

Etabloc 065-050-160 GG
 ETB 065-050-160-GGSBV11 WSEDY4HHB

Operating point 2

Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	74 m ³ /h	Vapour pressure determined	-0.9766 bar.r
Target mass flow rate	20.51 kg/s	Minimum inlet pressure	-0.3 bar.r
Target head	40.87 m	required	
Fluid	Water	Specified ambient temperature	20 °C
Fluid variant	Clean water	Installation altitude above sea	1,000 m
Specified fluid temperature	20 °C	level	
Density Fluid handled	998 kg/m ³		
Kinematic viscosity Fluid handled	1 mm ² /s		

Operating conditions (performance)

Flow rate	74 m ³ /h	Maximum power input at duty point	10.28 kW
Minimum permissible flow rate	13.84 m ³ /h	Maximum power input / curve	13.06 kW
Head	40.87 m	Pump speed	2,974 1/min
Shut-off head	45.47 m	Discharge pressure-max.	4.45 bar.r
Efficiency Pump	79.94 %		
NPSH required	2.77 m		

Operating point 1

Operating conditions (purchaser requirements)

Target flow rate	74 m ³ /h	Vapour pressure determined	-0.9766 bar.r
Target mass flow rate	20.51 kg/s	Minimum inlet pressure	-0.3 bar.r
Target head	28 m	required	
Fluid	Water	Specified ambient temperature	20 °C
Fluid variant	Clean water	Installation altitude above sea	1,000 m
Specified fluid temperature	20 °C	level	
Density Fluid handled	998 kg/m ³		
Kinematic viscosity Fluid handled	1 mm ² /s		

Operating conditions (performance)

Flow rate	74 m ³ /h	Maximum power input at duty point	6.936 kW
Minimum permissible flow rate	11.79 m ³ /h	Maximum power input / curve	8.068 kW
Head	28 m	Pump speed	2,533 1/min
Shut-off head	32.97 m	Discharge pressure-max.	3.227 bar.r
Efficiency Pump	81.2 %		
NPSH required	2.68 m		

Etabloc 065-050-160 GG
 ETB 065-050-160-GGSBV11 WSEDY4HHB

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	174 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 bearing type, non-drive end	Anti-friction bearing
		Pump bearing type, drive end	Anti-friction bearing
		Pump directive	CE
		Explosion protection directive Pump/Valve for destination country	Not relevant

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)		

Etabloc 065-050-160 GG

ETB 065-050-160-GGSBV11 WSEDY4HHB

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	SMS A-type cover, vented	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

Special design

Variant shaft seal

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		

Etabloc 065-050-160 GG
 ETB 065-050-160-GGSBV11 WSEDY4HHB

Power Drive System

Drive concept	Electric actuator	Rated speed Motor	3,000 1/min
Drive standard, mechanical	IEC	Number of motor poles	4
Drive standard electric	IEC	Rated power Motor	11 kW
Motor manufacturer	KSB	Motor power reserve determined	5.62 %
Customer supply Drive	No	Rated voltage Motor	400 V
Motor construction type	IM V15 (IM2011) IEC 60034-7	Motor winding	- / 400 V
Motor size	160M	Rated frequency Motor	100Hz
Efficiency class	IE5 (Ultra Premium)	Motor switching type	Star
Material motor housing	AL	Maximum current Unit	0 A
Enclosure Motor	IP55	Rated current Motor	23.7 A
Thermal class	155 (F) nach IEC 60085	Cos phi at 4/4 load	0.77
Temperature sensor motor	3 PTC thermistors	Motor efficiency at 4/4 load	92.9 %
Terminal box position of motor (looking at the motor shaft)	360 °	Explosion protection directive Drive	Without
Operation on a frequency inverter permitted	Required by design	Explosion protection directive Drive for destination country	Not relevant
Sound pressure level Motor	71 dBa	Marking according to directive Drive	CE
Type series Motor manufacturer	SuPremE C1	Marking according to directive Drive for destination country	Not relevant

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

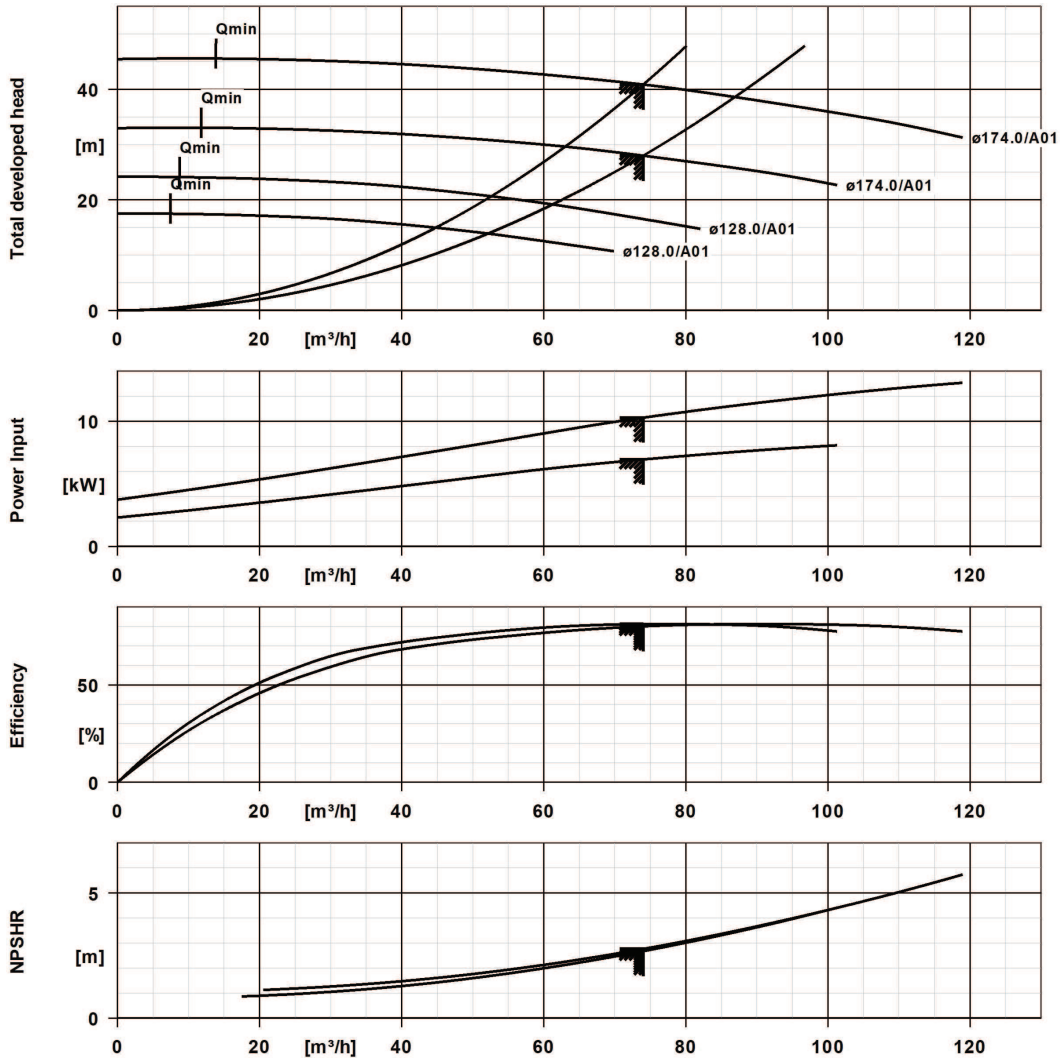
Duplicate name plate	No
----------------------	----

Performance Curve (Pump)



Etabloc 065-050-160 GG
 ETB 065-050-160-GGSBV11 WSEDY4HHB

Version No.: 4



Curve Data

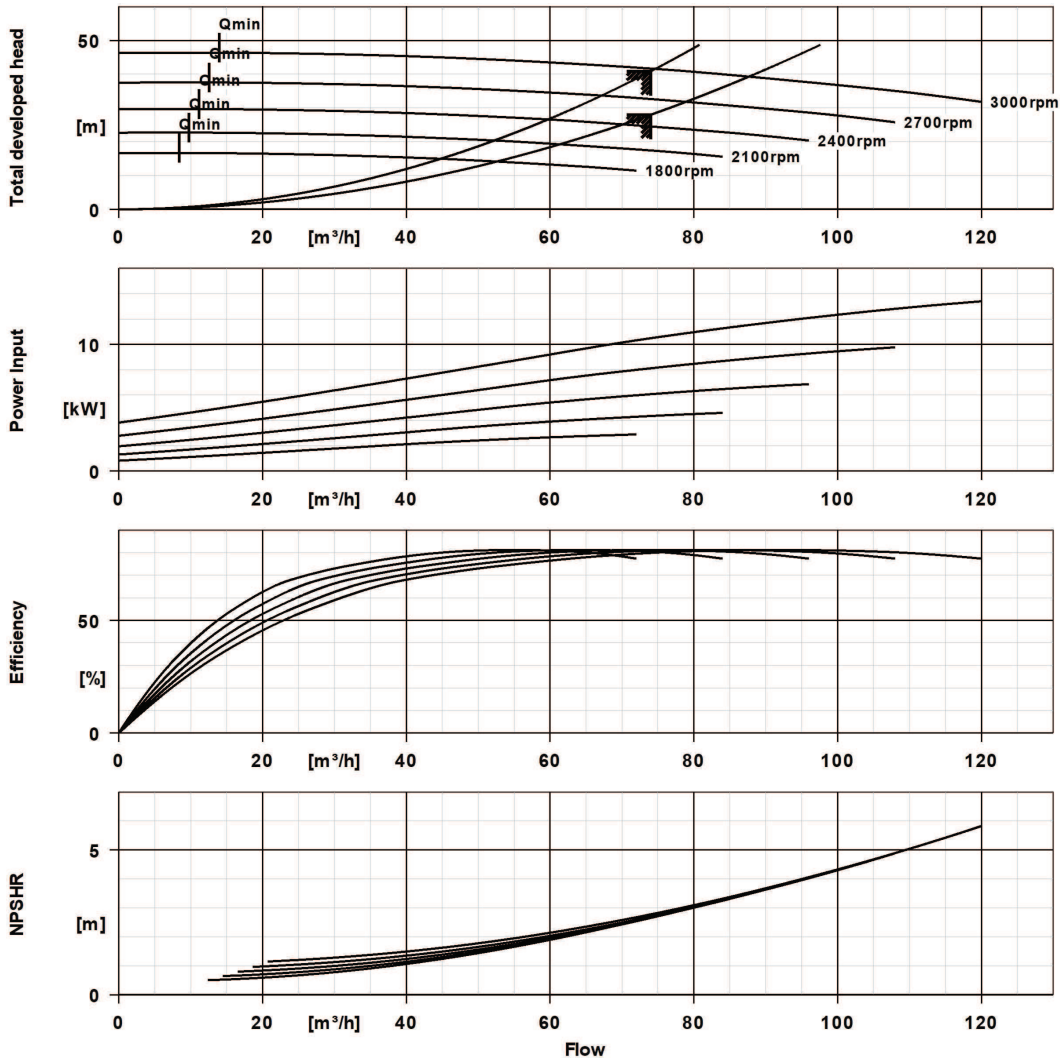
Pump speed	2,974 1/min	Efficiency Pump	79.9 %
Density Fluid handled	998 kg/m³	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1 mm²/s	Maximum power input at duty point	10.3 kW
Flow rate	74 m³/h	NPSH required	2.77 m
Head	40.9 m	Hydraulic impeller diameter	174 mm
		Hydraulic calculation according to standard/class	EN ISO 9906 Class 3B

Speed Curve



Etabloc 065-050-160 GG
 ETB 065-050-160-GGSBV11 WSEDY4HHB

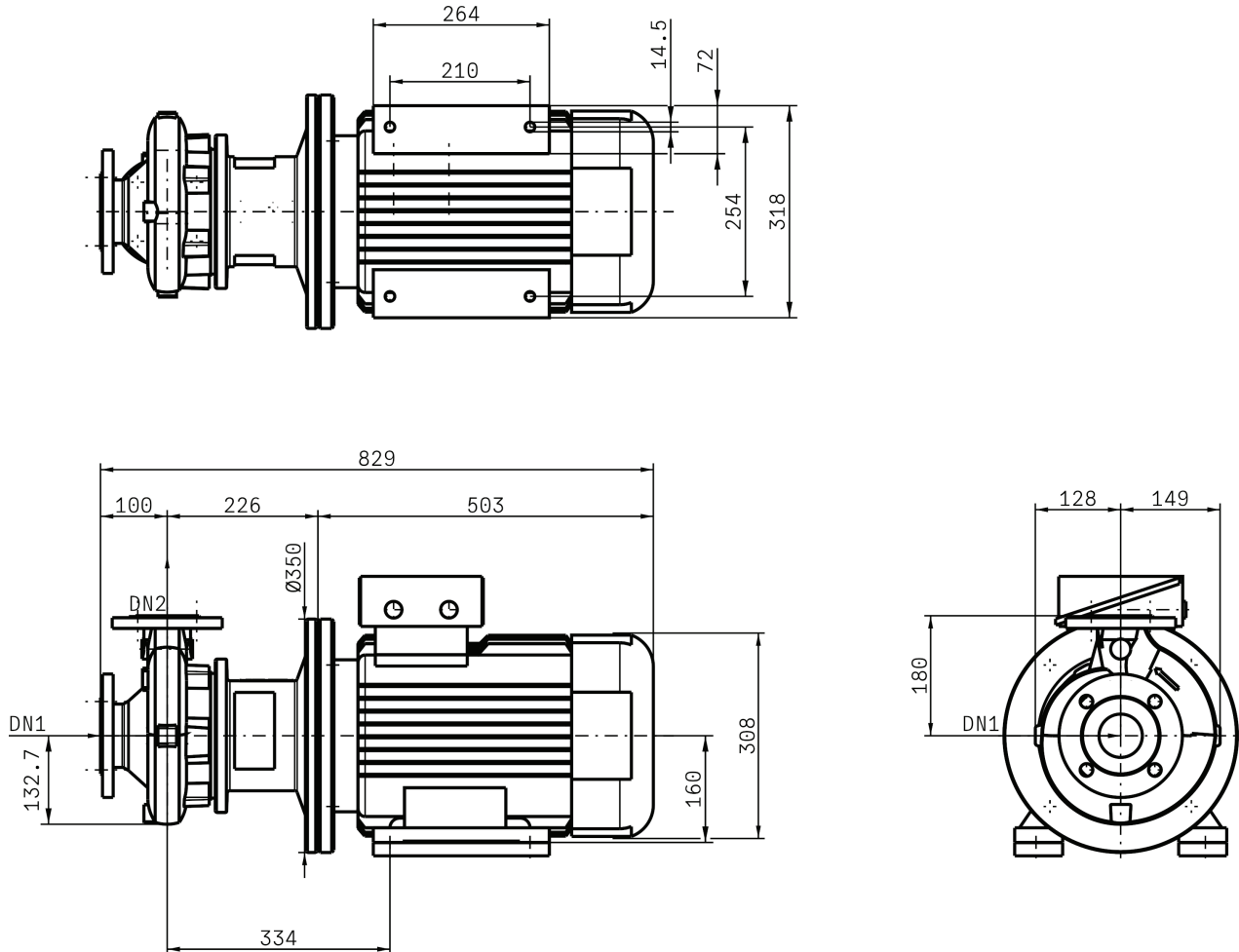
Version No.: 4



Curve Data

Density Fluid handled	998 kg/m^3	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1 mm^2/s	Hydraulic impeller diameter	174 mm
Flow rate	74 m^3/h	Head	40.87 m

Etabloc 065-050-160 GG
 ETB 065-050-160-GGSBV11 WSEDY4HHB



Drawing is not to scale.

Dimensions are given in mm

Motor

Rated power Motor 11 kW
 Rated speed Motor 3,000 1/min

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

Installation plan



Page: 2 / 2

Etabloc 065-050-160 GG

ETB 065-050-160-GGSBV11 WSEDY4HHB

Net weight

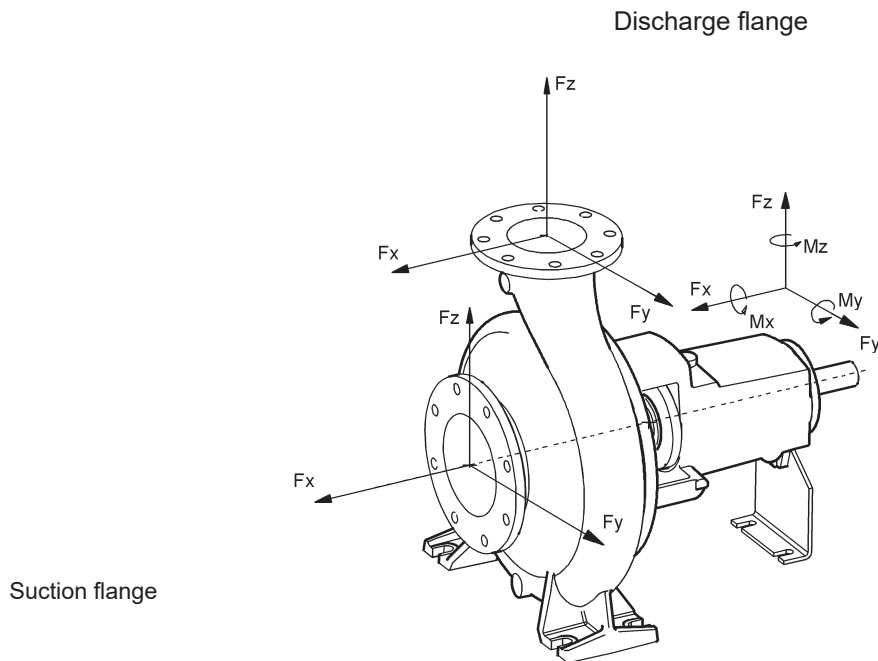
Total weight Pump	38.45 kg
Total weight Pump set	111.9 kg
Total weight of assembly/transport aids	3.4

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

Etabloc 065-050-160 GG
 ETB 065-050-160-GGSBV11 WSEDY4HHB



Drawing is not to scale.

Force and Moment Limits

Suction flange		Discharge flange	
F_x s (+/-)	740 N	F_x d (+/-)	530 N
F_y s (+/-)	650 N	F_y d (+/-)	470 N
F_z s (+/-)	600 N	F_z d (+/-)	580 N
F_{res} s (+/-)	1,153 N	F_{res} d (+/-)	916 N
M_x s (+/-)	530 Nm	M_x d (+/-)	500 Nm
M_y s (+/-)	390 Nm	M_y d (+/-)	350 Nm
M_z s (+/-)	420 Nm	M_z d (+/-)	400 Nm
		Temperature of validity	20 °C

The given force and moment limits are only applicable for static pipe loads. A computerized strength analysis is only available on special request. The values apply for installation on completely grouted baseplates bolted to a rigid, level foundation.