

**RPH S8 080-280B**

Heavy Duty Centrifugal Pump to API 610 latest edition

**Operating data**

Requested flow rate		Efficiency	60.0 %
Operating data determined for maximum inlet pressure		Power absorbed	20.04 kW
Requested developed head		Pump speed of rotation	2969 rpm
Pumped medium	+ LCF Naphta	NPSH required	2.79 m
	+	Stuffing box press.	4.90 bar
	Not containing chemical and mechanical substances which affect the materials	Permissible operating pressure	46.36 bar.g
Ambient air temperature	20.0 °C	Discharge press.	7.29 bar.g
Fluid temperature	108.0 °C	Differential pressure	5.72 bar
Fluid density	702 kg/m <sup>3</sup>	Shutoff pressure	8.79 bar.g
Fluid viscosity	0.39 mm <sup>2</sup> /s	Max. power on curve	22.56 kW
Suction pressure max.	1.57 bar.g	Min. allow. flow for continuous stable operation	24.94 m <sup>3</sup> /h
Suction pressure min.	1.53 bar.g	Min. thermal flow rate	8.31 m <sup>3</sup> /h
Design temperature	108.0 °C	Shutoff head	104.93 m
Maximum allowable working pressure (MAWP) at design temperature	46.36 bar.g	Bypass	0.00 m <sup>3</sup> /h
NPSH available	4.00 m	Sound pressure level LpA for pump without motor	68 dBa
Vapour pressure	2.25 bar.a	Performance test	No tolerances to API 610 12th edition
Ratio Q/Q <sub>bep</sub>	91.1 %		

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**Design**

Pump standard	API 610 12th Ed. (+ API 682 4th Ed.)	Contact guard	With
Casing drain	Pipe connection with flange	Impeller diameter	279.0 mm
Pump without drive group accessories		Minimum impeller diameter	230.0 mm
Type of casing :	Double volute	Full impeller diameter	288.0 mm
Type of casing :	Single volute	Direction of rotation from drive	Clockwise
Casing Support :	Centerline	Bearing bracket construction	Standard (normal)
Venting :	Self venting	Bearing bracket size	B03
Design	Baseplate mounted, long-coupled	Bearing seal	AES labyrinth ring
Orientation	Horizontal	Bearing type	Anti-friction bearings
Suction flange according to(DN1)	ASME B 16.5 / NPS 4 / CL 300 / RF	Lubrication type	Oil bath prepared for oil mist
Discharge flange according to(DN2)	ASME B 16.5 / NPS 3 / CL 300 / RF	Lubrication monitoring	Constant level oiler + Oil level sight glass
Flanged openings are provided with metal closures at least 5 mm thick, with elastomer gaskets and at least four full-diameter bolts.		Constant level oiler manufacturer	KSB standard
Shaft seal	-	Fan cooling	Without
Manufacturer	-	Temperature sensor PT100 inboard	Without
Type	-	Temperature sensor PT100 outboard	Without
Material code	-	Vibration measurement tapping	With
Sealing plan	API plan 11+52: Dual seal cartridge with circulation from discharge (process side) with unpressurized buffer system (quench liquid between seals) without throttle bushing	2 vibration sensors Vibrotec	Without
		Wiring of monitoring accessories	None
		Thrust bearing	7311BMUA
		Radial bearing	NU213 E
		Quantity of bearings in fixed bearing assembly	2

mechanical seal acc. to API 682 4th Edition

Attention! Pump without shaftseal! Customer will install a shaftseal by himself.

Seal chamber design	Standard seal chamber
Auxiliary piping material	1.4404/AISI 316L
Drain material	Steel ST

**Driver, accessories**

Driver type	Electric motor	Rated power P2	30.00 kW
Drive standard mech.	IEC	Available reserve	49.73 %
Drive supplied by	without motor	Number of poles	2
Motor const. type	B3	For conformity with API 610, vertical jack screws for motors above 225 kg must be considered in addition.	
Motor size	200L	Motor data can vary from type plate information. Motor data describes KSB's choice functional specification and is used for pump selection.	
Frequency	50 Hz		

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**Materials S8**

Volute casing (102)	Carbon steel A216 WCB	Casing wear ring (502.1)	Stainless steel 1.4408
Casing cover (161)	Carbon steel A216 WCB	Casing wear ring (502.2)	Stainless steel 1.4408
Shaft (210)	Duplex stainless steel 1.4462	Impeller wear ring (503.1)	Stainless steel 1.4408
Impeller (230)	Stainless steel 1.4409	Impeller wear ring (503.2)	Stainless steel 1.4408
Bearing bracket (330)	Carbon steel A216 WCB	Throttle bush (542.2)	Stainless steel 1.4571
Joint ring (411.10)	1.4571 - Graphite	Stud (902.1)	A193/193M Gr.B7

**Certifications****Balancing test: Impeller (230)**

Balancing grade	G 2,5
Certificate	Inspection cert. 3.1 to EN 10204
Test participation	Non-witnessed

**Hydrostatic test (room temp.)**

Range	Complete pump without shaft seal
Test pressure	76.65 bar.g
Test time	30.0 min
Certificate	Inspection cert. 3.1 to EN 10204
Test participation	Non-witnessed

**Material certificates: Volute casing (102)**

Certificate	Inspection cert. 3.1 to EN 10204
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**Order documentation**

The following documents will be supplied with the order:

Technical data sheet  
 Auxiliary connection plan  
 Operating manual  
 General arrangement drawing  
 Sectional drawing of pump  
 Parts list pump

**Material certificates: Casing cover (161)**

Certificate	Inspection cert. 3.1 to EN 10204
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**Material certificates: Impeller (230)**

Certificate	Inspection cert. 3.1 to EN 10204
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**Material certificates: Shaft (210)**

Certificate	Inspection cert. 3.1 to EN 10204
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**Material certificates: Casing wear ring (502)**

Certificate	Test report 3.1 to EN 10204
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**Material certificates: Impeller wear ring (503)**

Certificate	Test report 3.1 to EN 10204
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**Tests acc. to QCP-Plan (WBP)**

QCP No.

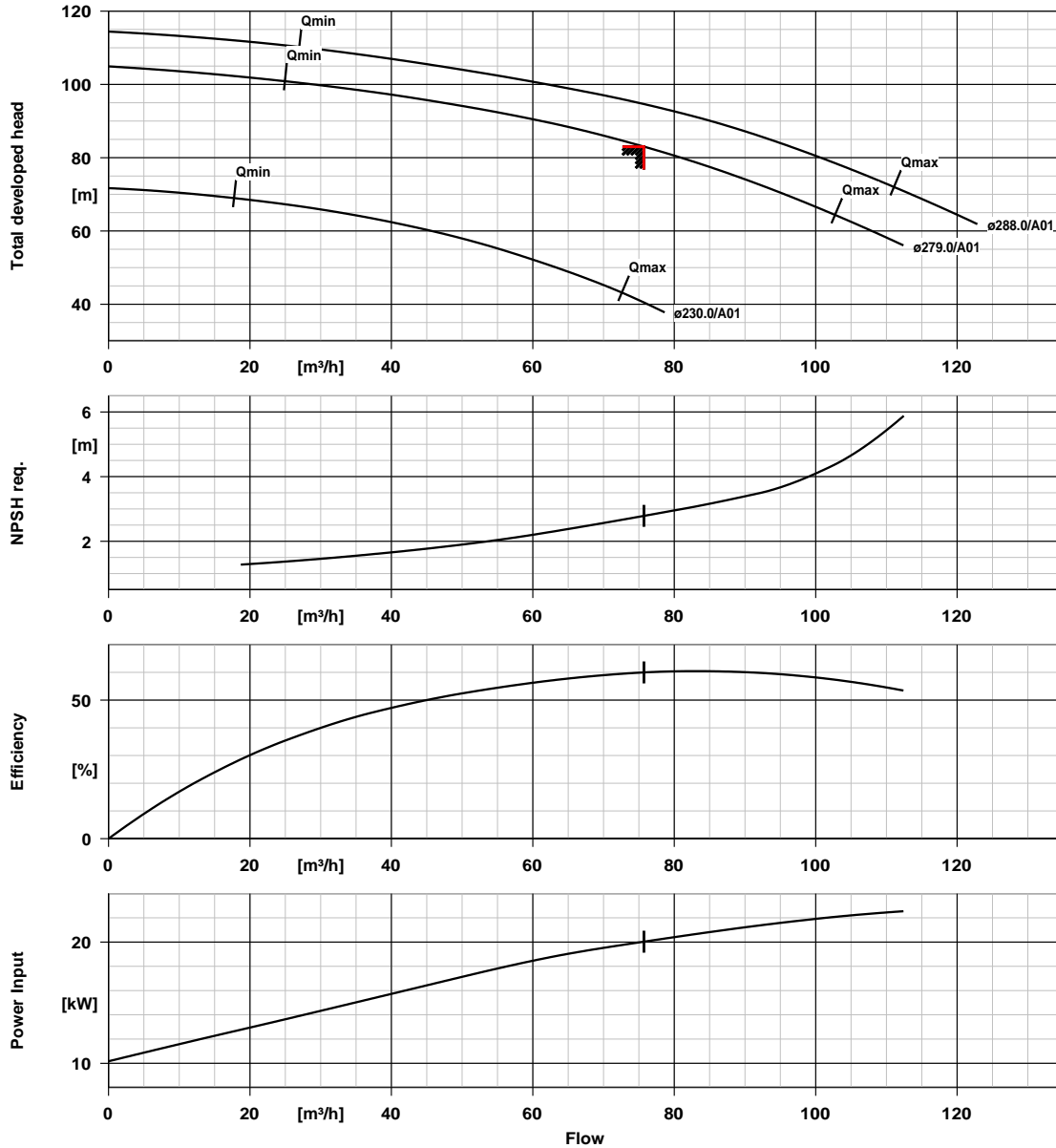
QCP (quality control plan)	
Inspection reports/ certificates	
Performance curve	
Material certificates	
Languages	Spanish, English
Procedure for unsupported languages	Supply the document in English instead

**Coating**

KSB coating code	S6 to KSB AN 1865-2	Final coating	Polyurethane aliphatic acrilique enamel
Surface preparation	Blasting, surface treatment quality SA 2 1/2	Color	May green (RAL 6017)
Primer	Zinc inorganic ethyl silicate	Total film thickness approx.	295 µm
Intermediate coating	Epoxi polyamide with micaceous iron		

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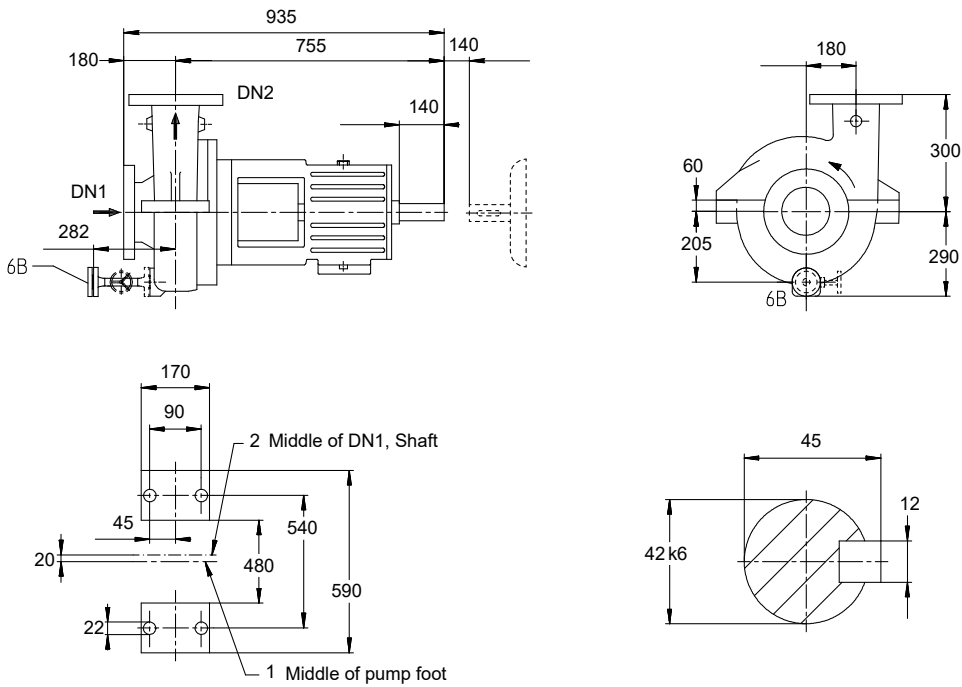


**Curve data**

Speed of rotation	2969 rpm	Power absorbed	20.04 kW
Fluid density	702 $kg/m^3$	NPSH required	2.79 m
Viscosity	0.39 $mm^2/s$	Curve number	1316.452.080-280B
Flow rate	75.71 $m^3/h$	Effective impeller diameter	279.0 mm
Requested flow rate	75.70 $m^3/h$	Acceptance standard	tolerances to API 610 12th edition
Total developed head	83.03 m	Min. allow. flow for continuous stable operation	24.94 $m^3/h$
Requested developed head	83.00 m	Min. thermal flow rate	8.31 $m^3/h$
Efficiency	60.0 %		

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Drawing is not to scale

Dimensions in mm

**Motor**

Not in scope of supply	
Motor size	200L
Motor power	30.00 kW
Number of poles	2
Speed of rotation	2969 rpm

**Connections**

Surface type	Raised face (RF)
Suction flange according to(DN1)	ASME B 16.5 / NPS 4 / CL 300 / RF
Discharge flange according to(DN2)	ASME B 16.5 / NPS 3 / CL 300 / RF

Flanged openings are provided with metal closures at least 5 mm thick, with elastomer gaskets and at least four full-diameter bolts.

**Weight net**

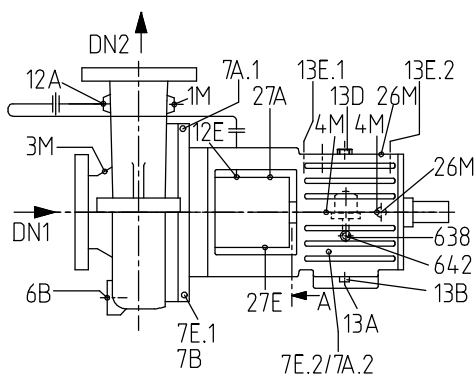
Pump	347 kg
Total	347 kg

**Connect pipes without stress or strain!**

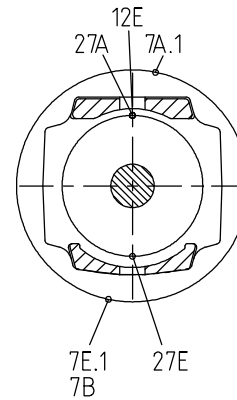
**For auxiliary connections see separate drawing.**

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API 11+52



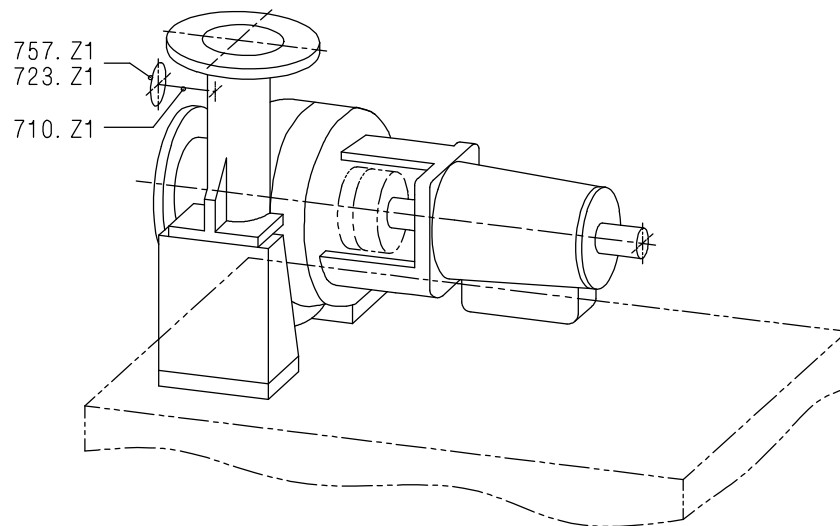
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**Connections**

10B Barrier liquid drain		Not executed
27E/27A Sealing liquid in/out Tandem	/ CL 600	Not executed
12E/12A Circulation in/out	NPS 1/2 / CL 600	12A : flange, 12E : not executed
7E/7A Cooling liquid in/out		Not executed
7B Cooling liquid drain casing cover	1/2 NPT	Not executed
6B Pumped liquid drain	NPS 1 / CL 300	Pipe connection with flange, Closed with blind flange
1M Pressure gauge connection	1/2 NPT	Not executed
3M Pressure gauge connection	1/2 NPT	Not executed
13B Oil drain	1/4 NPT	Drilled and plugged.
13A Oil Mist Outlet	1/4 NPT	Drilled and plugged.
13E1/E2 Oil Mist Inlet	1/4 NPT	Drilled and plugged.
13D Refill / venting	1/2 NPT	Closed with venting plug
638 Constant level oiler	1/4 NPT	Supplied unassembled with main equipment, to be installed by customer in acc. with operating instructions
642 Monitoring with oil level sight glass	G 3/4	Oil sight glass
4M Temperature measurement connection	G 1/2	Not executed
26M Shock pulse measurement connection	Ø30 M8	Drilled

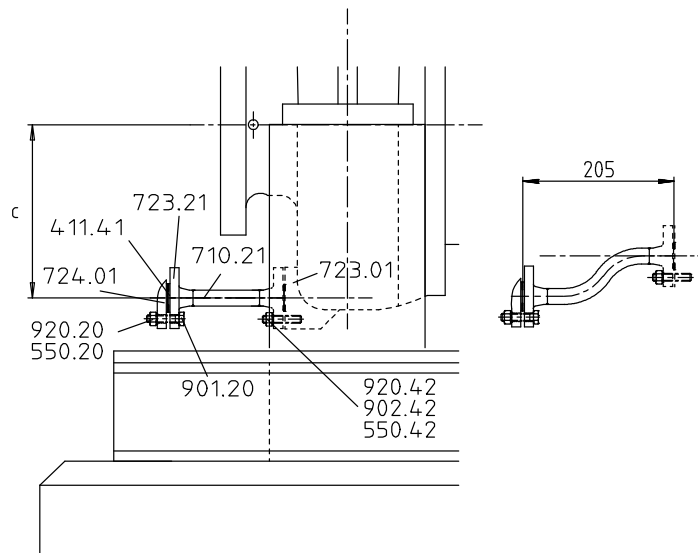
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**API Plan 11 : Pipe with flange for further connection of single mechanical seal**



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**Casing drain line without gate valve**





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**Detail 26M Flat surface for shock impulse measurement**

