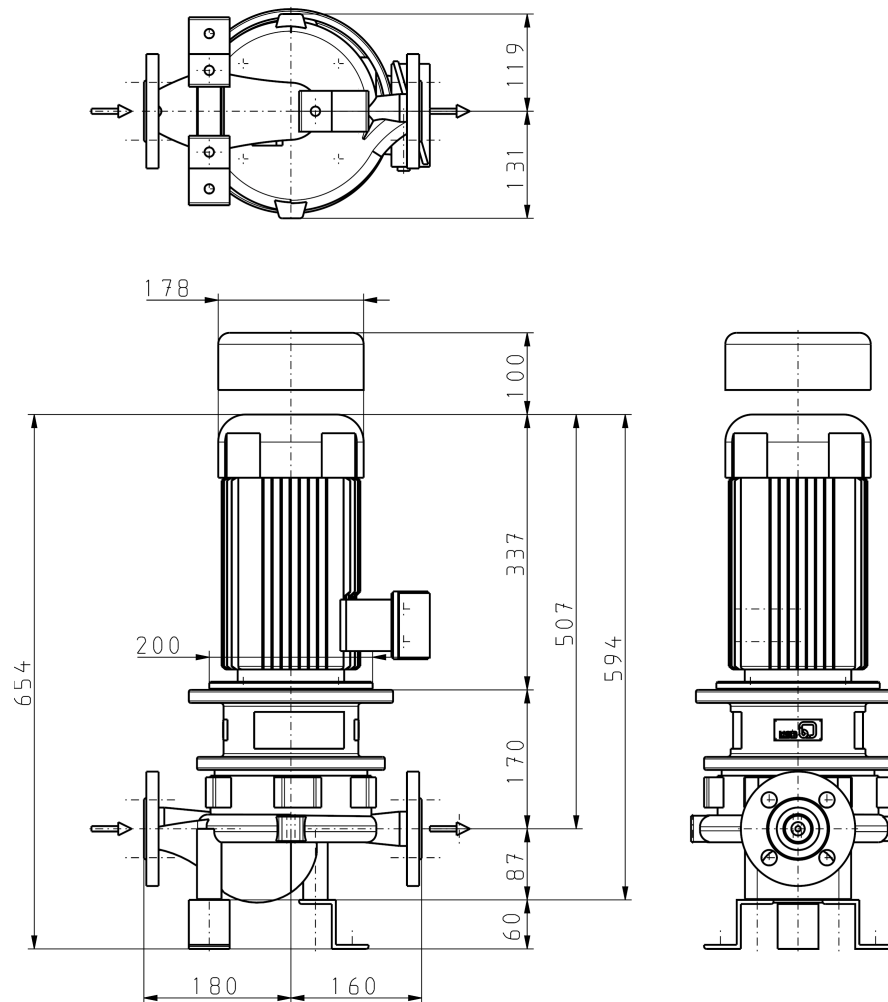
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Curve Data

Pump speed	2,898 1/min	Efficiency Pump	57.5 %
Density Fluid handled	1,030 kg/m ³	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	2.74 mm ² /s	Maximum power input at duty point	1.82 kW
Flow rate	14.99 m ³ /h	NPSH required	2.91 m
Head	24.96 m	Hydraulic impeller diameter	146.1 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

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 Grad

Connections

Nominal diameter Suction nozzle	DN 32
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	25.69 kg
Total weight Drive	21 kg
Total weight Pump set	46.69 kg

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Connect pipelines stress-free

Plan for additional connections see extra drawing

Dimensional tolerances for shaft axis height: DIN 747

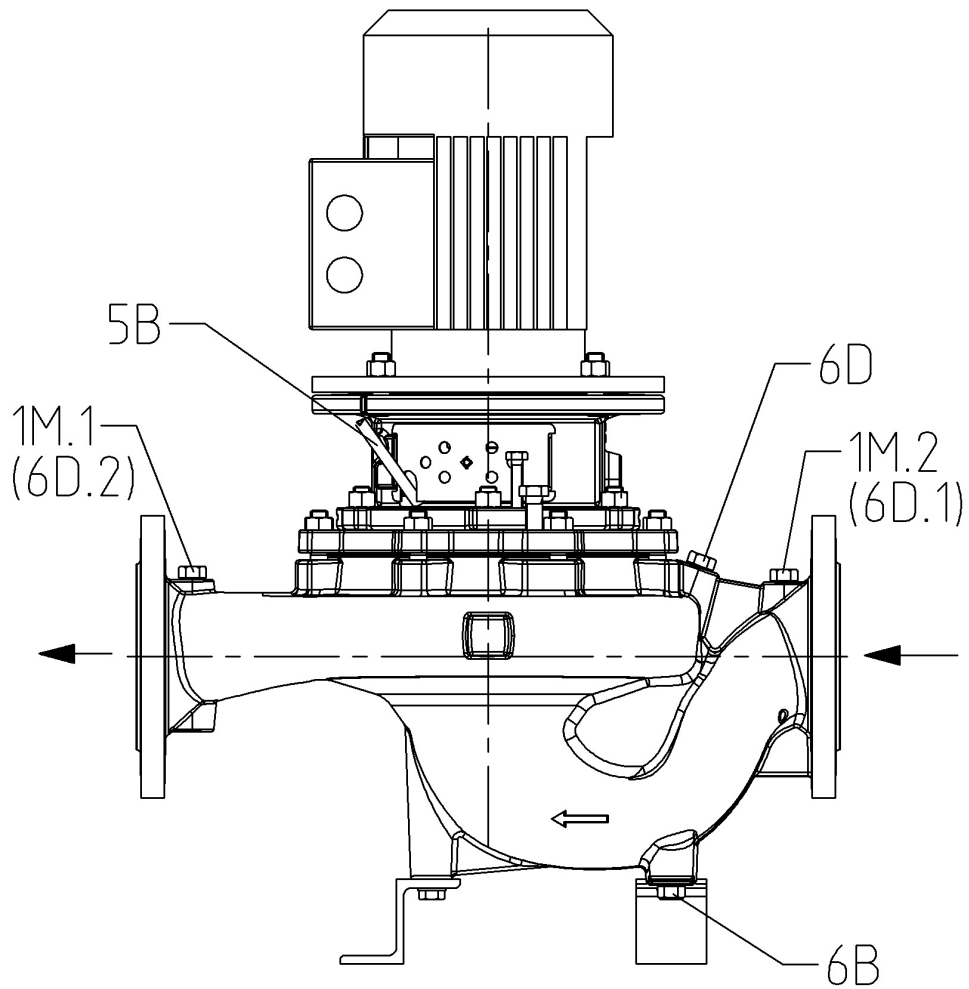
Dimensions without tolerances, middle tolerances to: ISO 2768-m

Connection dimensions for pumps: EN735

Dimensions without tolerances - welded parts: ISO 13920-B

Dimensions without tolerances - gray cast iron parts: ISO 8062-CT9

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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
Connection type 5B Venting and drain	G 1/4	Manual globe valve, fitted