

Etanorm 150-125-250 GB

ETNF150-125-250-GBVAA10 GSIIJ2AHB

Operating point 1 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	5.920 l/min	Vapour pressure determined	-0,9766 bar.a
Target head	65 m	Minimum inlet pressure required	-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	5.920 l/min	Maximum power input at duty point	79,27 kW
Minimum permissible flow rate	118,4 l/min	Maximum power input / curve	87,71 kW
Head	65,58 m	Pump speed	2.940 1/min
Shut-off head	75,19 m	Discharge pressure-max.	7,359 bar
Efficiency Pump	79,51 %		
NPSH required	4,4 m		

Design data pump

Scope of supply Pump supplied by KSB	Bare-shaft pump	Minimum permissible fluid temperature	4 °C
Pump standard	EN 733	Maximum permissible fluid temperature	40 °C
Design according to regulation	Sprinkler acc. to VDS	Quantity Stages, single-entry	1
VDS acceptance number	P 4850418	Casing wear ring design suction-side	Flat
Maximum allowable flow rate VDS	5.923 l/min	Casing wear ring design discharge-side	Flat
Head at maximum permissible flow rate VdS	65,6 m	Installation chamber Casing cover	Conical (A-type cover)
Shaft axis position	Horizontal	Bearing bracket size / shaft unit	60
Pump design	Long-coupled (basepl-mounted)	Bearing bracket type	Bearing bracket
Pump system design	Single-pump system	Bearing bracket design	Heavy
Specification of wetted parts	Manufactured without paint wetting impairment substances	Pump bearing type, non-drive end	Anti-friction bearing
Pump direction of rotation, viewed from casing side	Counterclockwise	Pump bearing type, drive end	Anti-friction bearing
Impeller diameter D2	242 mm	Lubrication type	Grease lubrication
Impeller type	Radial, closed, multi-channel	Bearing seal Pump	Smooth clearance gap
Free passage	22,4 mm	Pump directive	CE
Nut lock for Impeller	Yes		
Swirl break	No		

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Nozzle connections pump

Nominal diameter Suction nozzle	DN 150
Nominal pressure Suction nozzle	PN 16
Suction nozzle position	Axial
Suction nozzle design acc.to	EN1092-2
Suction 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)

Nominal diameter Discharge nozzle	DN 125
Nominal pressure Discharge nozzle	PN 16
Discharge nozzle position	0 deg
Discharge nozzle design acc.to	EN1092-2
Discharge flange bolt hole pattern as per standard	EN1092-2

Auxiliary connections pump

6B Fluid Drain	G 1/2 Drilled and plugged
6D Fluid Filling and venting	G 1/2 Drilled and plugged

1M Pressure gauge Discharge nozzle	G 1/2 Drilled and plugged
1M Pressure gauge Suction nozzle	Without Without

Shaft sealing

Shaft seal type	SMS A-type cover
Operating mode of mechanical seal (function)	API plan 03
Determined pressure Seal chamber	0,13 bar

Shaft seal code	Code 10
Shaft seal manufacturer inboard	KSB's choice
Mechanical seal type inboard	1
Material Shaft seal inboard	Q1Q1X4GG

Materials

Material Volute casing	EN-GJL-250/A48 CL 35B
Material Casing cover	EN-GJL-250/A48 CL 35B
Material Shaft	1.4057+QT800
Material Impeller	CC480K DW
Material Casing wear ring suction-side	CC495K-GS
Material Casing wear ring discharge-side	CC495K-GS
Material Shaft protecting sleeve	(CRNIMO ST INT)
Material Bearing bracket	EN-GJS-400-18-LT
Material Static seal Discharge cover	DPAF DW001

Material Bolts/Screws	8.8
Hydraulic casing	
Material Screw plug Hydraulic casing	ST
Material Static seal Screw plug Volute casing	A4/AISI 316
Material Nut Impeller fastening	(CRNIMO ST INT)
Material Key	1.4571+C/A276 TP 316 COND B

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Driver

Electric motor	No
Drive concept	Combustion engine

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	RAL3000 Flame Red
Colour Top coat Drive	RAL3000 Flame Red

Packaging

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

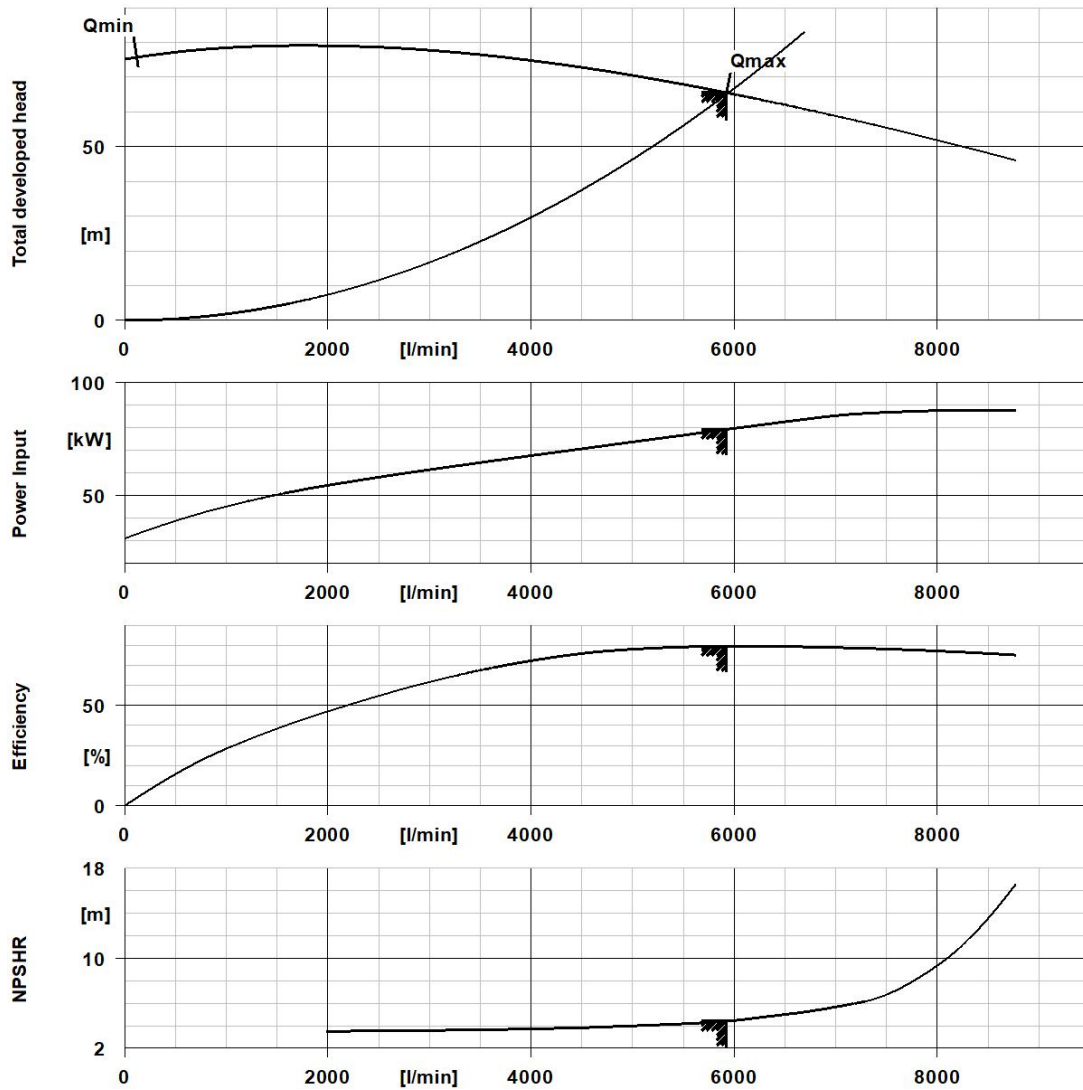
Product properties

Specification of wetted parts	Manufactured without paint wetting impairment substances
Standard Test of specification of wetted parts	KSB documentation
Certificate Check of specification of wetted parts	Without

Nameplates

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Curve Data

Pump speed	2.940 1/min	Efficiency Pump	79,5 %
Density Fluid handled	998 kg/m ³	Maximum power input at duty point	79,3 kW
Kinematic viscosity Fluid handled	1 mm ² /s	NPSH required	4,4 m
Flow rate	5.920 l/min	Hydraulic impeller diameter	242 mm
Head	65,6 m	Hydraulic calculation according to standard/class	EN ISO 9906 Class 3B

According to EN ISO 9906, §4.4.2 (pump input power below 10 kW)

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Motor

Rated power Motor 90 kW

Connections

Nominal diameter Suction nozzle	DN 150
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 125
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	144,8 kg
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Connect pipelines stress-free

Plan for additional connections see extra drawing

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Dimensional tolerances for shaft axis height: DIN 747

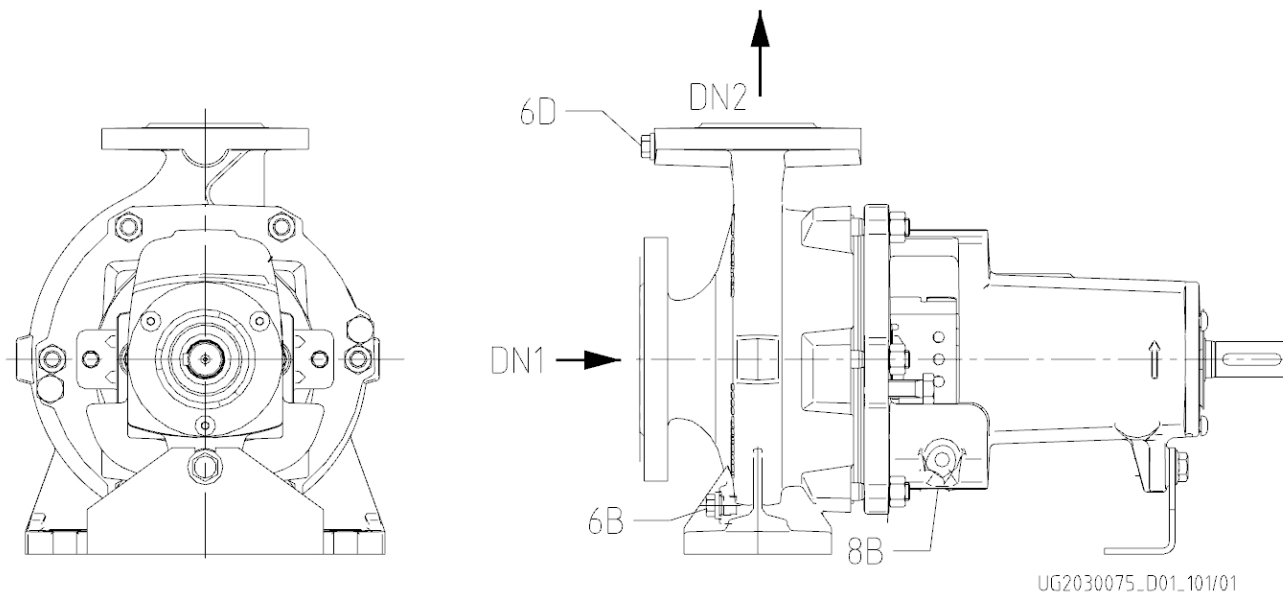
Dimensions without tolerances, middle tolerances to: ISO 2768-m

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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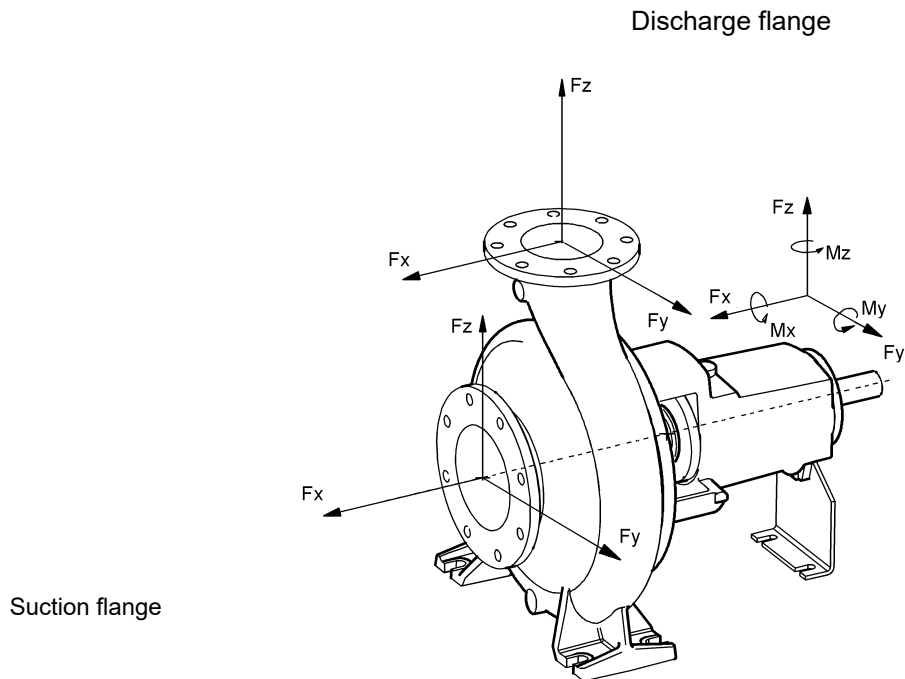


Connections

6B Fluid Drain
6D Fluid Filling and venting
1M Pressure gauge Discharge nozzle
1M Pressure gauge Suction nozzle
Connection size 1M Pressure gauge Suction nozzle
4M Temperature measurement connection
26M Shock pulse measurement

G 1/2	Drilled and plugged
G 1/2	Drilled and plugged
G 1/2	Drilled and plugged
Without	Without
Without	Without
Without	Without
Without	Without

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Drawing is not to scale.

Force and Moment Limits

Suction flange		Discharge flange	
F_x s (+/-)	1.750 N	F_x d (+/-)	1.250 N
F_y s (+/-)	1.600 N	F_y d (+/-)	1.120 N
F_z s (+/-)	1.400 N	F_z d (+/-)	1.400 N
F_{res} s (+/-)	2.754 N	F_{res} d (+/-)	2.186 N
M_x s (+/-)	880 Nm	M_x d (+/-)	740 Nm
M_y s (+/-)	610 Nm	M_y d (+/-)	530 Nm
M_z s (+/-)	720 Nm	M_z d (+/-)	670 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.