



**Etanorm 080-065-160 GG**  
 ETN 080-065-160-GGSAA11 GSEEH2EHB

**Operating point 1 Dimensioning operating point**

**Operating conditions (purchaser requirements)**

Target flow rate	100 m <sup>3</sup> /h	Vapour pressure determined	0.02337 bar.a
Target head	30 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/m <sup>3</sup>		
Kinematic viscosity Fluid handled	1 mm <sup>2</sup> /s		

**Operating conditions (performance)**

Flow rate	100.03 m <sup>3</sup> /h	Maximum power input at duty point	10.1 kW
Minimum permissible flow rate	16.97 m <sup>3</sup> /h	Maximum power input / curve	11.17 kW
Head	30.02 m	Pump speed	2,965 1/min
Shut-off head	34.24 m	Discharge pressure-max.	3.351 bar
Efficiency Pump	80.82 %		
NPSH required	4.51 m		

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**Design data pump**

Scope of supply Pump supplied by KSB	Pump + coupling + coupling guard + baseplate + motor	Mains voltage	400 V
Pump standard	EN 733	Mains frequency	50 Hz
Shaft axis position	Horizontal	Minimum efficiency index MEI	0.7
Pump design	Long-coupled (basepl-mounted)	Minimum permissible fluid temperature	0 °C
Pump system design	Single-pump system	Maximum permissible fluid temperature	60 °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	162 mm	Casing wear ring design discharge-side	Flat
Impeller type	Radial, closed, multi-channel	Installation chamber Casing cover	Conical (A-type cover)
Free passage	12.2 mm	Bearing bracket size / shaft unit	25
Nut lock for Impeller	No	Bearing bracket type	Bearing bracket
Swirl break	No	Bearing bracket design	Medium
		Pump bearing type, non-drive end	Anti-friction bearing
		Pump bearing type, drive end	Anti-friction bearing
		Lubrication type	Grease lubrication
		Bearing seal Pump	V-ring
		Pump directive	CE

**Nozzle connections pump**

Nominal diameter Suction nozzle	DN 80	Nominal diameter Discharge nozzle	DN 65
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)		



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**Auxiliary connections pump**

6B Fluid Drain	G 3/8 Drilled and plugged	1M Pressure gauge Discharge nozzle	Without Without
6D Fluid Filling and venting	G 3/8 Drilled and plugged	1M Pressure gauge Suction nozzle	Without Without
8B Leakage Drain	G 1/2 Drilled		

**Shaft sealing**

Shaft seal type	SMS A-type cover	Shaft seal code	Code 11
Piping plan	API plan 03	Shaft seal manufacturer inboard	KSB's choice
Determined pressure Seal chamber	-0.1 bar	Mechanical seal type inboard	1
		Material Shaft seal inboard	BQ1EGG-WA

**Materials**

Material Volute casing (102)	EN-GJL-250/A48 CL 35B	Material Bolts/Screws	8.8
Material Casing cover (161)	EN-GJL-250/A48 CL 35B	Hydraulic casing (902.01)	
Material Shaft	C45+N	Material Screw plug Hydraulic casing	ST
Material Impeller (230)	EN-GJL-250/A48 CL 35B	Material Static seal Screw plug Volute casing	A4/AISI 316
Material Casing wear ring suction-side (502.01)	JL/LAMELLAR GRAPHITE CAST IRON	Material Nut Impeller fastening (920.95)	(ST)
Material Casing wear ring discharge-side (502.02)	JL/LAMELLAR GRAPHITE CAST IRON	Material Key	C45+C/A311 GR 1045 CLASS A
Material Shaft protecting sleeve (523)	(CRNIMO ST INT)		
Material Bearing bracket (330)	EN-GJL-250/A48 CL 35B		
Material Static seal Discharge cover	DPAF DW001		



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**Driver**

Electric motor	Yes	Rated speed Motor	2,945 1/min
Drive concept	With electric actuator	Number of motor poles	2
Drive standard, mechanical	IEC	Rated power Motor	15 kW
Drive standard electric	IEC	Motor power reserve determined	34.3 %
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 B3 (IM1001) IEC 60034-7	Motor switching type	Delta
Motor alignment	No	Rated current Motor	29.4 A
Motor size	160M	Starting current ratio Ia/In	9.2
Efficiency class	IE3 (Premium)	Cos phi at 4/4 load	0.78
Material motor housing	AL	Motor efficiency at 4/4 load	91.9 %
Enclosure Motor	IP55	Motor service factor	1.13
Thermal class	155 (F) nach IEC 60085	Directive Drive	CE
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		

**Installation parts / Accessories**

**Coupling**

Coupling type	ROFLEX N
Coupling manufacturer	KTR
Nominal size Coupling	80

**Coupling guard**

Coupling guard type	Light (ZN79)
Nominal coupling guard size	A148
Material Coupling guard	ST+Z

**Baseplate**

Baseplate type	Folded plate/U-section
Material Installation part Pump (ST)	
Baseplate size	4A
Drill baseplate at motor end	Yes



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**Coating**

**Aggregate**

Surface preparation  
Properties Primer coat  
Thickness Primer coat  
Properties Top coat  
Thickness Top coat  
Colour Top coat

Free from dirt, grease, rust  
Hydro dip primer, water-dilutable  
60 µm  
Acrylate dispersion water-thin  
40 µm  
RAL5002 Ultramarine Blue

**Packaging**

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

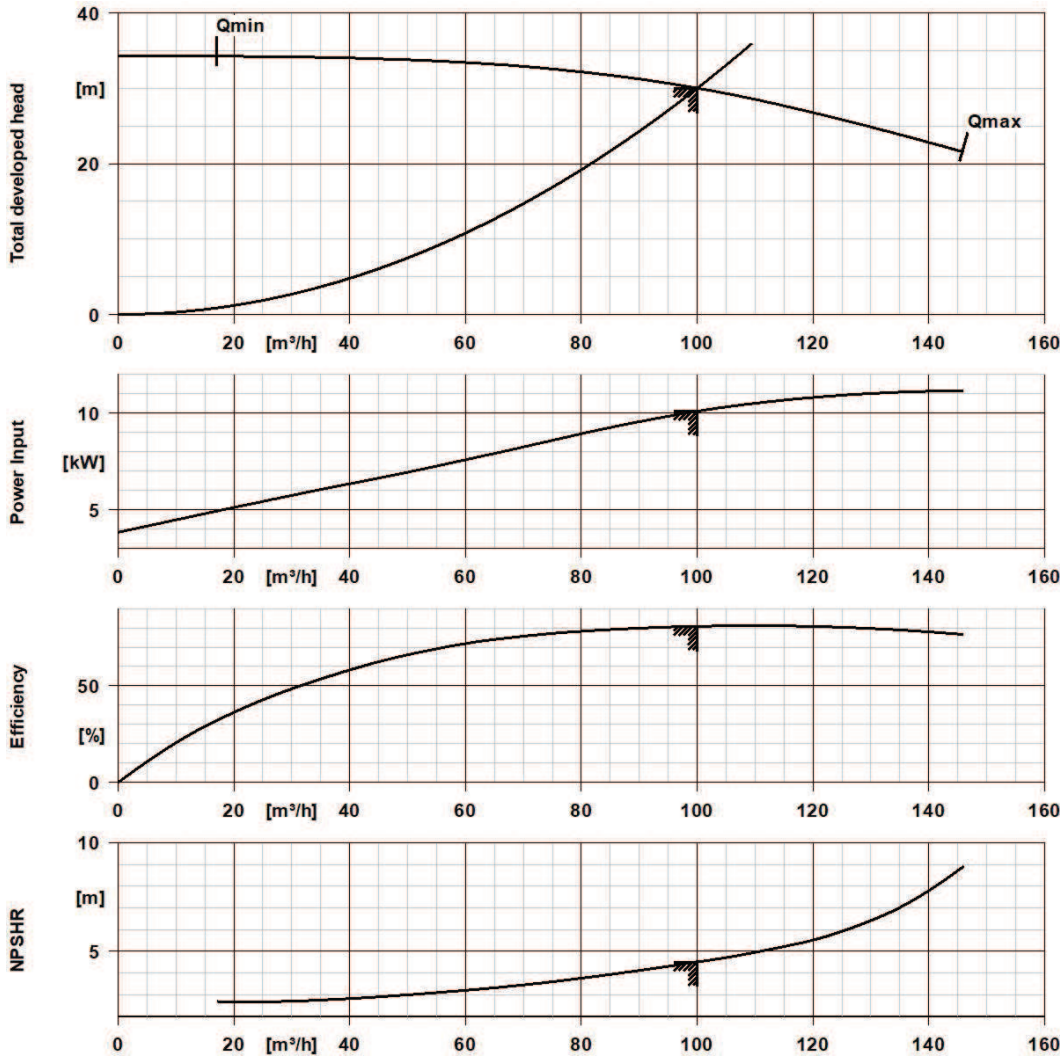
**Nameplates**

Duplicate name plate	No
Material Installation part Pump (ST)	

# Performance Curve (Pump)



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### Curve Data

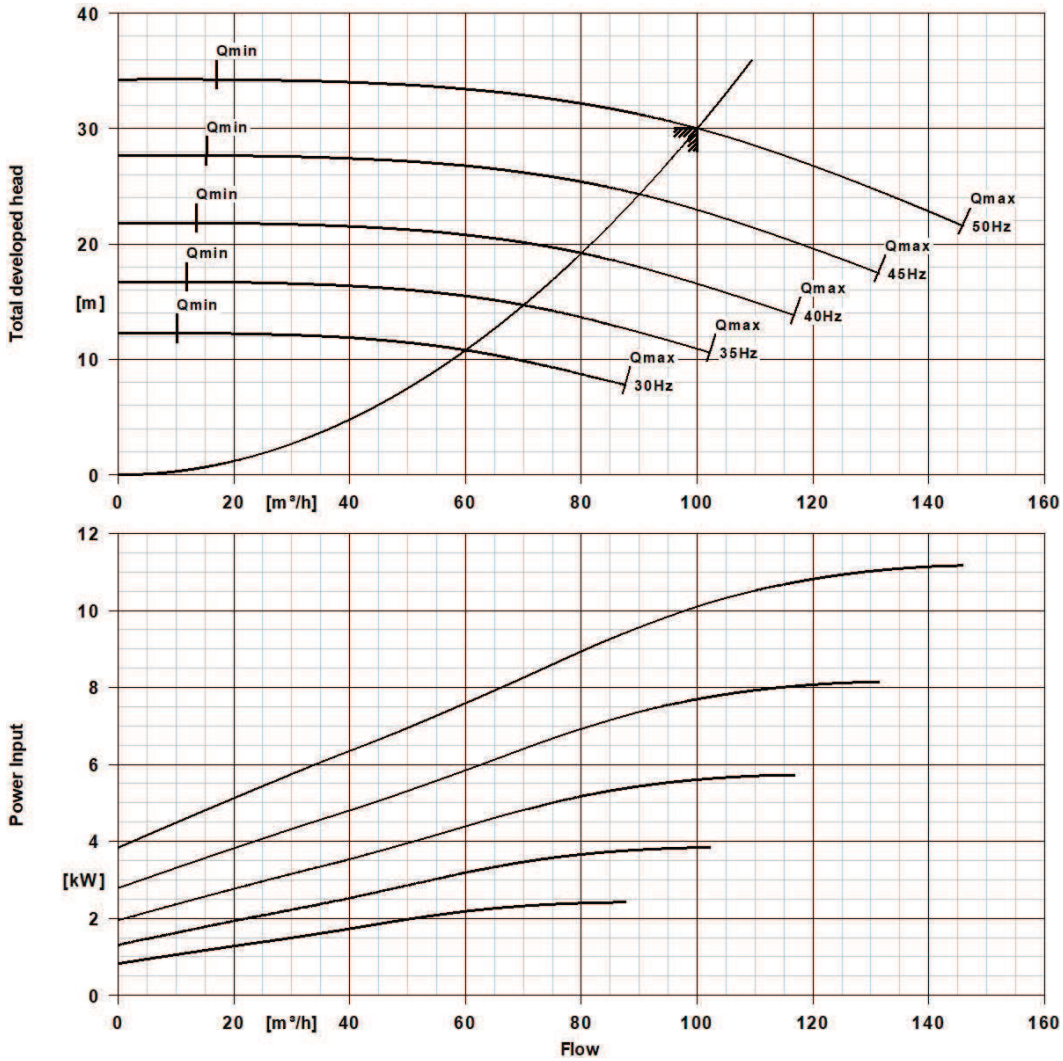
Pump speed	2,965 1/min	Efficiency Pump	80.8 %
Density Fluid handled	998 kg/m <sup>3</sup>	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1 mm <sup>2</sup> /s	Maximum power input at duty point	10.1 kW
Flow rate	100 m <sup>3</sup> /h	NPSH required	4.51 m
Head	30 m	Hydraulic impeller diameter	161.1 mm
		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)

# Speed Curve



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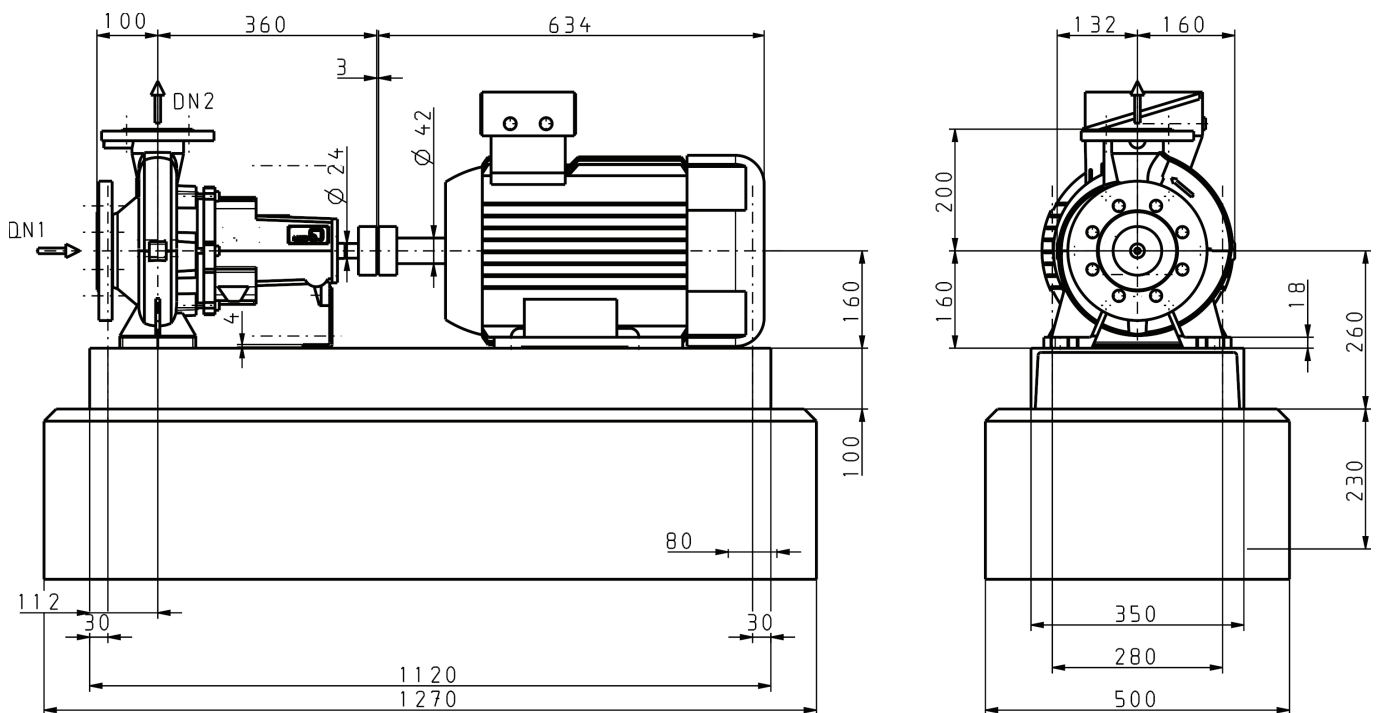
### Curve Data

Density Fluid handled	998 kg/m <sup>3</sup>	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1 mm <sup>2</sup> /s	Hydraulic impeller diameter	161.1 mm
Flow rate	100.03 m <sup>3</sup> /h	Head	30.02 m

# Installation plan



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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 °

### Baseplate

Baseplate type	Folded plate/U-section
Baseplate size	4A

### Connections

Nominal diameter Suction nozzle	DN 80
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 65
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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### **Coupling**

Coupling manufacturer	KTR
Coupling type	ROFLEX N
Nominal size Coupling	80

### **Net weight**

Total weight Pump	46.9 kg
Total weight Installation parts	68.93 kg
Total weight Coupling	1.5 kg
Total weight Contact guard	0.53 kg
Total weight Drive	88 kg
Total weight Pump set	205.9 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**