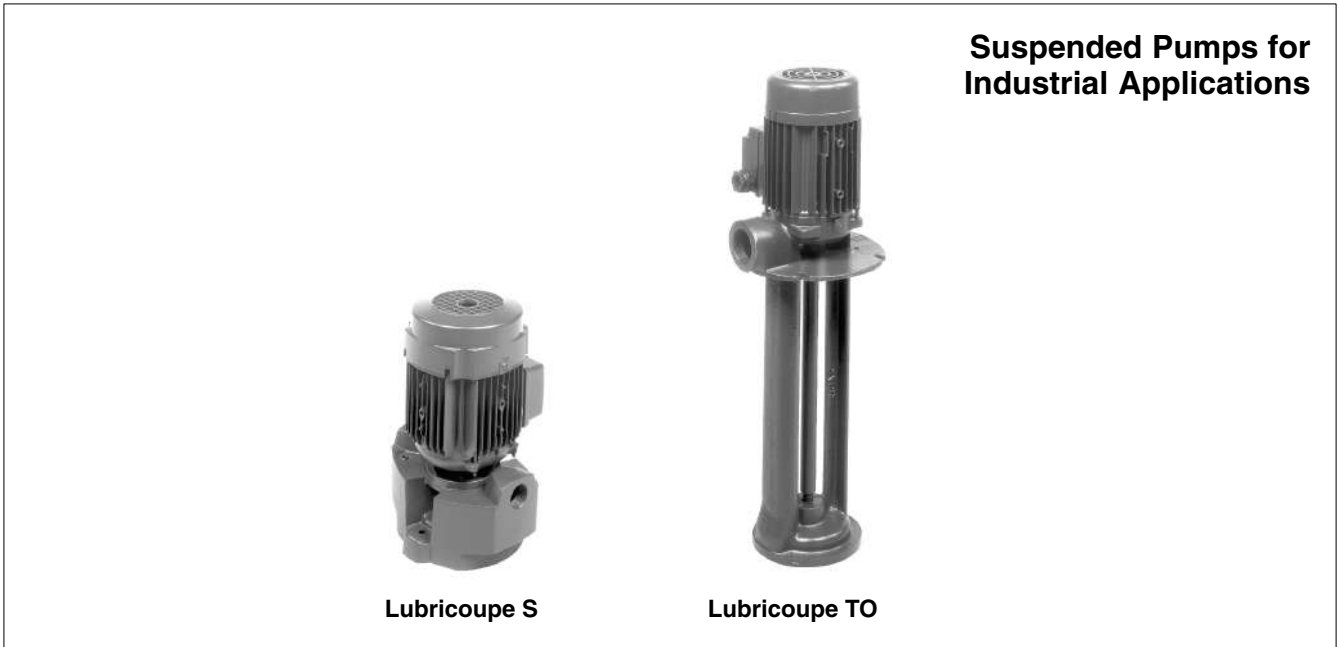


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	Самара (846)206-03-16	

Единый адрес: kbs@nt-rt.ru **Веб-сайт:** www.ksb.nt-rt.ru

Насосы мокрой установки KSB. Техническое описание



Fields of Application

Lubricoupe units are used to pump oil, cooling lubricants, solvents, degreasing agents, wash water in spray-paint and cooling systems, machine tools and welding machines.

Operating Data

	Lubricoupe S	Lubricoupe TO
Q up to	2,2 m ³ /h (36 l/min)	30 m ³ /h (500 l/min)
H up to	50 m	23
H _s up to	8 m	-
t up to	+60 °C	+60 °C

Design/Variants

Lubricoupe S: vertical, self-priming, single-stage centrifugal pump with star impeller.

The pump and the surface-cooled, three-phase squirrel cage motor, make KSB, 220-255V / 380-440V, design IM V1, 50/60 Hz, type of protection IP 44, have a common shaft and are flanged to form a close-coupled unit.

Lubricoupe T: vertical, single-stage centrifugal pump with open impeller.

The pump and the surface-cooled, three-phase squirrel cage motor, make KSB, 220-240/380-420 V up to 2.2 kW.

Bearings

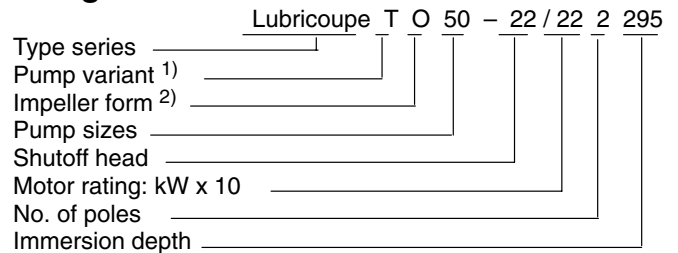
Lubricoupe S: grease-lubricated deep-groove ball bearings sealed for life.

Lubricoupe TO: grease-lubricated deep-groove ball bearings sealed for life.

Shaft Seal

	Mechanical seal
Lubricoupe S 20-.../S10-... :	BV ₂ PGG
S 25-... :	BF PGG
Lubricoupe T:	none

Designation



- 1) T = submersible pump, S = self-priming pump
2) O = open impeller.

Materials

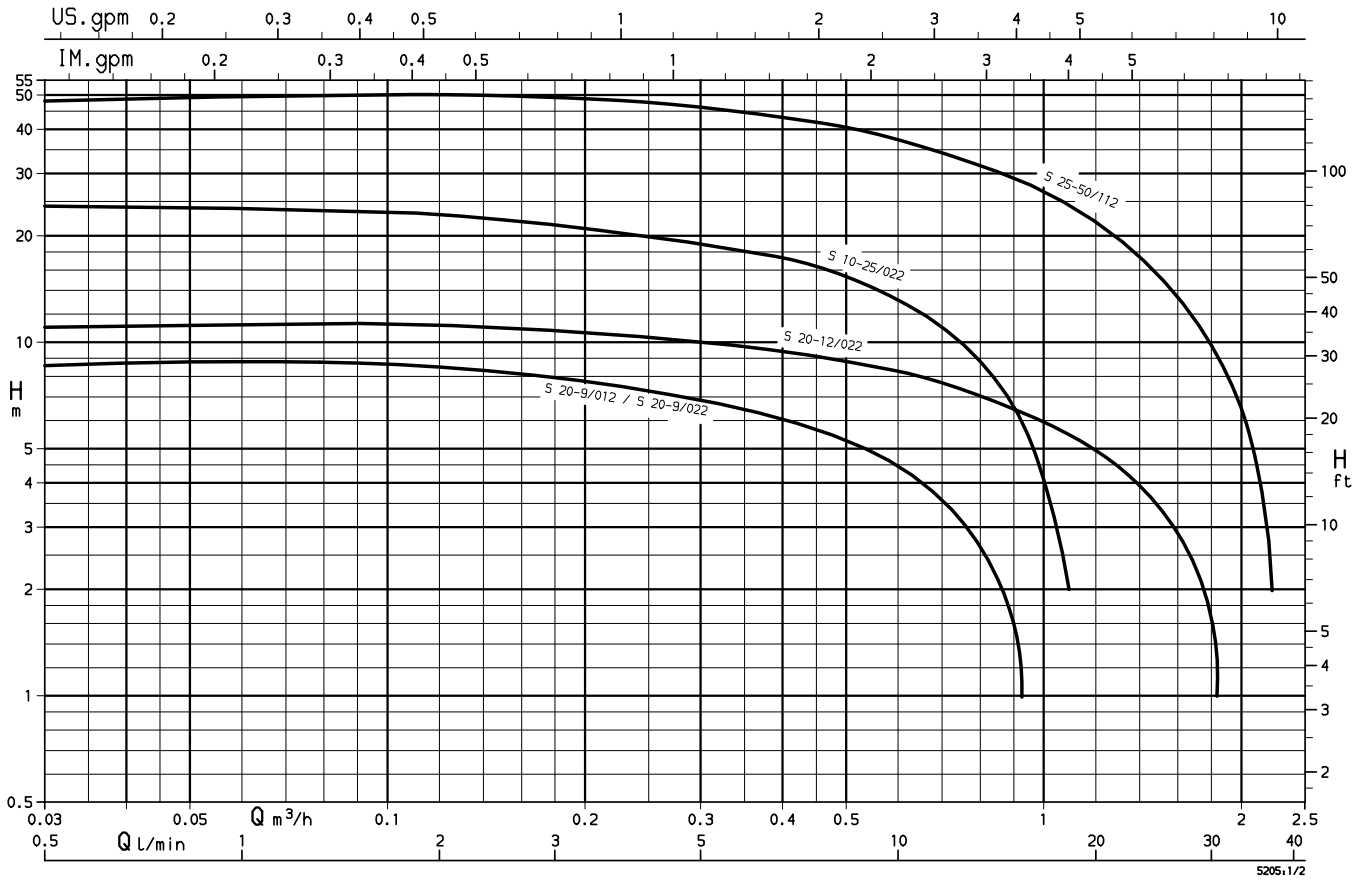
	Self-priming Pump Lubricoupe S	Submersible Pump Lubricoupe TO
Pump casing	Cast iron GG-20	Cast iron GG-20
Volute casing	-	-
Casing cover	Cast iron GG-20	Steel
Impeller	Brass CuZn40Pb2	Nylon ¹⁾
Shaft	Steel	Steel
Suction strainer	-	Steel
Motor stool	-	-

- 1) TO 32-11, TO 32-15 = Cast iron GG-20; TO 50-22 = bronze
2) pump size 40 only, pump size 50 = Cast iron GG-25

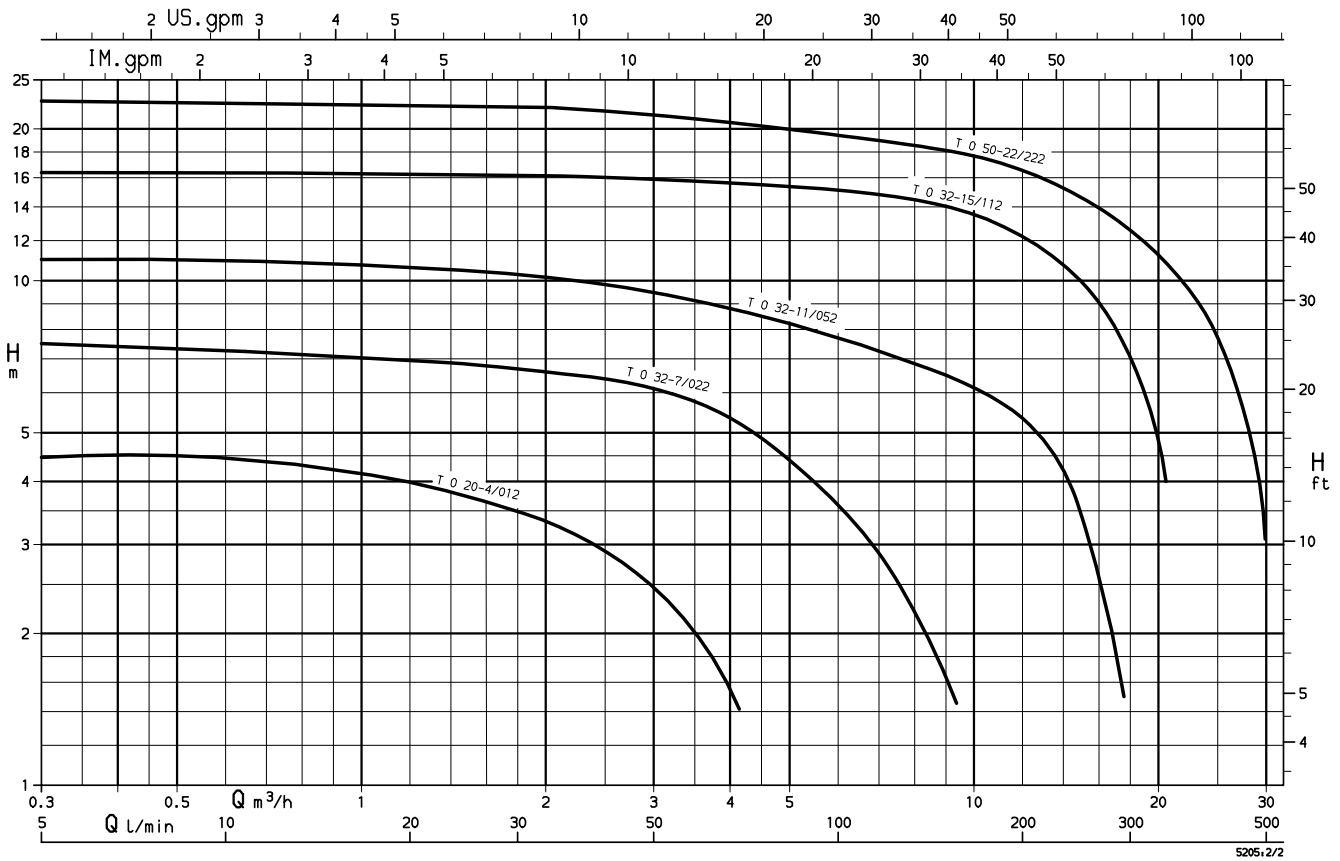
Selection Charts

n = 2900 1/min

Lubricoupe S

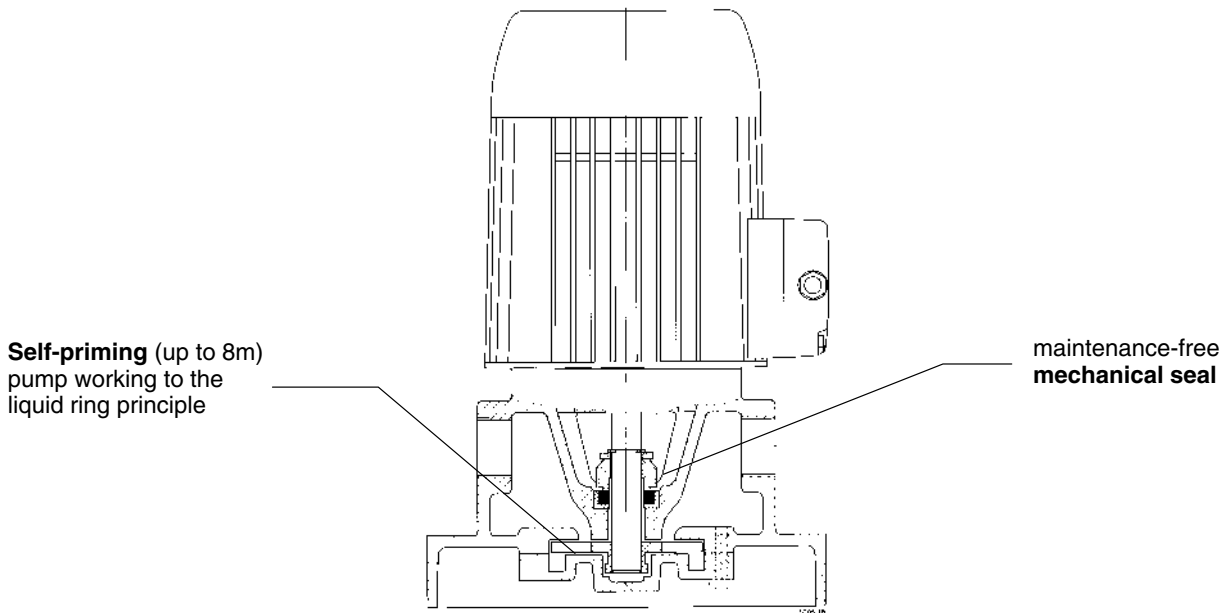


Lubricoupe TO

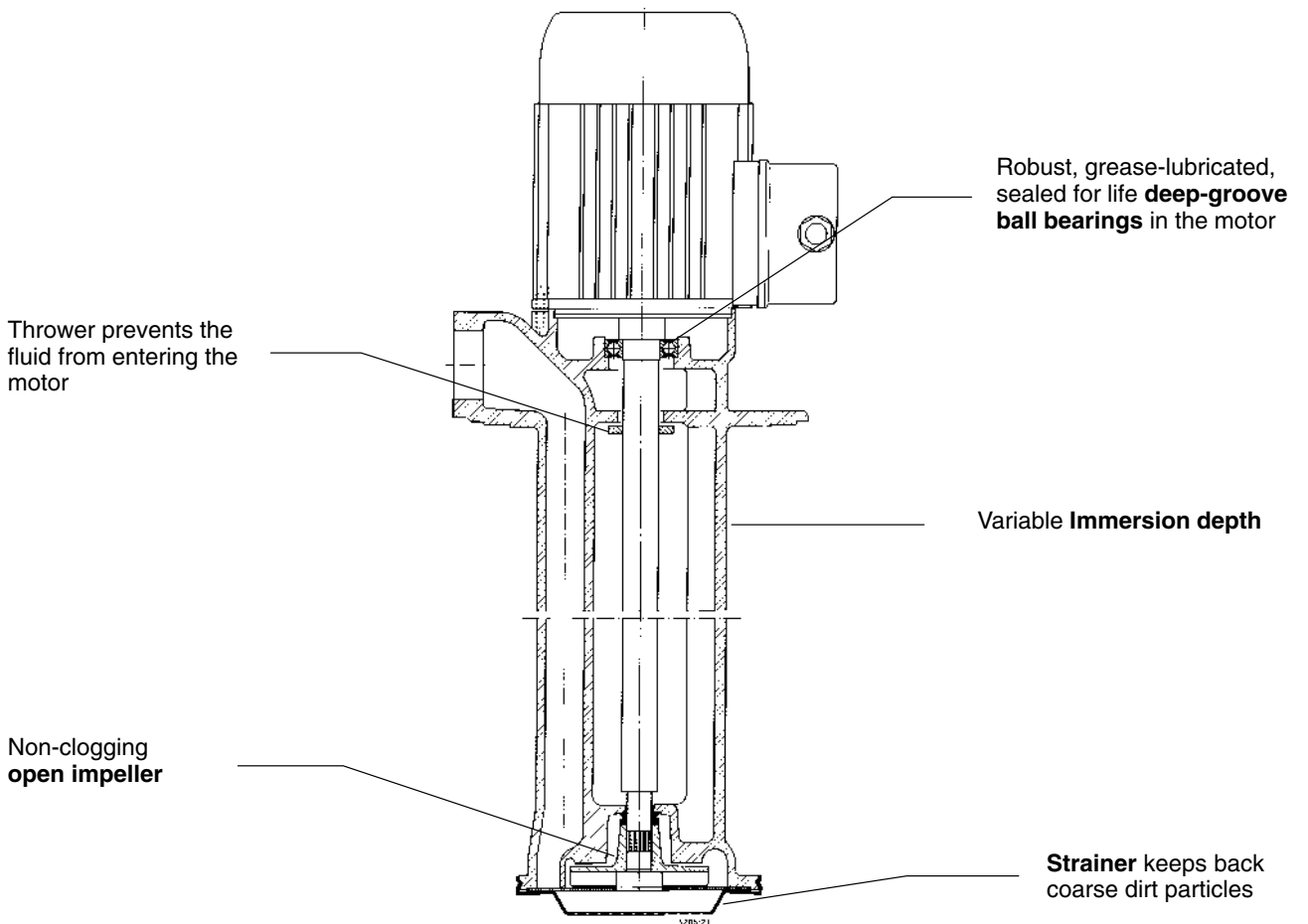


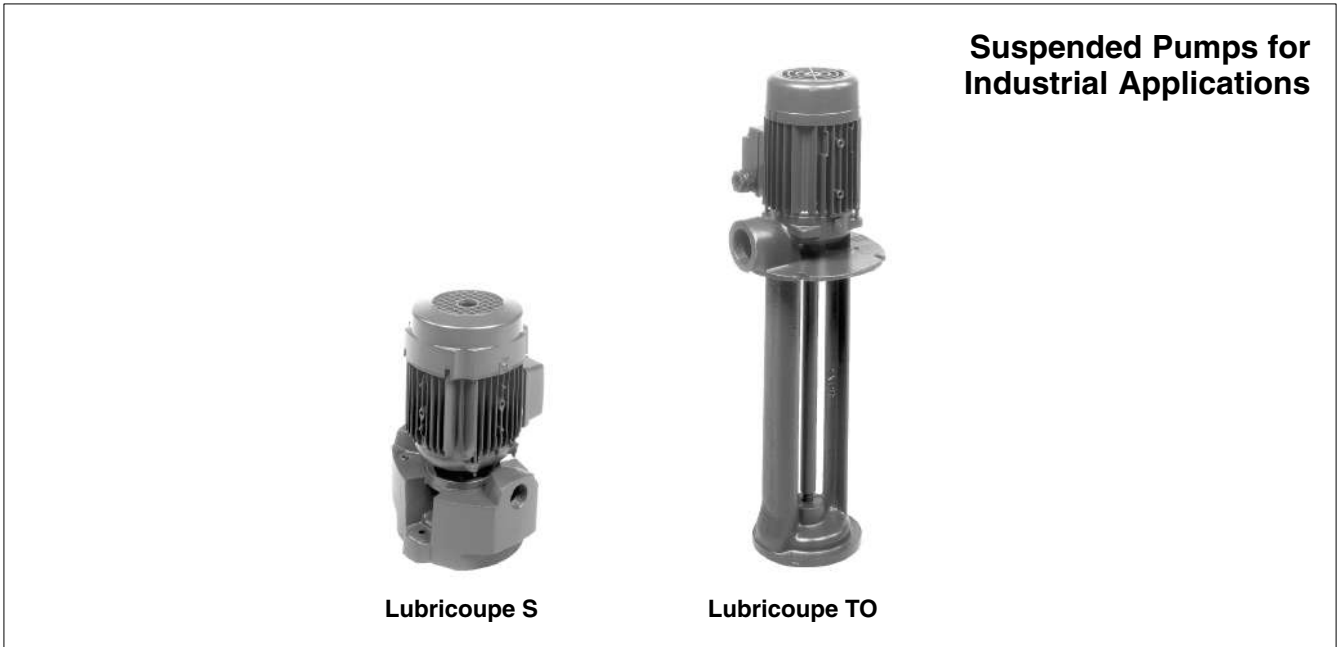
Benefits at a Glance

Lubricoupe S



Lubricoupe TO





Fields of Application

Lubricoupe units are used to pump oil, cooling lubricants, solvents, degreasing agents, wash water in spray-paint and cooling systems, machine tools and welding machines.

Operating Data

	Lubricoupe S	Lubricoupe TO
Q up to	2,2 m ³ /h (36 l/min)	30 m ³ /h (500 l/min)
H up to	50 m	23
H _s up to	8 m	-
t up to	+60 °C	+60 °C

Design/Variants

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The pump and the surface-cooled, three-phase squirrel cage motor, make KSB, 220-255V / 380-440V, design IM V1, 50/60 Hz, type of protection IP 44, have a common shaft and are flanged to form a close-coupled unit.

Lubricoupe T: vertical, single-stage centrifugal pump with open impeller.

The pump and the surface-cooled, three-phase squirrel cage motor, make KSB, 220-240/380-420 V up to 2.2 kW.

Bearings

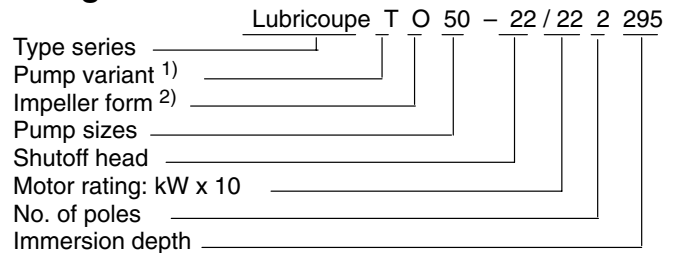
Lubricoupe S: grease-lubricated deep-groove ball bearings sealed for life.

Lubricoupe TO: grease-lubricated deep-groove ball bearings sealed for life.

Shaft Seal

	Mechanical seal
Lubricoupe S 20-.../S10-... :	BV ₂ PGG
S 25-... :	BF PGG
Lubricoupe T:	none

Designation



- 1) T = submersible pump, S = self-priming pump
2) O = open impeller.

Materials

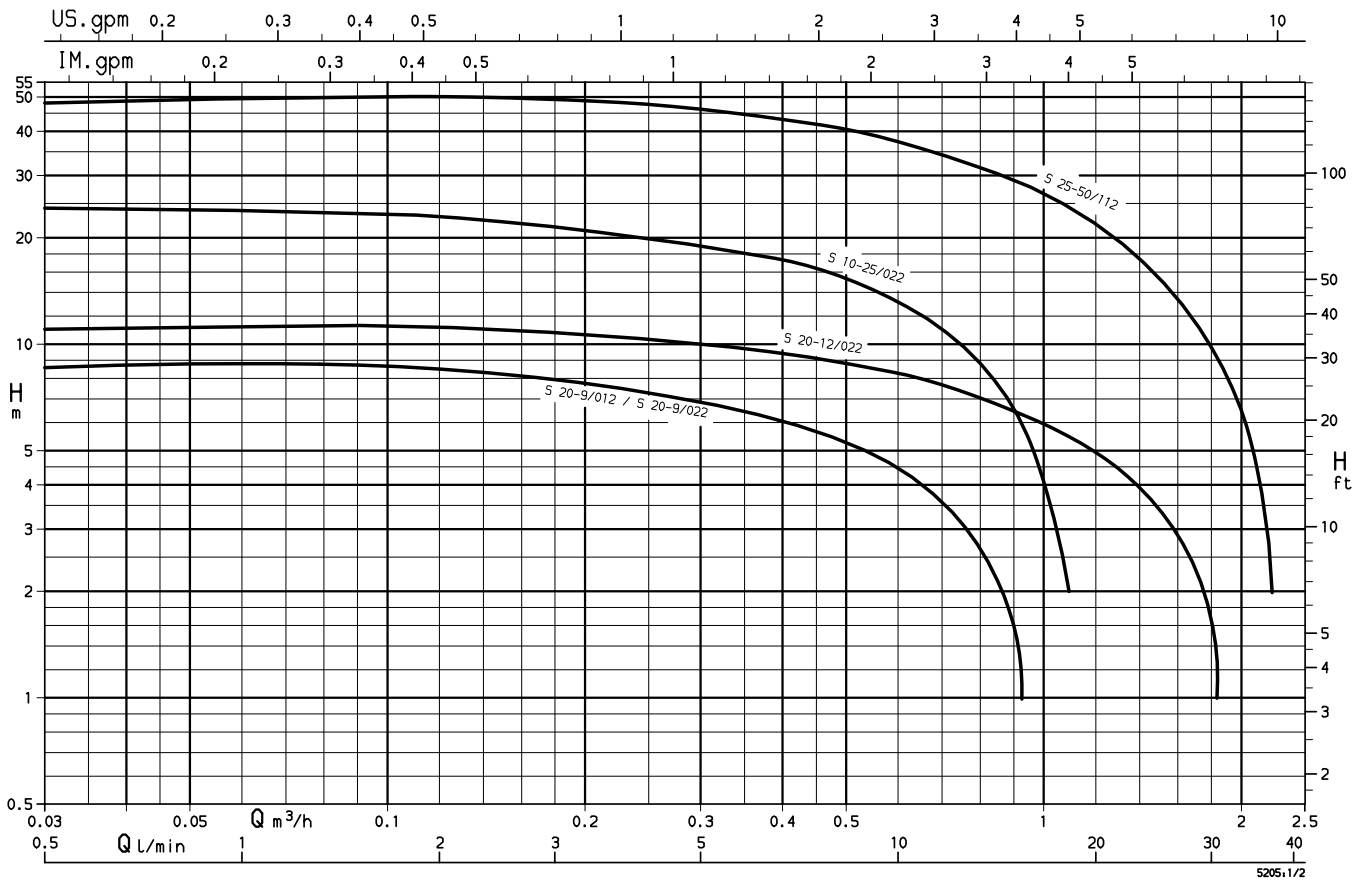
	Self-priming Pump Lubricoupe S	Submersible Pump Lubricoupe TO
Pump casing	Cast iron GG-20	Cast iron GG-20
Volute casing	-	-
Casing cover	Cast iron GG-20	Steel
Impeller	Brass CuZn40Pb2	Nylon ¹⁾
Shaft	Steel	Steel
Suction strainer	-	Steel
Motor stool	-	-

- 1) TO 32-11, TO 32-15 = Cast iron GG-20; TO 50-22 = bronze
2) pump size 40 only, pump size 50 = Cast iron GG-25

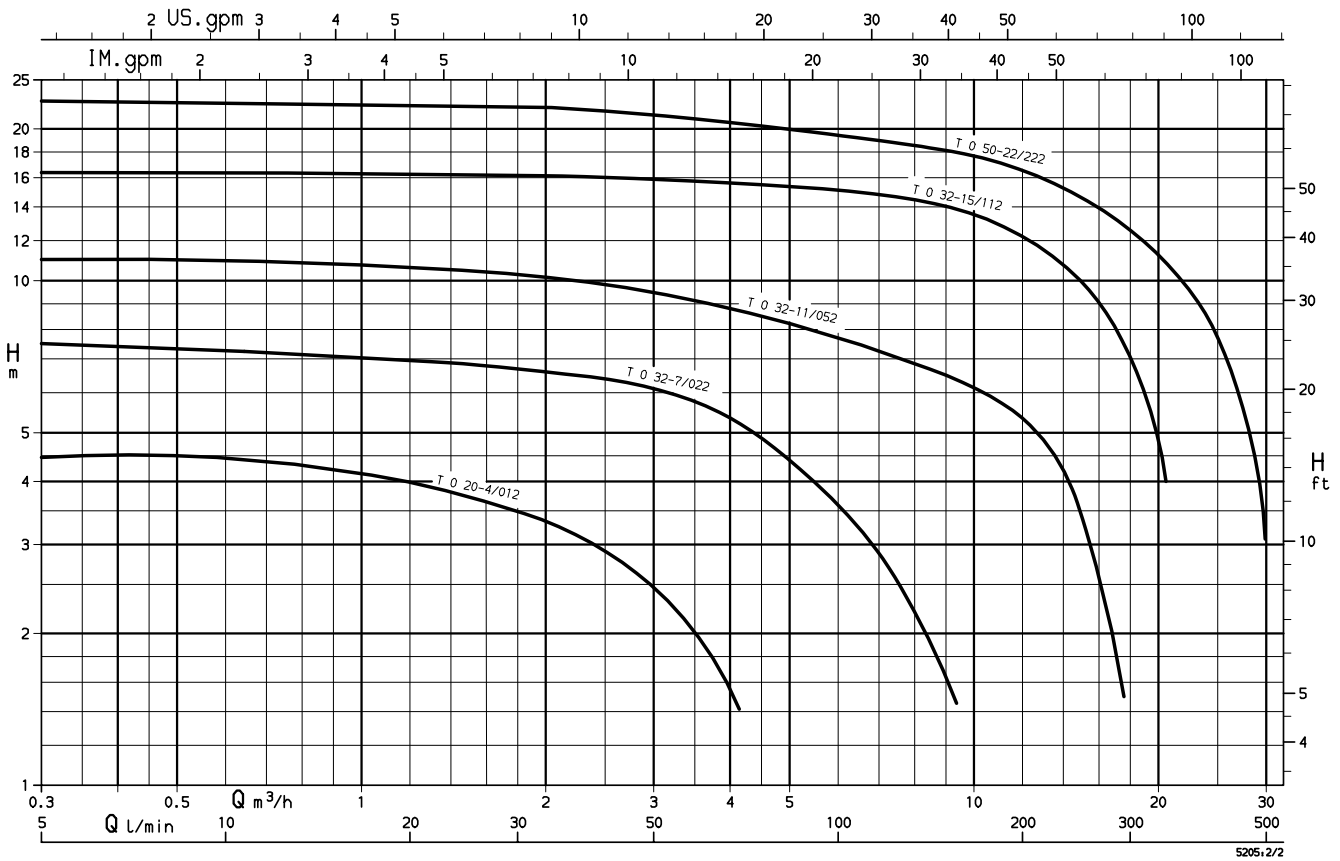
Selection Charts

n = 2900 1/min

Lubricoupe S

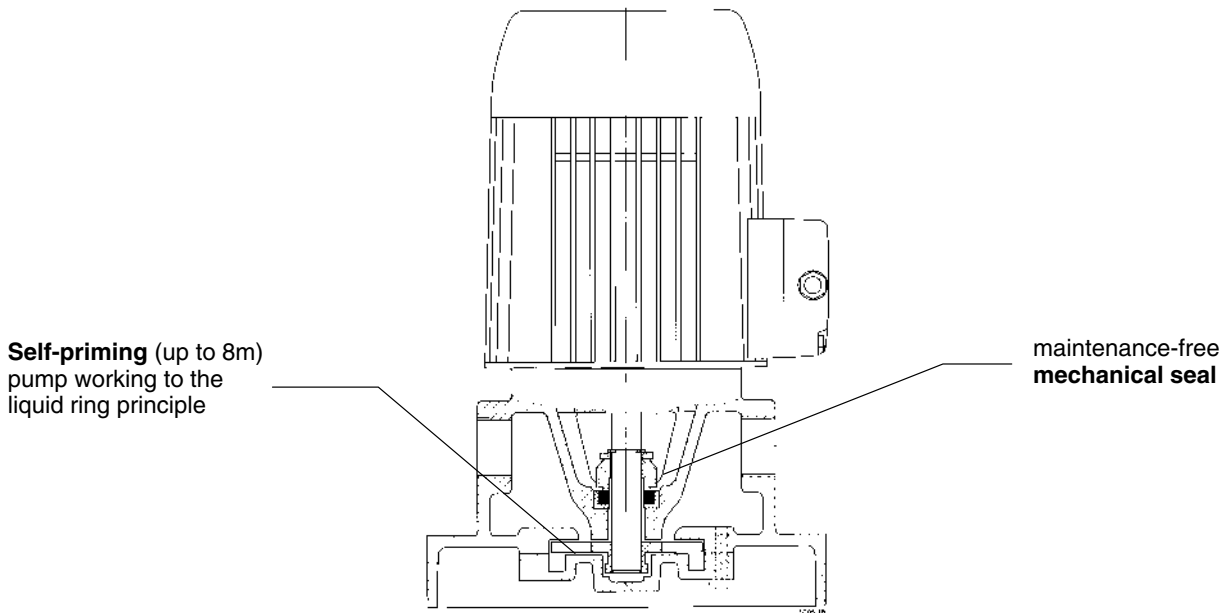


Lubricoupe TO

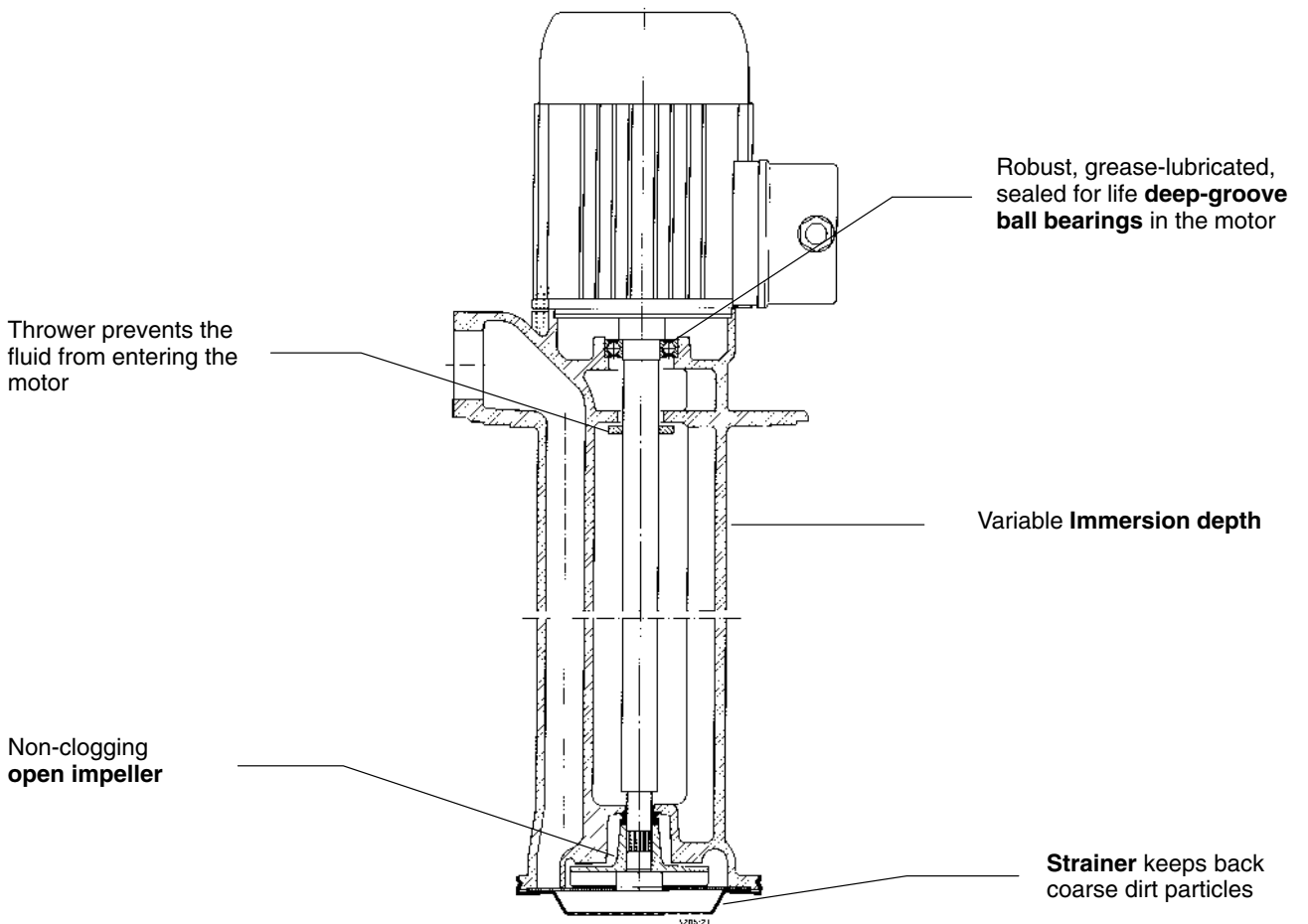


Benefits at a Glance

Lubricoupe S



Lubricoupe TO





Process pumps to API 610, 11th edition and ISO 13709

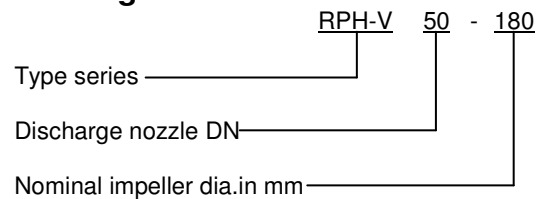
1. Application

RPH-V pumps are mainly used in refineries as well as in chemical and petrochemical plants.

2. Design

Vertical, radially split volute casing pumps to API 610 11th edition, and ISO 13709 (heavy duty), with radial impeller, single-flow, single-stage.

3. Designation

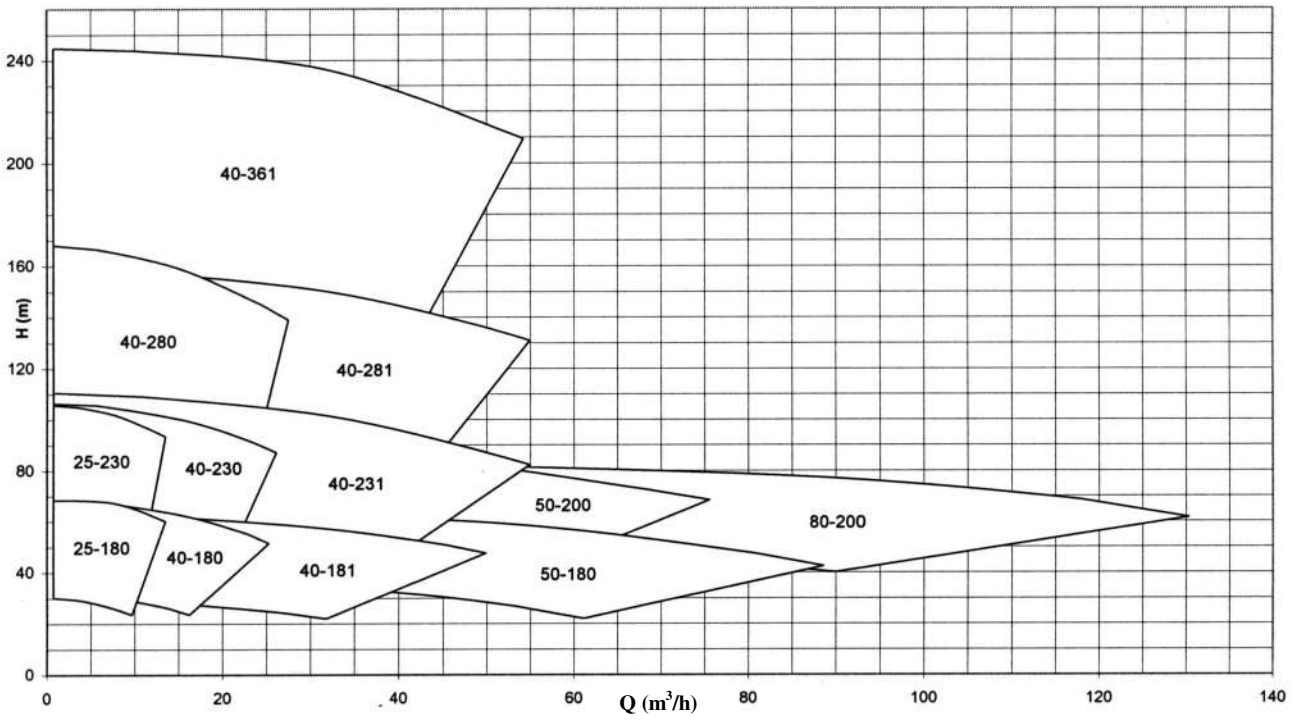


4. Operating Data

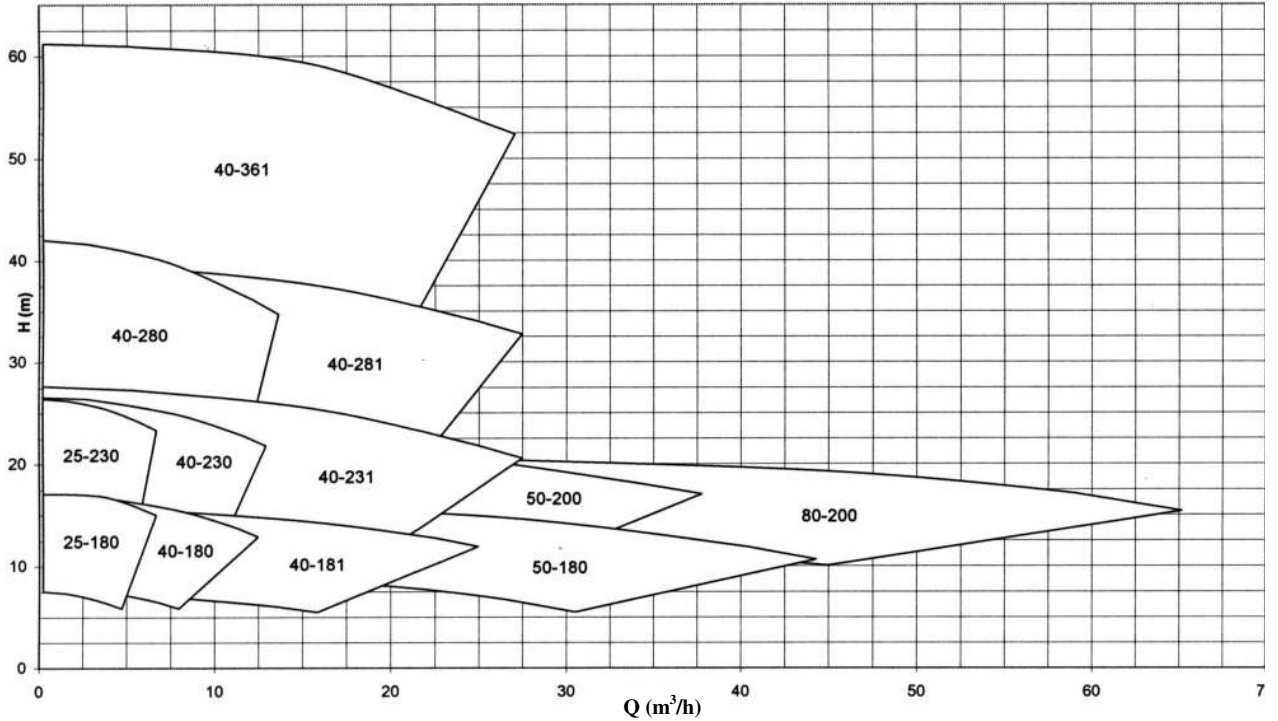
Pump sizes	DN	40 to 150
Capacities	Q	up to 80 m ³ /h
Heads	H	up to 240 m
Operating pressures	p	up to 35 bar for piping in material ASTM A106
Operating temperatures	t	-30 to +230°C
Standard installation depth	ET	from 630 to 3985 mm (rectangular soleplate); from 590 to 3935 mm (circular soleplate)

Other operating data on request.

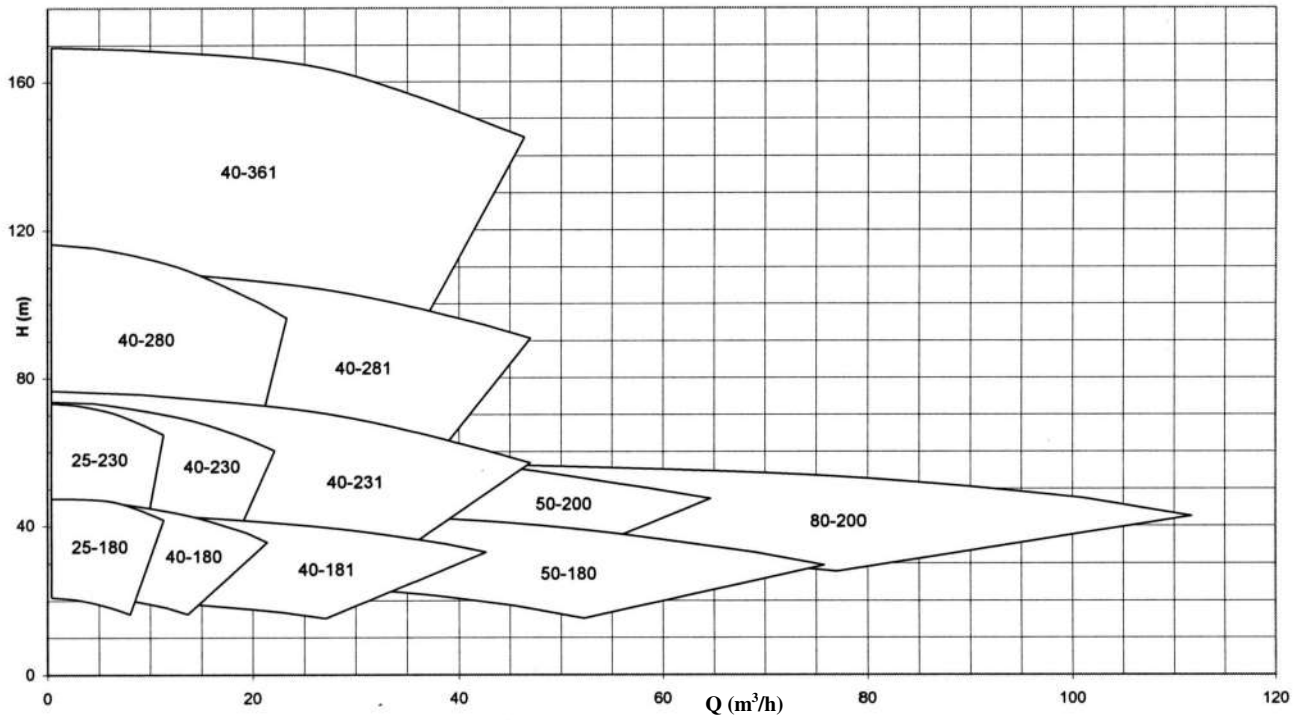
5.1 Selection chart 3.500 1/min



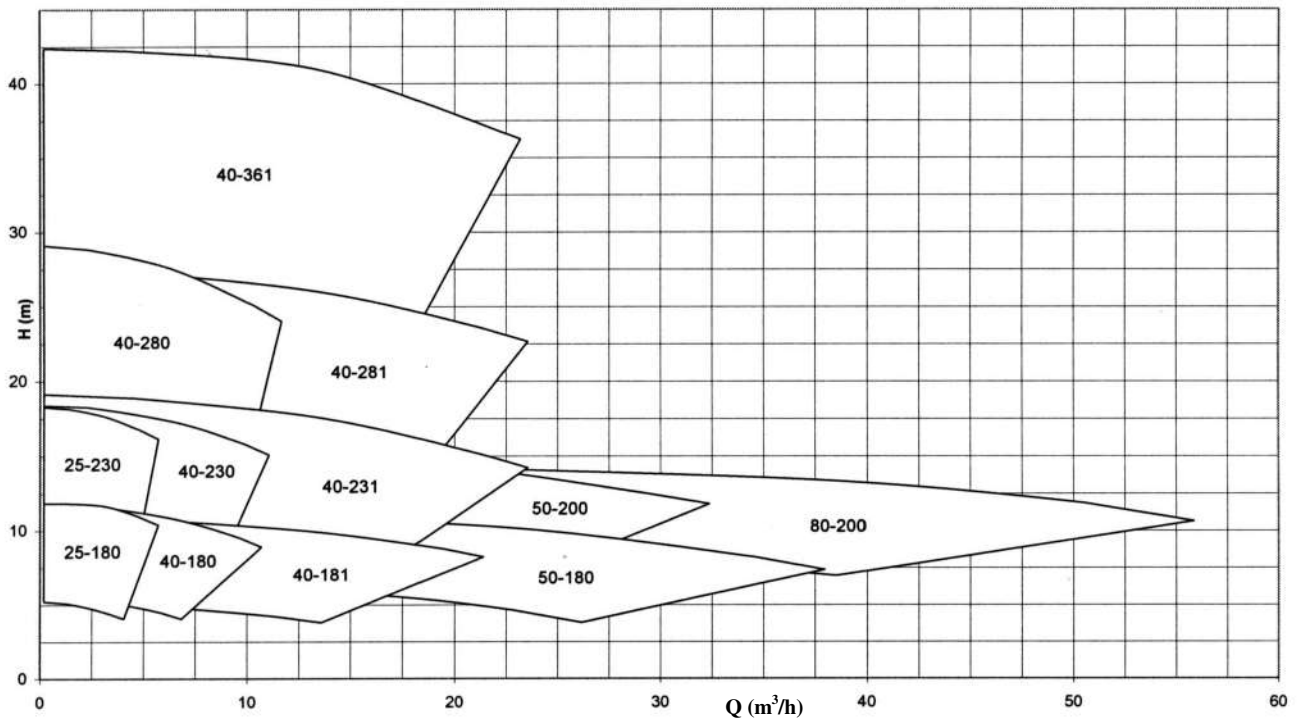
5.2 Selection chart 1.750 1/min



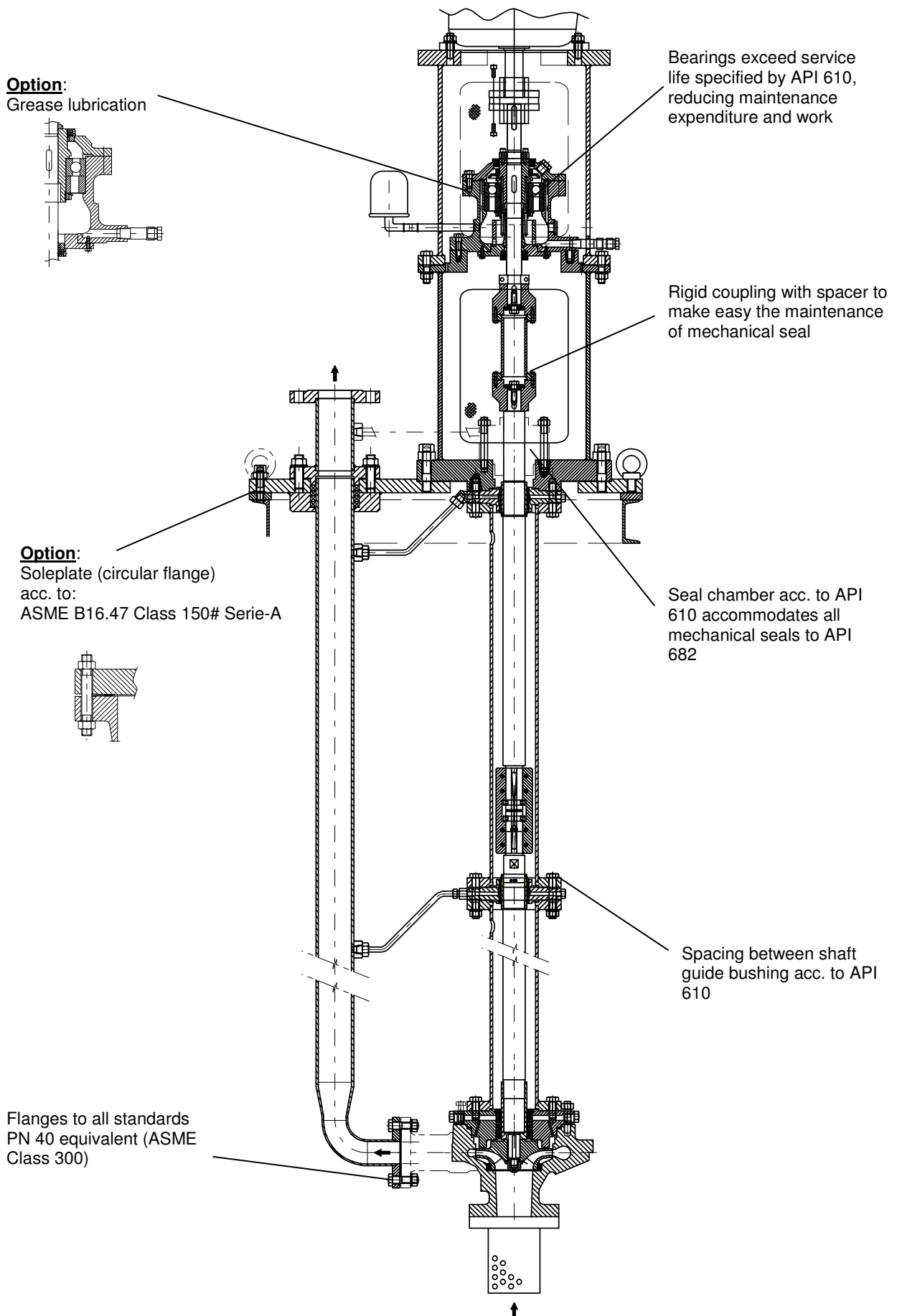
5.3 Selection chart 2.900 1/min



5.4 Selection chart 1.450 1/min



6. Product features / Benefits



7. Technical data

Pump Size		Unity	25-180	25-230	40-180	40-230	50-200	80-200	40-181	40-231	40-280	40-281	40-361	50-180
Volute type		--	Simple											
Impeller	- Outlet width	mm	6	6	6	6,2	10,5	14	7,8	7,7	7,5	7,7	7,9	10,9
	- Inlet diameter		48	48	58	57	88	105	75	75	61	71	69	88
	- maximum diam.		179	224	180	224	205	207	180	230	278	278	343	180
	- minimum diam.		120	180	130	180	164	166	130	180	220	230	280	140
Sealing chamber size (Acc.to API 682 Table 1)		--	4											
Bearing type / Lubrication			6313C3 / oil											
Shaft diameter	- in the sealing chamber (D)	mm	50											
	- in the bearing		65											
	- in the coupling		32											
	- in the impeller		24						27					
Shaft deflection			As per API 610 11 th edition											
Pressure limits	Max.operating pressure	bar	35 ²⁾											
	Max.test pressure	bar	1,5 times the operating pressure or as per API 610 11 th edition											
Flanges		--	ASME B16.5 Class 300 RF											
Temp.limit	Max.fluid temp.	°C	230 ³⁾											
Driver	Maximum Value P/n ¹⁾	kW / rpm	0,019						0,032					
Motor	n = 1450 rpm	kW	28						47					
	n = 1750 rpm		33						56					
	n = 2900 rpm		55						93					
	n = 3500 rpm		67						112					

¹⁾ Values indicated refer to shaft in material A434 4140CL.BB and impeller in A216WCB & temperature < 100°C.

²⁾ Pressure limit refers to piping in material A106.

³⁾ Temperature limit refers to bearing bushes in material Peek.

For other condition, please consult KSB.

8. Materials table

(reference for main parts)

Part No.	Description	Variant S5	Variant S6	Variant A8
102	Volute casing	A 216 Grade WCB	A 216 Grade WCB	A 351 Grade CF8M
161	Casing cover	A 216 Grade WCB / A 516 Grade 65	A 216 Grade WCB / A 516 Grade 65	A 351 Grade CF8M
210	Shaft	A 434/4140CL.BB	A 434/4140CL.BB	A276 Type 316
230	Impeller	A 216 Grade WCB	A 743 Grade CA6NM	A 743 Grade CF8M
350	Bearing housing	A 216 Grade WCB	A 216 Grade WCB	A 216 Grade WCB
411.10	Joint ring	Spiral SS316 -Graphite	Spiral SS316 -Graphite	Spiral SS316 -Graphite
502 / 503	Wear ring	AISI 420 Hard	AISI 420 Hard	AISI 316 Hard Faced
711	Rising	A106 Grade B	A106 Grade B	AISI 316
902.01 / 920.01	Casing bolts / hex.nut	A193 Grade B7 / A194 Grade 2H	A193 Grade B7 / A194 Grade 2H	A193 Grade B7 / A194 Grade 2H

Other materials acc. to API 610 are available on request.

9. Design details

9.1 Pump casing

Radially split, consisting of volute casing and casing cover. Volute casing with casing wear rings. Casing cover with casing wear rings, depending on axial thrust balancing.

9.2 Impeller

Closed radial impeller, impeller wear ring on the suction side. Discharge side wear ring only on hydraulically balanced impellers.

9.3 Balancing

Balancing of axial thrust by sealing gap and balancing holes (if required).

9.4 Minimum flow

Unless specified otherwise in the individual characteristic curves, the following applies:

$Q_{min} = 0,1 \cdot Q_{opt.}$ for short operation

$Q_{min} = 0,3 \cdot Q_{opt.}$ for continuous operation

9.5 Bearing lubrication

Bearing bracket – oil fill in 0,5 l.

Lubricating oil types C 46 DIN 51 517 or SAE 20 W/20 HD shall be used.

On the standard pump design, the bearing bracket is uncooled.

NPT threads are provided for constant-level oiler, oil drain and vent plug.

The bearings are designed for at least 25,000 operating hours as per API 610/11th edition.

During pump standstill the oil level can be checked against the center of the oil level sight glass.

9.6 Shaft

Depending on installation following shafts are necessary: pump shaft, intermediate shaft and drive shaft. The shafts are coupled by split coupling.

9.7 Shaft sealing

The pump is fitted with mechanical seals or gland packing (special variant). The mechanical seal chamber is designed in acc. to API 610, 11th edition. Mechanical seals are provided in cartridge design only (API 682)! Sealing plans with an external source (plans 32,52,53,54) to lubricate mechanical seal faces in order to avoid dry run during start-up.

For other sealing plans and gland packing applications consult KSB.

9.8 Direction of rotation

Clockwise, viewed from the drive end.

9.9 Bearing guides

Sliding type in Peek material with shaft protecting sleeve.

9.10 Bearing guide lubrication

The following possibilities are available:

a) Pumped liquid:

When the product have lubricant characteristics, with a maximum of 20 p.p.m. of impurity and particle with 10 µm. Each bearing receives injection through a piping connected to the rising pipe.

b) Clean water of external source (optional):

Water injection is done in all bearings through an external connection located above the mounting plate.

9.11 Soleplate sealing

Flexible graphite packing rings with wire reinforcement to control fugitive emissions - Teadit Style 2000IC:

- Temperature: -240 ~ 450 °C
- Pressure: up to 400 bar
- pH: 0 ~14

9.12 Surface Coating

Type A1 – Standard surface coating for material variants S5 e S6 up to 90°C.

Preparatory treatment	Grease-free / steel shot blasting ISO 8501-1 SA 2 ½.	
Primer	1 coat - 100 µm thick (dry) – Zinc phosphate epoxy.	
Finish coat	Internal surfaces:	External surfaces: Acrylic aliphatic polyurethane RAL 5002 blue
	Without	1 coat - 70 µm thick (dry).

Type A2 – Standard surface coating for material variants S5 e S6 from 90°C up to 230°C.

Preparatory treatment	Grease-free / steel shot blasting ISO 8501-1 SA 2 ½.	
Primer	1 coat - 50 µm thick (dry) - Zinc inorganic silicate.	
Finish coat	Internal surfaces:	External surfaces: Monocomponent modified silicate Aluminum 800
	Without	1 coat - 35 µm thick (dry).

Notes:

- Material combinations C6, A8 and D1 do not have coating.
- Special surface coating available on request.

10. Pump selection

RPH-V pumps use the same published curves as horizontal version RPH, however items 10.1 until 10.4 should be considered for the correct pump selection.

10.1 Pump head

The reference line to define the pump head and capacity is the pump discharge flange (DN2).

The performance curve does not consider pressure losses in the suction strainer, discharge curve, column bearings, rising piping and internal circulation for bearing lubrication.

The pump total head is the sum of following items:

- Installation head,
- loss in the straight discharge column.
- loss in the discharge curve (elbow) , and
- loss in the strainer.

10.2 Pressure losses

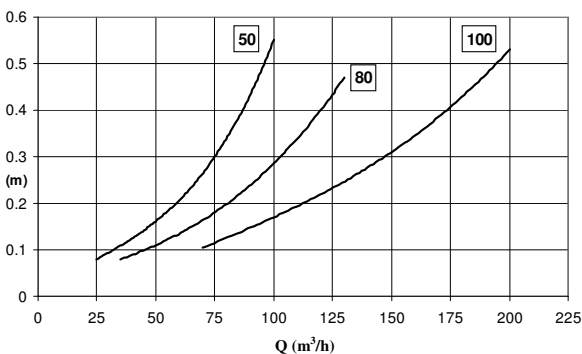
Piping losses – Head losses in straight pipes in 100 m of pipe (in m)

Nominal flow m ³ /h	Nominal diameter				
	40	50	80	100	150
1	0,22	0,08			
1,5	0,50	0,17			
2	0,80	0,28			
3	1,80	0,60	0,05		
4	3,00	1,05	0,10		
5	4,70	1,60	0,15	0,05	
6	6,60	2,20	0,20	0,07	
8	11,50	3,90	0,35	0,13	
10	17,00	5,70	0,50	0,20	
12,5	26,00	8,50	0,80	0,28	
15	37,00	12,50	1,10	0,40	0,05
17,5	47,00	16,00	1,40	0,50	0,06
20	63,00	21,50	2,00	0,70	0,09
25	95,00	33,00	3,00	1,10	0,13
30		45,00	4,20	1,50	0,20
35		61,00	5,70	2,00	0,24
40		78,00	7,00	2,50	0,30
45		100,00	9,00	3,10	0,40
50			11,00	3,80	0,50
60			16,00	5,50	0,70
70			21,00	7,20	0,90
80			26,50	9,20	1,20
90			34,00	12,00	1,40
100			40,00	14,00	1,80
120			58,00	20,00	2,50
140			80,00	27,00	3,30
160				35,00	4,25
180				43,00	5,30
200				50,00	6,50

Piping losses – Head losses at 90° elbow (in m)

Nominal flow m ³ /h	Nominal diameter at pump discharge nozzle			
	25	40	50	80
3	0,02			
4	0,04			
5	0,07	0,01		
6	0,10	0,02		
8	0,18	0,03	0,01	
10	0,28	0,04	0,02	
12,5	0,43	0,07	0,03	
15	0,62	0,10	0,04	
17,5	0,85	0,13	0,05	
20	1,11	0,17	0,07	0,01
25	1,73	0,26	0,11	0,02
30	2,50	0,38	0,16	0,02
35		0,52	0,21	0,03
40		0,68	0,28	0,04
45		0,86	0,35	0,05
50		1,06	0,43	0,07
60		1,52	0,62	0,10
70		2,08	0,85	0,13
80			1,11	0,17
90			1,41	0,21
100			1,73	0,26
120			2,50	0,38
140				0,52
160				0,68
180				0,86
200				1,06
250				1,65
300				2,38

Strainer losses (in m) – curves refer to suction nozzle nominal diameter DN1.



10.3 NPSH

The NPSH values indicated in the individual performance curves were measured on impellers without hydraulic balancing. They correspond to a 3 % drop of the pump head.

Generally a value of $NPSH_{available} - NPSH_{pump} \geq 0,5 \text{ m}$ is desirable (for hot water applications please contact KSB).

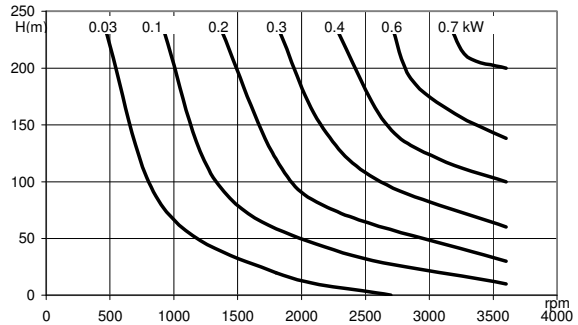
10.4 Efficiency

The efficiencies specified in the performance curves refer only to the hydraulic pump without losses. Axial thrust balancing of the impeller, fluid viscosity, a larger impeller clearance gap, the shaft seal type, drive shaft and thrust bearing losses reduce the pump's overall efficiency.

Efficiency was measured using a clearance gap to AN 1501, group 2 and an inlet pressure of 2 to 3 bar.

The efficiency is stated in the individual performance curves of horizontal version (RPH).

10.4.1 Power consumption per guide bearing



Note:

Power consumption of mechanical seal should also be considered.

10.5 Drive

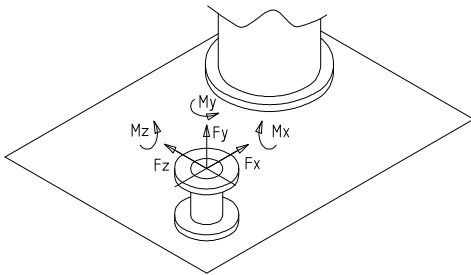
Direct or indirect by electric motor, engine or turbine, if an internal combustion engine has been specified, special care shall be taken when selecting the type of coupling to be used.

10.6 Motor selection

When determining the motor size, consideration shall be given to the efficiency determined and the power margins as per API 610.

Motor rating	Power margin
up to 22 kW	25 %
22 to 55 kW	15 %
above 55 kW	10 %

10.7 External nozzle forces and moments

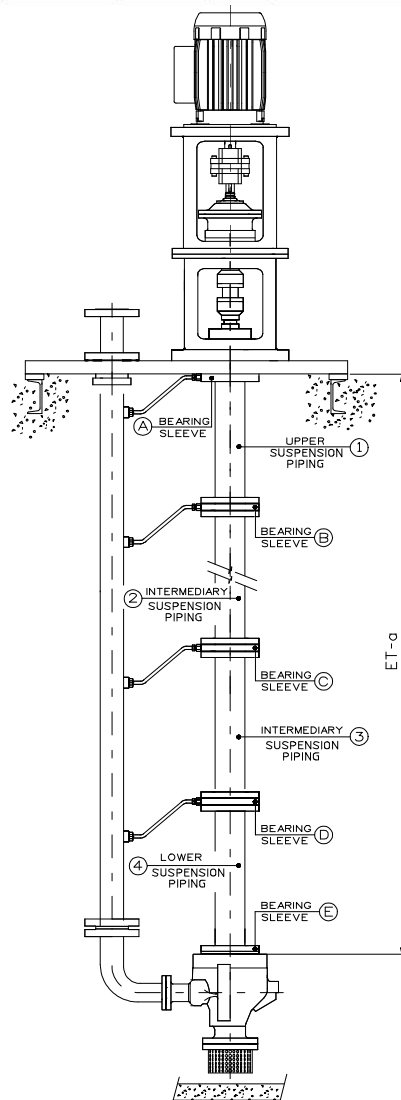


Pump sizes	Discharge nozzle							
	Forces (in N)				Moments (in Nm)			
	F_x	F_y	F_z	F_{res}	M_x	M_y	M_z	M_{res}
25-180	710	580	890	1280	460	230	350	620
25-230								
40-180	1070	890	1330	1930	950	470	720	1280
40-230								
40-280								
40-181	1070	890	1330	1930	950	470	720	1280
40-231								
40-281								
40-361								
50-180	1070	890	1330	1930	950	470	720	1280
50-200								
80-200	2490	2050	3110	4480	2300	1180	1760	3130

11. Installation depths

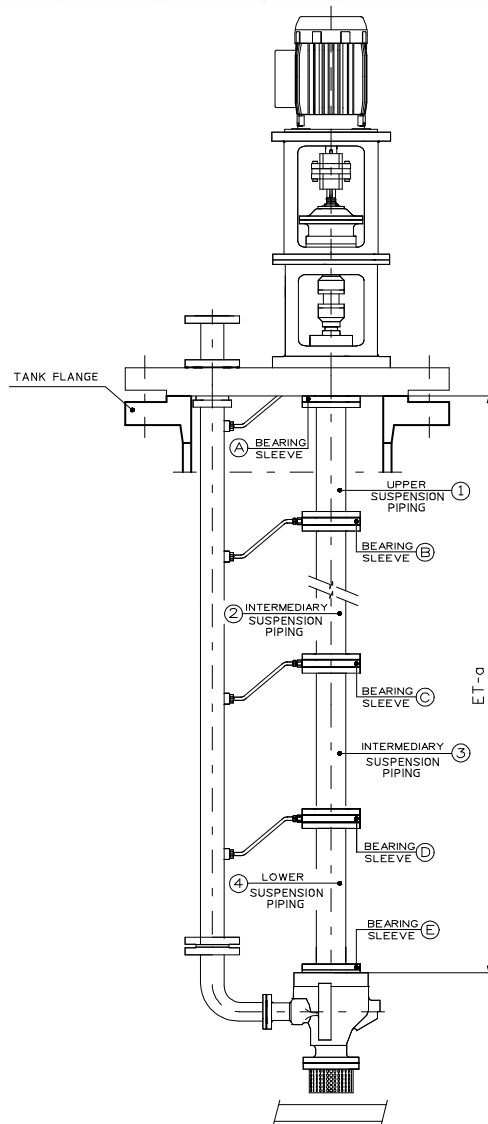
11.1 – Rectangular Soleplate (see item 14.1)

Suspension piping length (mm)				Bearing sleeve					Size											
Upper	Intermediary	Intermediary	Lower	Upper	Intermediary	Intermediary	Intermediary	Lower	25-180	25-230	40-180	40-181	50-180	50-200	40-230	40-231	40-280	40-281	80-200	40-361
1	2	3	4	A	B	C	D	E	ET-a (mm)											
400	----	----	----	X	N.A	N.A	N.A	X	425											
500	----	----	----	X	N.A	N.A	N.A	X	525											
600	----	----	----	X	N.A	N.A	N.A	X	625											
800	----	----	----	X	N.A	N.A	N.A	X	825											
900	----	----	----	X	N.A	N.A	N.A	X	925											
500	500	----	----	X	X	N.A	N.A	X	1055											
600	500	----	----	X	X	N.A	N.A	X	1155											
600	600	----	----	X	X	N.A	N.A	X	1255											
900	400	----	----	X	X	N.A	N.A	X	1355											
900	500	----	----	X	X	N.A	N.A	X	1455											
900	600	----	----	X	X	N.A	N.A	X	1555											
800	800	----	----	X	X	N.A	N.A	X	1655											
900	800	----	----	X	X	N.A	N.A	X	1755											
900	900	----	----	X	X	N.A	N.A	X	1855											
900	600	400	----	X	X	X	N.A	X	1985											
900	600	500	----	X	X	X	N.A	X	2085											
900	600	600	----	X	X	X	N.A	X	2185											
900	900	400	----	X	X	X	N.A	X	2285											
900	900	500	----	X	X	X	N.A	X	2385											
900	900	600	----	X	X	X	N.A	X	2485											
900	800	800	----	X	X	X	N.A	X	2585											
900	900	800	----	X	X	X	N.A	X	2685											
900	900	900	----	X	X	X	N.A	X	2785											
900	800	600	500	X	X	X	X	X	2915											
900	900	600	500	X	X	X	X	X	3015											
900	900	800	400	X	X	X	X	X	3115											
900	900	900	400	X	X	X	X	X	3215											
900	900	900	500	X	X	X	X	X	3315											
900	900	900	600	X	X	X	X	X	3415											
900	900	800	800	X	X	X	X	X	3515											
900	900	900	800	X	X	X	X	X	3615											
900	900	900	900	X	X	X	X	X	3715											

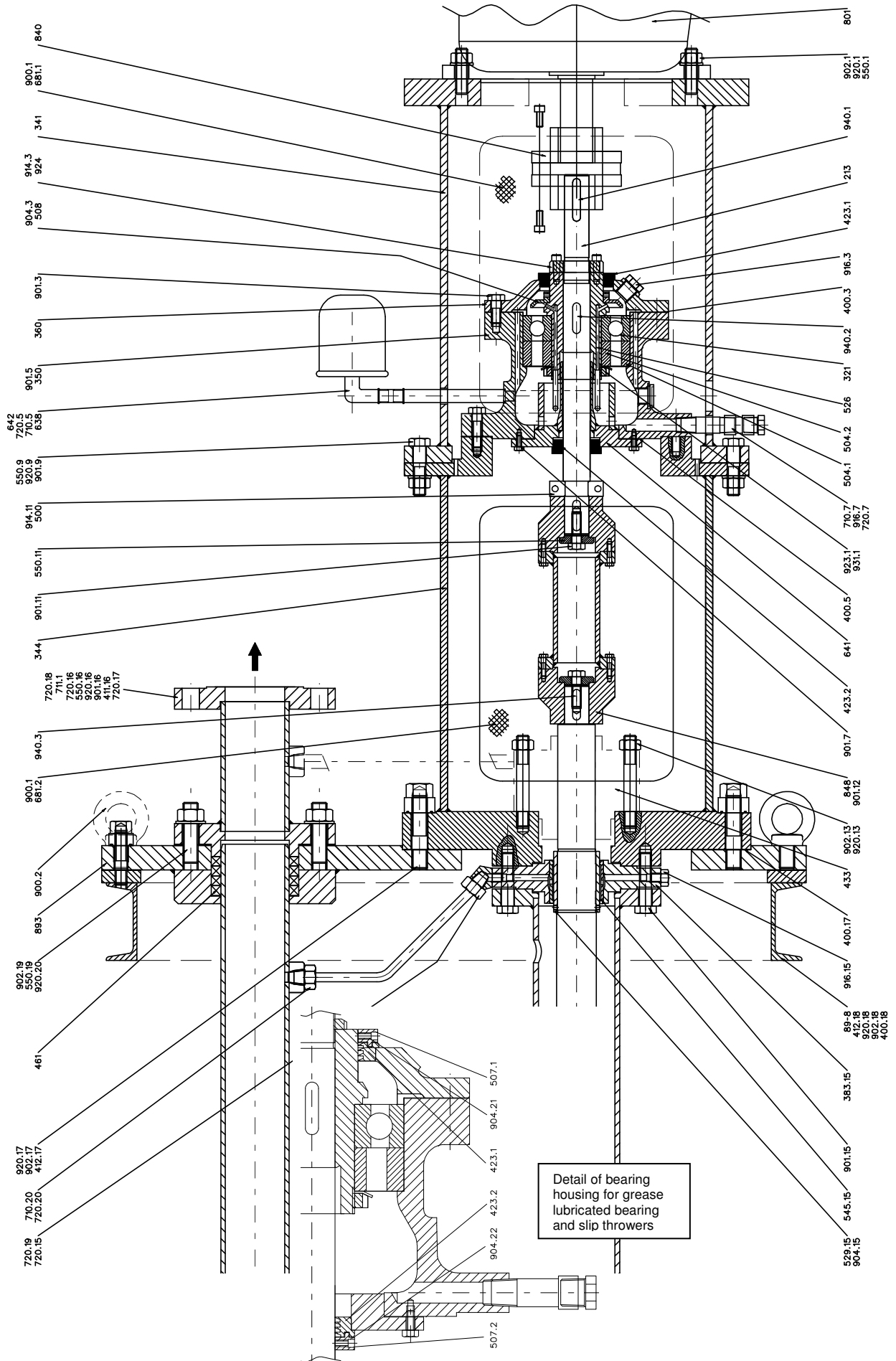


11.2 – Circular soleplate (see item 14.2)

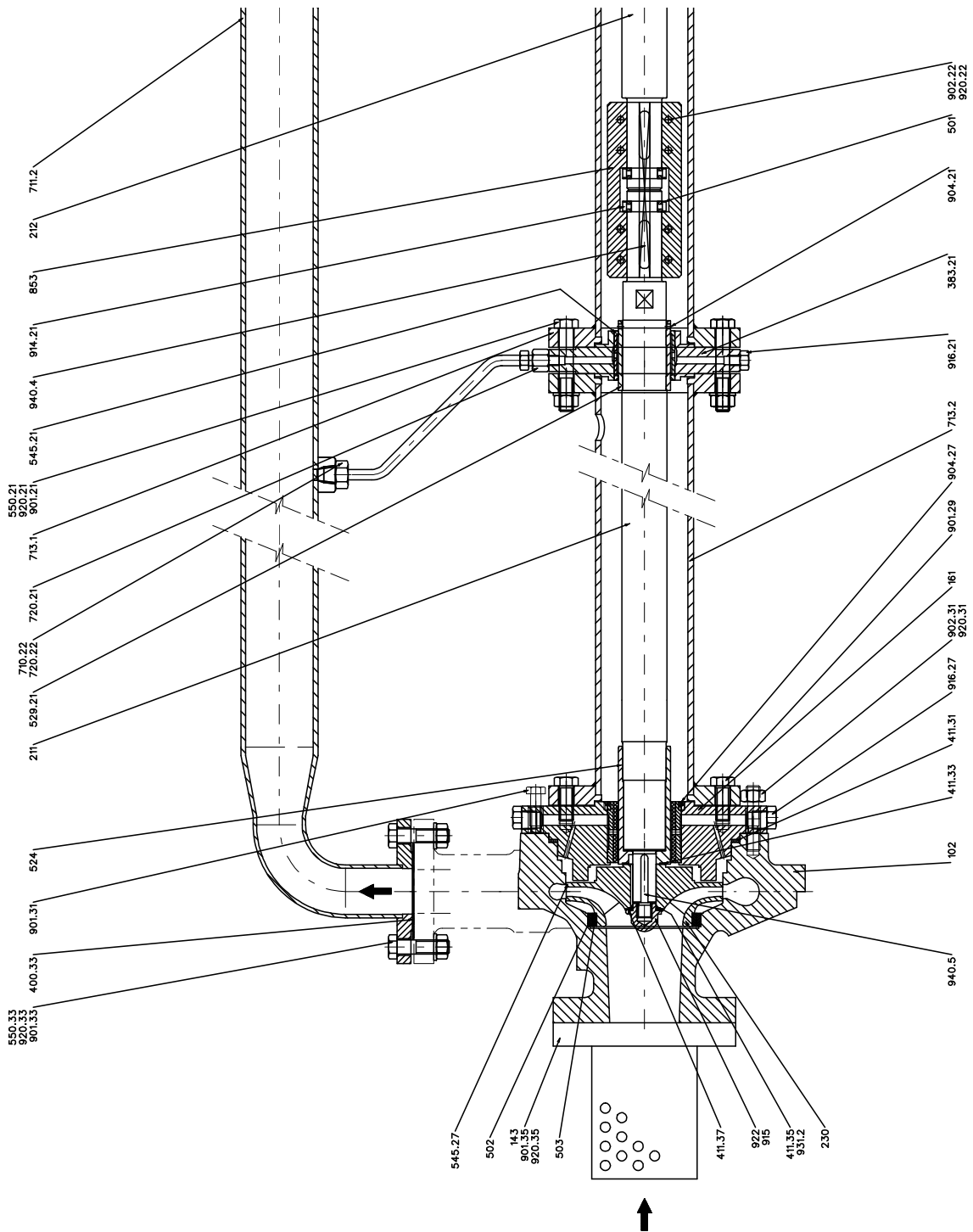
Suspension piping length (mm)				Bearing sleeve					Size												
Upper	Intermediary	Intermediary	Lower	Upper	Intermediary	Intermediary	Intermediary	Lower	25-180	25-230	40-180	40-181	50-180	50-200	40-230	40-231	40-280	40-281	80-200	40-361	
1	2	3	4	A	B	C	D	E	ET-a (mm)												
400	----	----	----	X	N.A	N.A	N.A	X													
500	----	----	----	X	N.A	N.A	N.A	X													
600	----	----	----	X	N.A	N.A	N.A	X													
800	----	----	----	X	N.A	N.A	N.A	X													
900	----	----	----	X	N.A	N.A	N.A	X													
500	500	----	----	X	X	N.A	N.A	X													
600	500	----	----	X	X	N.A	N.A	X													
600	600	----	----	X	X	N.A	N.A	X													
900	400	----	----	X	X	N.A	N.A	X													
900	500	----	----	X	X	N.A	N.A	X													
900	600	----	----	X	X	N.A	N.A	X													
800	800	----	----	X	X	N.A	N.A	X													
900	800	----	----	X	X	N.A	N.A	X													
900	900	----	----	X	X	N.A	N.A	X													
900	600	400	----	X	X	X	N.A	X													
900	600	500	----	X	X	X	N.A	X													
900	600	600	----	X	X	X	N.A	X													
900	900	400	----	X	X	X	N.A	X													
900	900	500	----	X	X	X	N.A	X													
900	900	600	----	X	X	X	N.A	X													
900	800	800	----	X	X	X	N.A	X													
900	900	800	----	X	X	X	N.A	X													
900	900	900	----	X	X	X	N.A	X													
900	800	600	500	X	X	X	X	X													
900	900	600	500	X	X	X	X	X													
900	900	800	400	X	X	X	X	X													
900	900	900	400	X	X	X	X	X													
900	900	900	500	X	X	X	X	X													
900	900	900	600	X	X	X	X	X													
900	900	800	800	X	X	X	X	X													
900	900	900	800	X	X	X	X	X													
900	900	900	900	X	X	X	X	X													



12. Sectional drawing (part 1/2) – reference only



Sectional drawing (part 2/2)

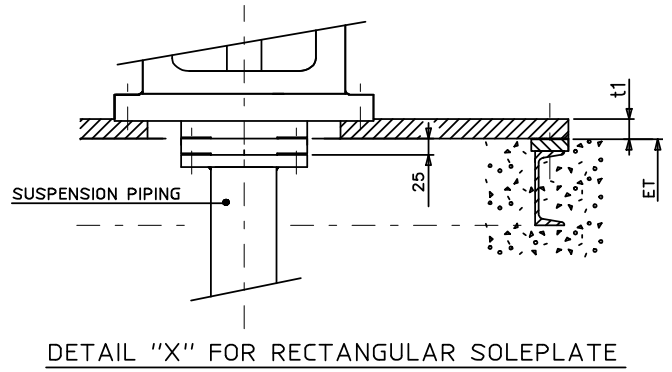
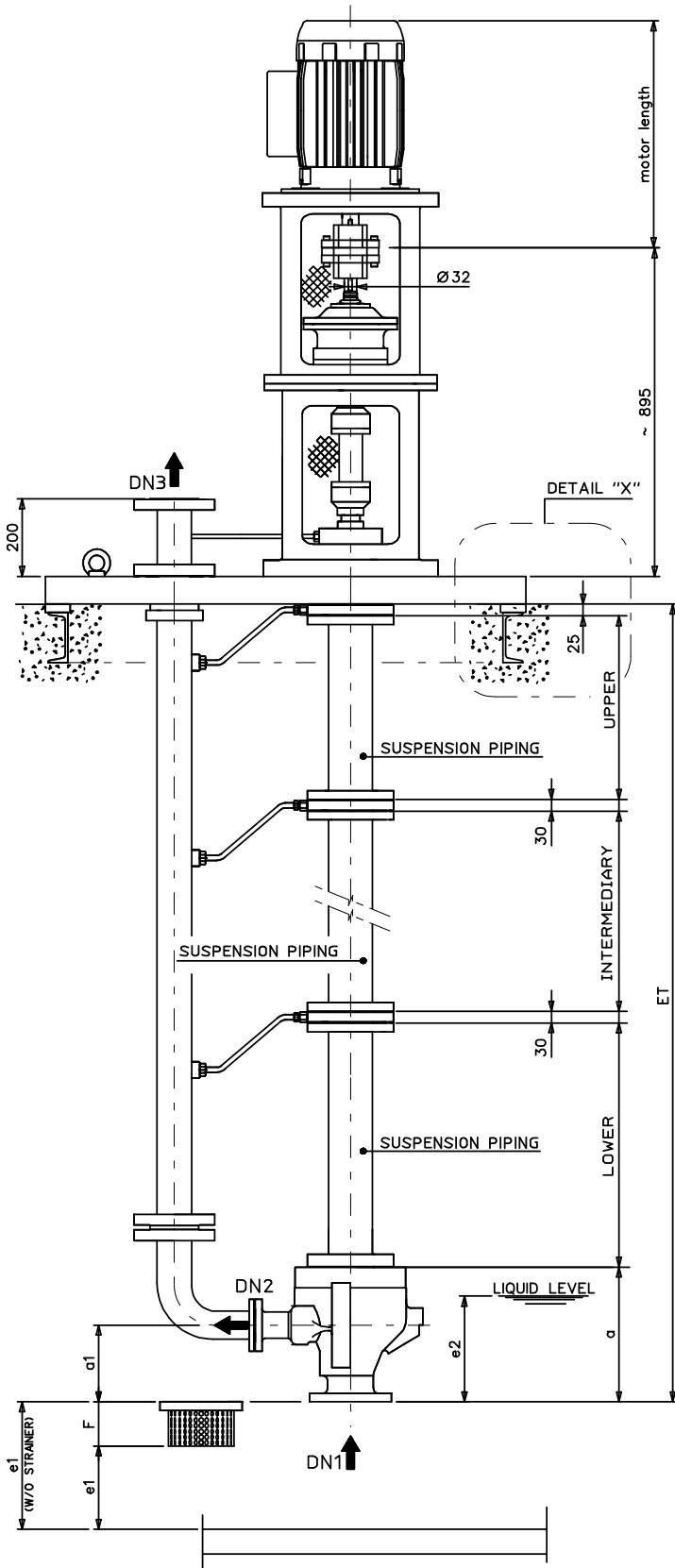


13. Main parts list

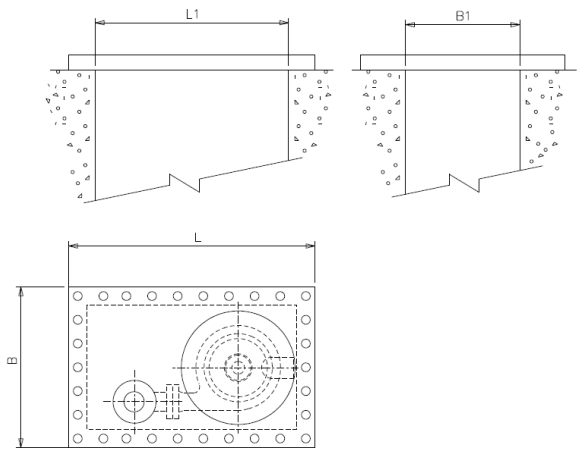
Description	Part n°	Description	Part n°	Description	Part n°
Volute casing	102	Bearing cover	360	Bearing sleeve	529.15
Strainer (optional)	143	Spider	383.15	Bearing sleeve	529.21
Casing cover	161	Spider	383.21	Constant level oiler	638
Pump shaft	211	Spiral wound	411.31	Rising	711.1
Intermediary shaft	212	Mechanical seal	433	Rising	711.2
Drive shaft	213	Lantern ring	458	Suspension piping	713.1
Impeller	230	Packing	461	Suspension piping	713.2
Bearing	321	Wear ring	502	Soleplate	893
Drive lantern	341	Impeller wear ring	503	Impeller nut	922
Bearing bracket lantern	344	Shaft prot.sleeve	524	Bearing nut	923
Bearing casing	350	Center sleeve	526		

14. Pump dimensions – General arrangement drawing

14.1 - Rectangular soleplate

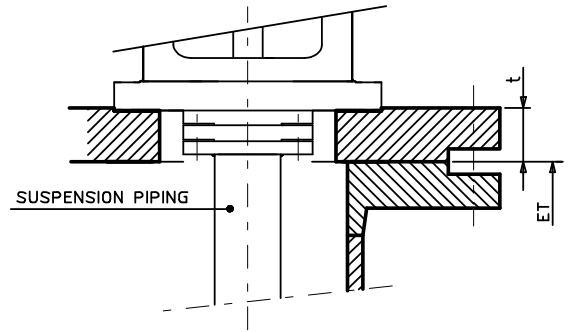
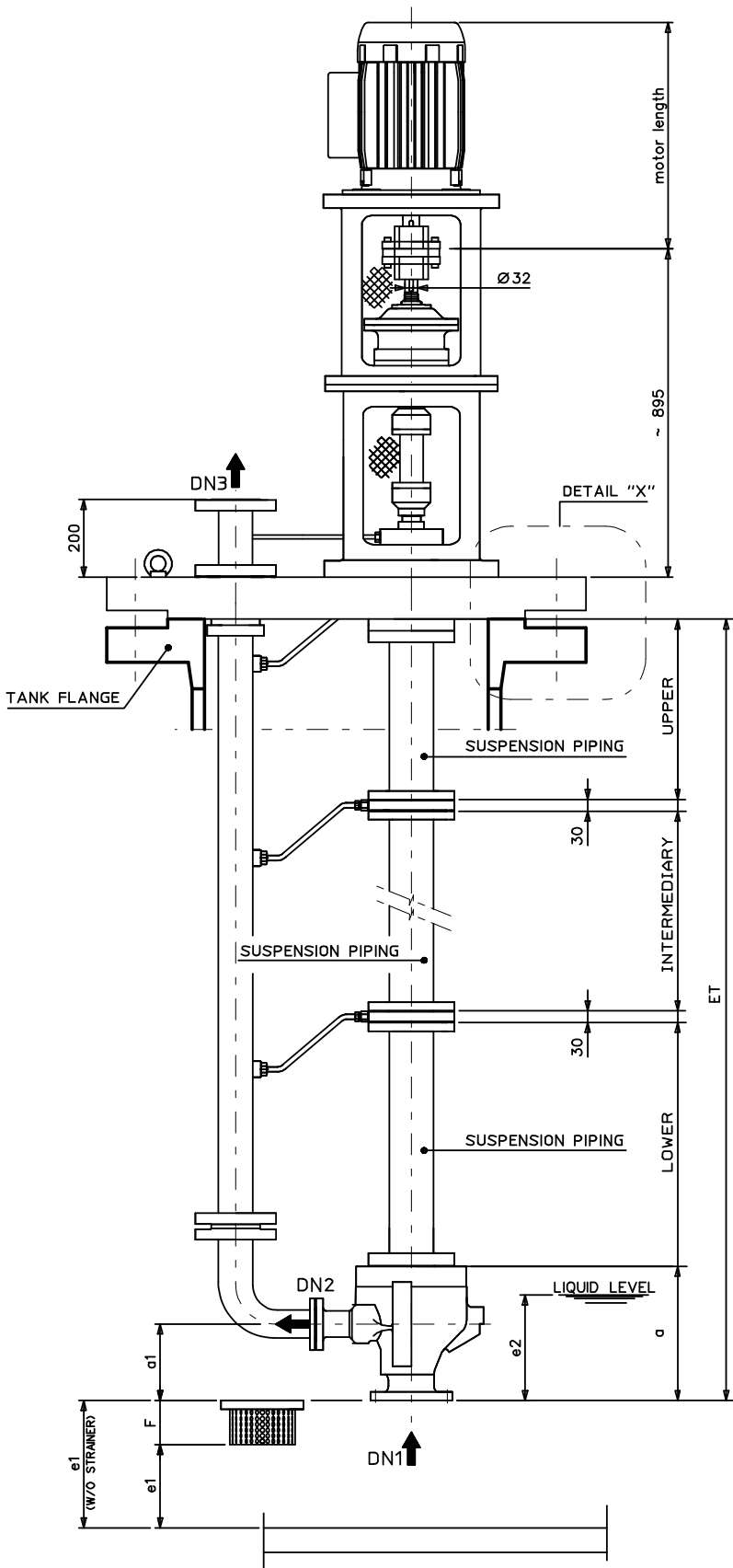


DETAIL "X" FOR RECTANGULAR SOLEPLATE

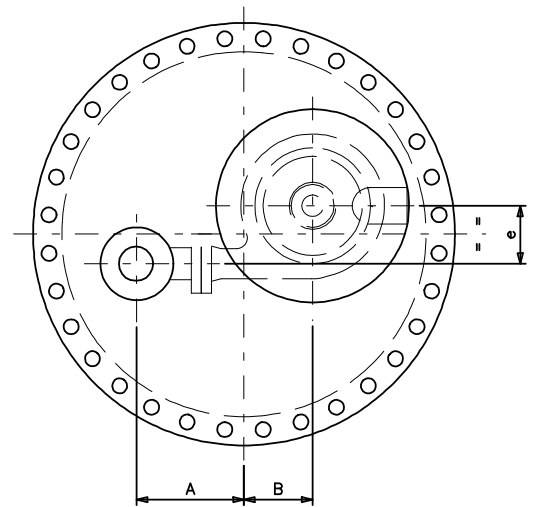
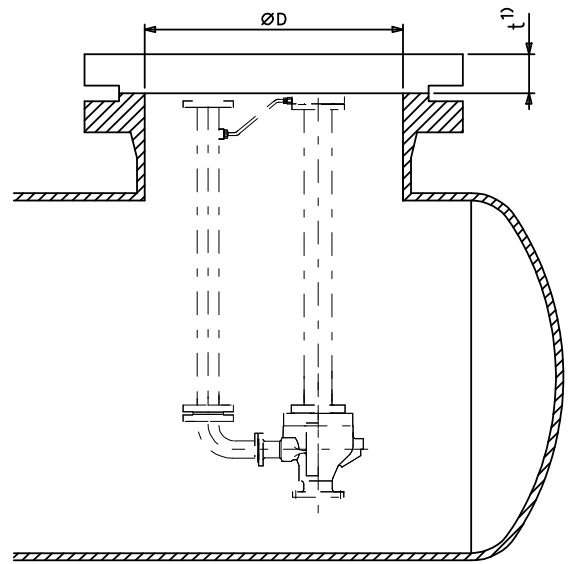


RECTANGULAR SOLEPLATE

14.2 – Circular Flange



DETAIL "X" FOR CIRCULAR SOLEPLATE



CIRCULAR SOLEPLATE

15. Pump dimensions ¹⁾

15.1 Table 1

PUMP SIZE	PUMP								
	NOZZLES			a	a1	e	e1 (min)	e2 (min)	F
	DN1	DN2	DN3						
25-180	40	25	40	214	120	105	65	240	140
25-230	40	25	40	206	120	125	65	240	140
40-180	50	40	80	224	130	105	80	260	160
40-181	50	40	80	228	130	110	80	260	160
40-230	50	40	80	216	130	130	80	260	160
40-231	50	40	80	230	140	135	80	280	160
40-280	50	40	80	234	140	160	80	280	160
40-281	50	40	80	235	140	160	80	280	160
40-361	50	40	80	242	150	195	80	300	160
50-180	80	50	80	248	150	120	100	300	160
50-200	80	50	80	236	150	125	100	300	160
80-200	100	80	150	271	185	130	125	370	200

15.2 Table 2

PUMP SIZE	SOLEPLATE									
	CIRCULAR FLANGE ²⁾					RECTANGULAR				
	Nominal pipe size	A	B	D (min.) ³⁾	t	TANK		SOLEPLATE		
						L1	B1	L	B	t1
25-180	26"	247	125	610	66,7	690	470	782	562	31,7
25-230	28"	247	150	660	69,9	720	470	812	562	31,7
40-180	28"	252	160	660	69,9	760	470	852	562	31,7
40-181	28"	252	160	660	69,9	760	470	852	562	31,7
40-230	30"	272	155	711	73,1	770	480	862	572	31,7
40-231	30"	272	155	711	73,1	770	480	862	572	31,7
40-280	32"	297	155	762	79,4	800	550	892	642	31,7
40-281	32"	297	155	762	79,4	800	550	892	642	31,7
40-361	36"	337	130	864	88,9	830	630	922	722	31,7
50-180	28"	257	165	660	69,9	770	470	862	562	31,7
50-200	26"	227	130	610	66,7	700	470	792	562	31,7
80-200	30"	235	170	711	73,1	800	530	892	622	31,7

¹⁾ Dimensions in mm, except where noted.

²⁾ Dimensions according to ASME B16.47 Class 150# RF Serie A.
 Standard materials for a maximum working pressure of 13,5 bar at 200°C:
 - Casted: A216 WCB (CS) and A351CF8M (SS).
 - Forged: A105 (CS) and A182 Gr. F316 (SS).
 Others materials, rating class or different flange thickness upon request.

³⁾ D is the minimum pipe inside diameter.

16. Pump weight – estimated values

SUSPENSION PIPE				PUMP SIZE																								
				RECTANGULAR SOLEPLATE												CIRCULAR SOLEPLATE												
1	2	3	4	25-180	25-230	40-180	40-230	50-200	80-200	40-181	40-231	40-280	40-361	50-180	50-180	50-200	80-200	40-181	40-231	40-280	40-361	50-180	50-180					
400	400	400	400	815.2	847.7	844.5	886.5	852.5	932.5	843	888.5	935.5	1006	861.5	909.7	963.7	960.5	969.5	1012.5	1048.5	1062	1094.5	1021.5	1013.5				
500	500	500	500	817.7	851.7	849.5	891	861	942	850	893	940.5	1012.5	869.5	913.7	967.7	965.5	994	1021.5	1058	1069	1099	1026.5	1021.5				
600	600	600	600	819.2	855.2	853.5	895.5	867	949.5	855.5	897.5	944.5	1018.5	876	917.2	971.2	969.5	998.5	1027	1065.5	1074.5	1103.5	1047.5	1028				
800	800	800	800	823.2	862.2	861	903.5	875.5	980.5	866.5	905.5	952	1029	885	924.2	978.2	977	1006.5	1036.5	1076.5	1085.5	1111.5	1038	1037				
900	900	900	900	825.2	866.2	865.5	907.5	882.5	988.5	872.5	909.5	956.5	1035.5	891.5	928.2	982.2	981.5	1010.5	1042.5	1084.5	1091.5	1115.5	1042.5	1043.5				
500	500	500	500	920.4	975.4	975.2	1021.4	988.9	1085.2	975.7	1023.6	1075.3	1154.5	998.3	1043.6	1103.0	1102.8	1134.7	1164.9	1212.8	1216.6	1250.2	1169.9	1165.5				
600	600	600	600	923.2	959.4	959.8	1005.0	976.3	1074.2	962.0	1008.2	1059.9	1141.3	985.1	1027.6	1087.0	1087.4	1119.3	1152.3	1201.8	1202.9	1234.8	1154.5	1152.3				
800	800	800	800	927.7	983.1	984.0	1030.7	1000.5	1100.6	986.2	1032.9	1084.1	1165.5	1009.3	1051.3	1110.7	1111.6	1144.0	1176.5	1228.2	1227.1	1259.5	1178.7	1176.5				
900	900	900	900	926.4	987.5	989.5	1035.7	1009.3	1110.5	997.2	1037.9	1089.6	1176.5	1018.1	1055.7	1115.1	1117.1	1149.0	1185.3	1238.1	1238.1	1264.5	1184.2	1185.3				
900	900	900	900	929.2	991.9	994.4	1040.6	1014.2	1117.6	1002.1	1042.8	1094.5	1181.4	1023.0	1060.1	1119.5	1122.0	1153.9	1190.2	1245.2	1243.0	1269.4	1189.1	1190.2				
900	900	900	900	930.8	995.7	998.8	1045.6	1019.2	1124.2	1006.5	1047.8	1098.9	1185.8	1027.4	1063.9	1123.3	1126.4	1158.9	1195.2	1251.8	1247.4	1274.4	1193.5	1194.6				
800	800	800	800	933.6	999.6	1003.2	1050.0	1021.9	1129.2	1005.3	1052.2	1103.3	1188.0	1030.7	1067.8	1127.2	1130.8	1163.3	1197.9	1256.8	1250.2	1278.8	1197.9	1197.9				
900	900	900	900	938.0	1008.4	1013.7	1069.8	1034.6	1144.6	1021.4	1072.0	1113.8	1200.7	1042.3	1076.6	1136.0	1141.3	1183.1	1210.6	1272.2	1262.3	1298.6	1208.4	1204.5				
900	900	900	900	1035.84	1124.04	1130.4	1181.4	1153.2	1275.6	1138.8	1183.8	1239.6	1334.4	1162.2	1196.44	1263.24	1269.6	1305	1345.2	1414.8	1401.6	1431	1342.8	1344.6				
900	900	900	900	1038.84	1128.84	1135.8	1186.8	1159.2	1283.4	1144.2	1189.2	1245	1339.8	1167.6	1203.24	1268.04	1275	1310.4	1351.2	1422.6	1407	1436.4	1348.2	1350				
900	900	900	900	1040.64	1133.04	1140.6	1191.6	1164.6	1290.6	1149	1194	1249.8	1344.6	1172.4	1207.44	1272.24	1279.8	1315.2	1356.6	1429.8	1411.8	1441.2	1353	1379.4				
900	900	900	900	1043.64	1137.84	1146	1197.6	1170	1298.4	1154.4	1200	1255.2	1350	1178.4	1212.24	1277.04	1285.2	1321.2	1362	1437.6	1417.2	1447.2	1358.4	1360.8				
900	900	900	900	1046.64	1142.64	1152	1203	1176	1305.6	1160.4	1205.4	1261.2	1356	1183.8	1217.04	1281.84	1291.2	1326.6	1368	1444.8	1423.2	1452.6	1364.4	1366.2				
900	900	900	900	1048.44	1146.84	1156.8	1207.8	1180.8	1312.8	1165.2	1210.2	1266	1360.8	1188.6	1221.24	1286.04	1296	1331.4	1372.8	1452	1428	1457.4	1369.2	1371				
900	900	900	900	1051.44	1151.04	1161.6	1212.6	1186.2	1320	1170	1215	1270.8	1365.6	1193.4	1225.44	1290.24	1300.8	1336.2	1378.2	1459.2	1432.8	1462.2	1374	1400.4				
900	900	900	900	1053.84	1155.84	1167	1218	1191.6	1327.8	1175.4	1220.4	1276.2	1371	1199.4	1230.24	1295.04	1306.2	1341.6	1383.6	1467	1438.2	1467.6	1379.4	1381.8				
900	900	900	900	1056.24	1160.64	1173	1224	1197	1335	1181.4	1226.4	1282.2	1377	1205.4	1235.04	1299.84	1312.2	1347.6	1389	1474.2	1444.2	1473.6	1385.4	1387.8				
900	900	900	900	1247.7	1382.1	1397.2	1456.7	1426.6	1589.0	1407.0	1459.5	1524.6	1635.2	1435.0	1468.9	1544.5	1559.6	1600.9	1650.6	1751.4	1713.6	1747.9	1645.0	1675.8				
900	900	900	900	1250.5	1387.7	1403.5	1463.0	1432.9	1598.1	1413.3	1465.8	1530.9	1641.5	1441.3	1474.5	1550.1	1565.9	1607.2	1656.9	1760.5	1719.9	1754.2	1651.3	1682.1				
900	900	900	900	1253.3	1392.6	1409.1	1469.3	1439.2	1606.5	1419.9	1472.1	1536.5	1647.1	1446.9	1479.4	1555.0	1571.5	1613.5	1663.2	1768.9	1725.5	1760.5	1656.9	1687.7				
900	900	900	900	1256.1	1398.2	1415.4	1475.6	1446.2	1615.6	1425.2	1478.4	1542.8	1653.4	1453.2	1485.0	1560.6	1577.8	1619.8	1670.2	1778.0	1731.8	1766.8	1662.2	1694.0				
900	900	900	900	1259.6	1403.8	1421.7	1481.9	1452.5	1624.7	1431.5	1484.7	1549.1	1659.7	1460.2	1490.6	1566.2	1584.1	1626.1	1676.5	1787.1	1738.1	1773.1	1669.5	1700.3				
900	900	900	900	1261.7	1408.7	1428.0	1487.5	1458.8	1632.4	1437.8	1490.3	1555.4	1666.0	1465.8	1495.4	1571.1	1590.6	1631.7	1682.8	1794.8	1744.4	1778.7	1675.8	1706.6				
900	900	900	900	1265.0	1413.6	1433.6	1493.8	1465.1	1640.8	1443.4	1496.6	1561.0	1671.6	1472.1	1500.4	1576.0	1594.0	1638.0	1689.0	1803.2	1750.0	1785.0	1681.4	1712.2				
900	900	900	900	1268.0	1419.2	1439.9	1500.1	1471.4	1649.9	1449.7	1502.9	1573.6	1679.4	1478.4	1506.0	1581.6	1602.3	1644.3	1695.4	1812.3	1756.3	1791.3	1687.7	1718.5				
900	900	900	900	1270.8	1424.8	1446.2	1506.4	1477.7	1663.9	1456.0	1509.2	1573.6	1684.2	1484.7	1511.6	1587.2	1608.6	1650.6	1701.7	1826.3	1762.6	1797.6	1694.0	1724.8				

Note: Only pump weight

Grey Water and Condensate Pump

Rotex

Type Series Booklet



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Drainage / Waste Water

Grey Water and Condensate Pump

Rotex



Main applications

- Disposal
- Heating systems
- Drainage systems
- Drainage

Fluids handled

- Grey water
- Heating water
- Condensate
- River, lake and groundwater

Operating data

Operating properties

Characteristic		Value	
		Rotex 10, 20	Rotex 70
Flow rate	Q [m ³ /h]	≤ 24	
	Q [l/s]	≤ 6,67	
Head	H [m]	≤ 14	
Fluid temperature	T [°C]	≤ 90	≤ 70

Designation

Example: Rotex 10 / 100 D

Designation key

Code	Description	
Rotex	Type series	
10	Size	
	10	<ul style="list-style-type: none"> ▪ Heavy-duty design Rp 1 1/4, Rp 2 ▪ Two-channel impeller ▪ Level control with displacement weight
	20	<ul style="list-style-type: none"> ▪ Heavy-duty design Rp 2 ▪ Three-channel impeller ▪ Level control with displacement weight
70 ¹⁾	<ul style="list-style-type: none"> ▪ Light-duty design Rp 1 1/4, Rp 2 ▪ Open radial impeller ▪ Level control with float switch 	
100	Installation depth [cm]	
	100, 170 ²⁾	
D	Drive	
	D	Three-phase motor
	E	Single-phase AC motor

Design details

Design

- Centrifugal pump
- Single-stage
- To EN 12050-2
- Pump foot designed as inlet strainer
- Discharge to the top, parallel to the pump shaft
- Pump and motor rigidly connected via a support column
- Ready to be plugged in
- 1.5 m power cable

Installation type

- Vertical installation

Drive

- Surface-cooled three-phase motor, IP55
- Single-phase AC motor, IP54

Impeller type

Rotex 10:

- Two-channel impeller
- Free passage = 13 mm

Rotex 20:

- Three-channel impeller
- Free passage = 18 mm

Rotex 70:

- Open radial impeller
- Free passage = 10 mm

Bearings

- Product-lubricated plain bearing

1) Rotex size 70 cannot be used for condensate.

2) Rotex size 70 is only available up to an installation depth of 100 cm.

- Grease-packed deep groove ball bearings sealed for life

Automation

- Level control
- Pump operation is automatic, depending on the fluid level

Rotex 10, 20:

- Displacement weight with cable pull float switch control

Rotex 70:

- Float switch

Materials

Overview of available materials

Description	Material	
	Rotex 10, 20	Rotex 70
Discharge casing	Grey cast iron	-
Volute casing	-	Grey cast iron
Pump shaft for installation depth 100 cm	Steel	Steel
Pump shaft for installation depth 170 cm	Chrome steel	-
Pump foot	-	Grey cast iron
Impeller	Grey cast iron	Polyamide
Bearing housing	Grey cast iron	-
Bearing bush	Sinter bronze, steel PTFE/CuSn	
Pipe	Steel	
Flange	-	Grey cast iron
Casing wear ring	Bronze	-

Product benefits

- Ready-to-connect, easy installation and commissioning
- Automatic operation by level control with displacement weight or float switch
- Easy to install thanks to low weight, compact design and ready-to-connect system
- Maintenance-free thanks to grease-packed deep groove ball bearings sealed for life and product-lubricated plain bearings

Certifications

Overview

Label	Effective in:	Note
	Europe	All pump sizes

Technical data

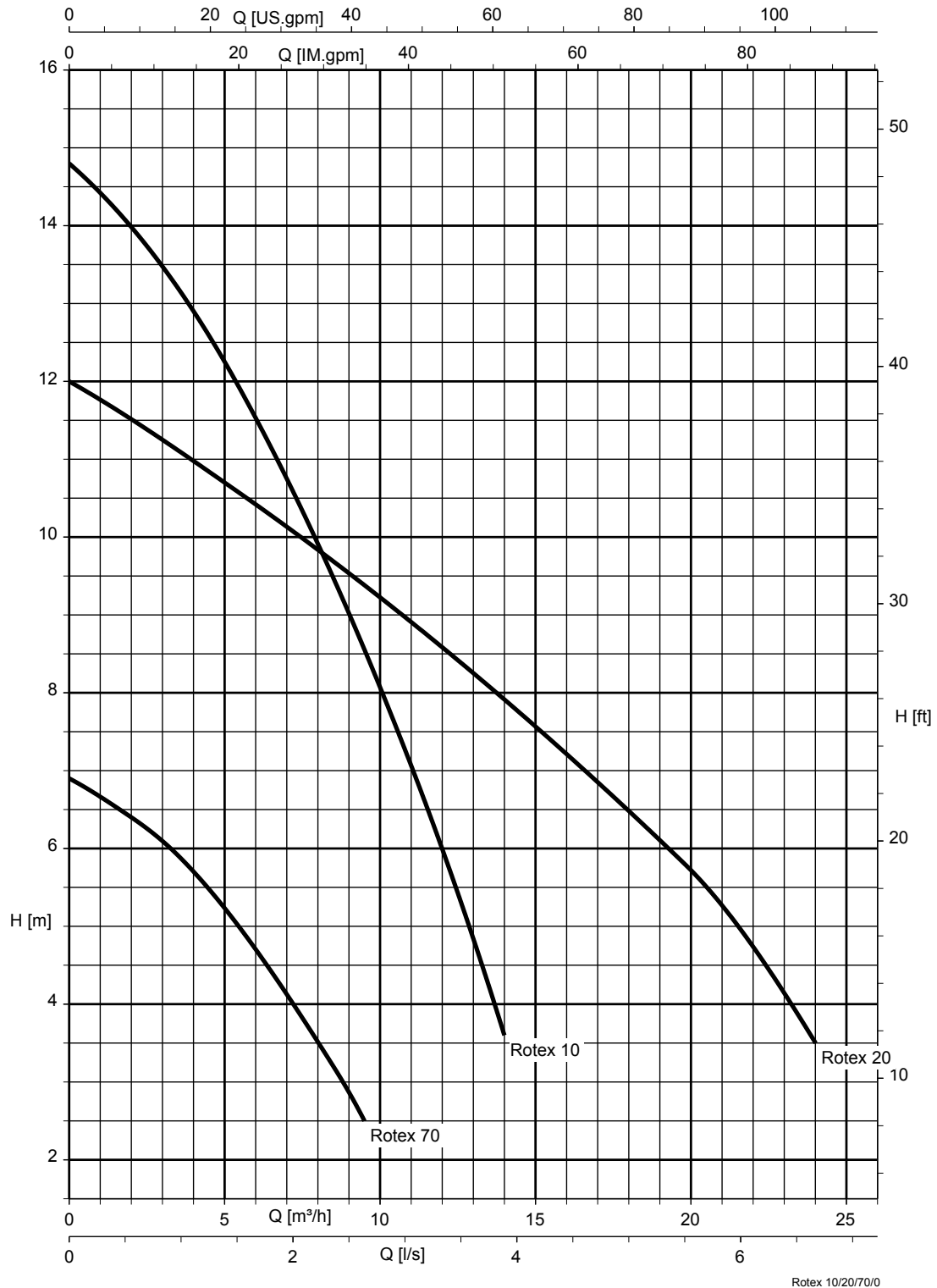
Rotex 10, 20, 70

Technical data

Size	Installation depth [cm]	Connection	P ₂ [kW]	I _N [A]		Mat. No.	[kg]
				1 ~ 230 V	3 ~ 400 V		
10/100 D	100	Rp 1¼	0,55	-	1,35	00529119	25
10/100 E	100	Rp 1¼	0,55	3,6	-	00529129	26
10/170 D	170	Rp 1¼	0,55	-	1,35	00529118	34
10/170 E	170	Rp 1¼	0,55	3,6	-	00529128	35
20/100 D	100	Rp 2	0,55	-	1,35	00529124	26
20/170 D	170	Rp 2	0,55	-	1,35	00529123	35
70 D	100	Rp 1¼	0,37	-	1,0	29101099	16
70 E	100	Rp 1¼	0,37	2,8	-	29101100	17

Characteristic curves

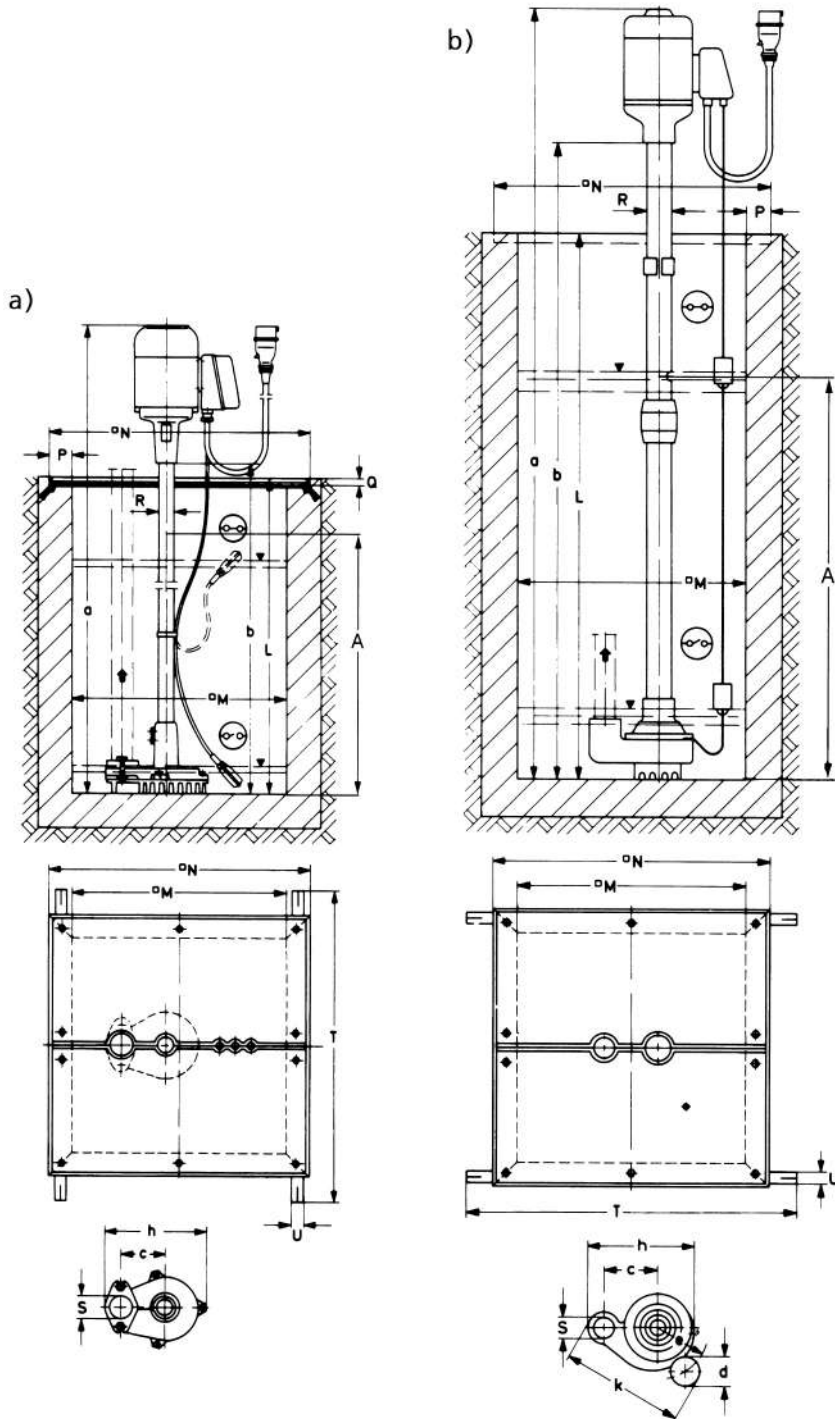
Rotex 10, 20, 70; n = 2900 rpm



Free passage: Rotex 10 = 10 mm; Rotex 20 = 13 mm; Rotex 70 = 18 mm

Dimensions

Rotex 10, 20, 70




Dimensions a) Rotex 70 b) Rotex 10, 20

Minimum water level (stop level)	Rotex 10, 20: 150 mm ³⁾ Rotex 70: 100 mm
Maximum water level (start-up level)	Rotex .../170: ≥ 1000 mm

3) If handling condensate: 400 mm





Dimensions [mm]

Rotex		a	b	c	d	e	h	k	A	L	M	N	P	Q	R	T	U
10/100	Rp 1 1/4	1363	1069	106	60	110	220	242	180	1000	500	560	30	20	60	660	20
10/170	Rp 1 1/4	2085	1791	106	60	110	220	242	1050	1700	500	560	30	20	60	660	20
20/100	Rp 2	1370	1076	117	60	110	240	270	180	1000	500	560	30	20	60	660	20
20/170	Rp 2	2092	1798	117	60	110	240	270	1050	1700	500	560	30	20	60	660	20
70	Rp 1 1/4	1342	1046	97	-	-	215	-	590	1000	500	560	30	20	33,8	660	20

Accessories



Pump accessories




Pump accessories

	Item	Description	Connection	Rotex			Mat. No.	[kg]
				10	20	70		
	P10	RK swing check valve Plastic, EN 12 050-4, with internal thread ISO 7/1, full port and drain plug; cannot be used for pumped drainage	Rp 1 1/4	X	-	X	01009771	0.1
			Rp 2	-	X	-	01009773	0.5
		Swing check valve ISO 7/1, made of gunmetal (225 °C max.)	Rp 2	-	X	-	00430260	2.5
	P11	Socket gate valve CuZn PN 10-12 DIN 3352 With internal thread / internal thread and full port	Rp 1 1/4	X	-	X	01014219	0.627
			Rp 2	-	X	-	00411503	1.287
	P18	Cover plate, steel Tread-proof, split, with profile joints and angle iron mounting frame (type A 560) for 500 x 500 mm pits (Dual-pump stations with P13 Y-pipe are equipped with 2 cover plates next to each other.)	Rp 1 1/4	-	-	X	18075627	13

Alarm switchgears for pumps without ATEX





AS 0/AS 1/AS 2/AS 4/AS 5

	Item	Description	Mat. No.	[kg]
	E50	Alarm switchgear AS 0 With circuit breaker, acoustic signal transmitter with 85 dB(A), green equipment-on lamp Plastic housing IP20, 140 x 80 x 57 mm. Use float switch, F1 moisture sensor (item E64), M1 alarm contactor or signal relay of control unit as contactor.	29128401	0.5
	E51	Alarm switchgear AS 2 With circuit breaker, acoustic signal with 85 dB(A), green equipment-on lamp, volt-free contact for hook-up to a control station Plastic housing IP 20, 140 x 80 x 57 mm. Use float switch, F1 moisture sensor (item E 64) or signal relay of control unit as contactor.	29128422	0.5


	Item	Description	Mat. No.	[kg]
	E52	Alarm switchgear AS 4 With circuit breaker, acoustic signal transmitter with 85 dB(A), green equipment-on lamp, volt-free contact for hook-up to a control station, self-charging power supply unit for 5 hours of operation in the event of a power failure Plastic housing IP20, 140 x 80 x 57 mm. Use float switch (E60), F1 moisture sensor (item E64) or signal relay of control unit as contactor.	29128442	0.5
	E53	Alarm switchgear AS 5 Mains-independent, with self-charging power supply unit for 10 hours of operation in the event of a power failure, mains pilot LED, fault indicator light, horn-off push button, volt-free contact for hook-up to a control station, ready for connection with 1.8 m connection cable and plug. ISO housing IP41, 190 x 165 x 75 mm. Use float switch (E60) or signal relay of control unit as contactor.	00530561	1.7
	E55	Alarm switchgear AS 1 In IP30 ISO plug housing, mains-independent, with self-charging power supply unit for 5 hours of operation in the event of a power failure, acoustic signal transmitter 70 dB(A) with circuit breaker and integrated signal transmitter with 3-metre connection cable, max. 60 °C, not suitable for steam and condensate. 1. High water alert by suspending the moisture sensor in a (pump) sump above the pump start-up point. 2. Water alarm signal at a water level of only 1 mm (!), by placing the contactor on the floor of rooms at risk of flooding, e.g. the cellar or next to the washing machine in the kitchen or bathroom.	00533740	0.9

Control unit/switchgear accessories

Alarm equipment for alarm switchgear AS 5

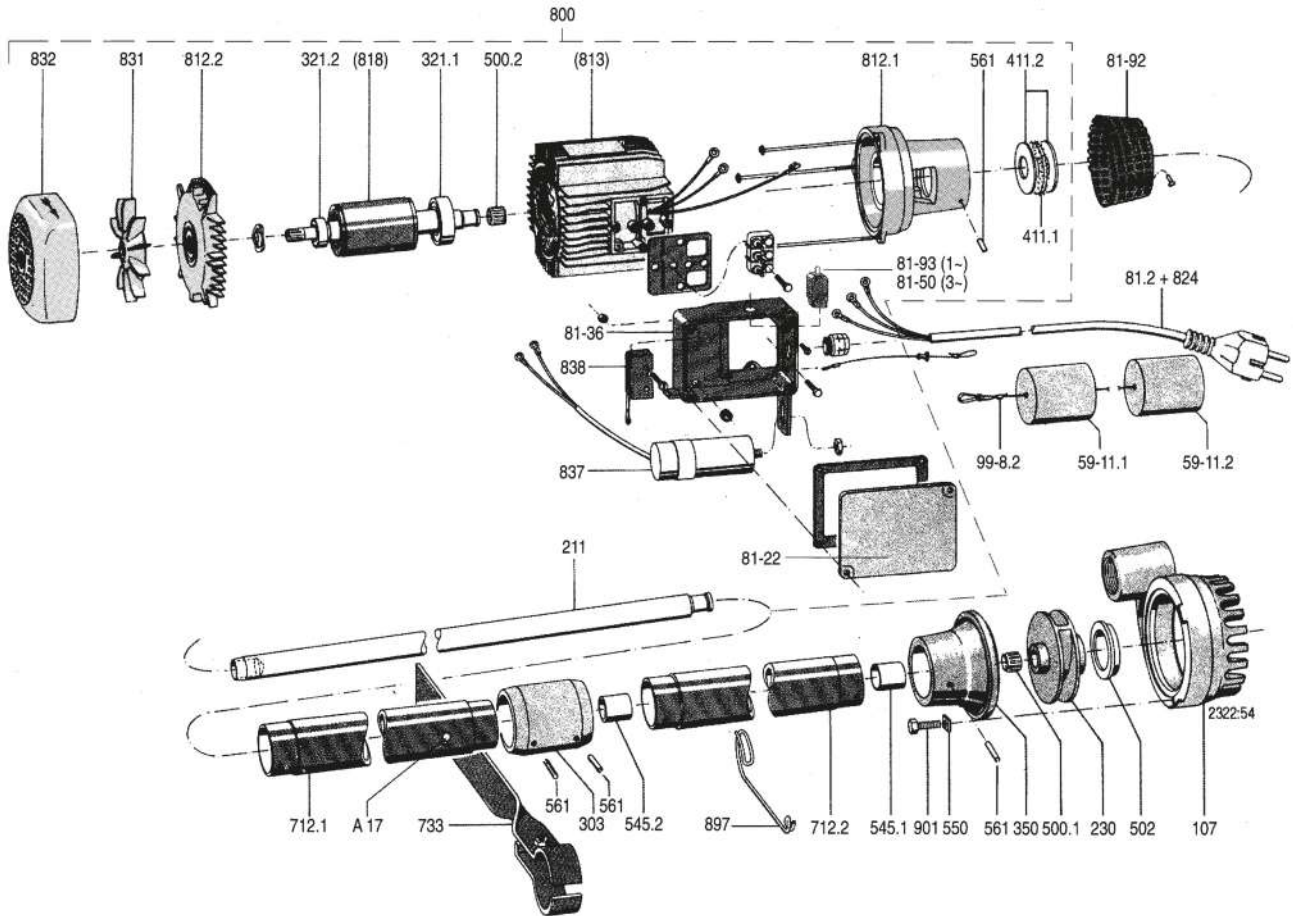
	Description	Mat. No.	[kg]
	Yellow alarm strobe light, 12 V DC, 195 mA, IP65	01056355	0.3
	Plastic housing, (W) 82 × (H) 55 × (D) 106.5 [mm], IP65, for easier installation of alarm strobe light, for wall-mounting	01061067	0.2
	Horn, 12 V DC, 105 dB, 150 mA, IP54, with 0.45 m connection cable	01086547	0.1
	Alarm combination (yellow alarm strobe light and piezo buzzer 92 dB), 12 V DC, 120 mA, IP65	01139930	0.1

Control unit/switchgear accessories -  for Rotex 70 only!

	Item	Description	Type	Mat. No.	[kg]
	E60	Float switch with free cable end (NO contact) Switch housing made of polypropylene (max. fluid temperature 70 °C), circuit closed in upper float position, power cable (H07RN-F 3G1)	5	11037743	0.8
			10 m	11037744	1.3
			20 m	11037746	2.4

Exploded views with lists of components

Rotex 10, 20



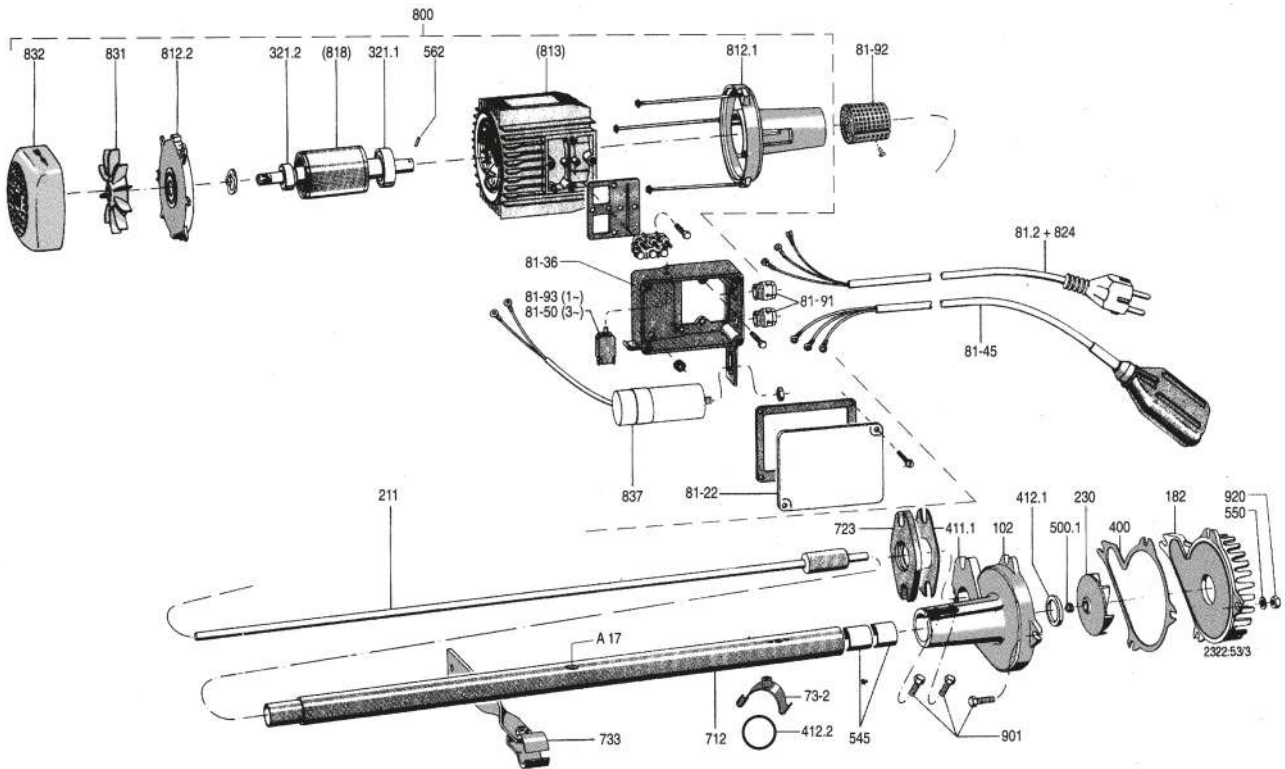
Exploded view - Rotex 10, 20 () = Not available as a separate spare part

List of components

Part No.	Description	Part No.	Description
107	Discharge casing	81-22	Terminal box cover
211	Pump shaft	81-36	Terminal box base
230	Impeller	81-50	Contactar
303 ⁴⁾	Thrust and radial bearing	81-92	Cover plate
321.1/2	Radial ball bearing	81-93	Protective switch
350	Bearing housing	812.1/2	Motor housing cover
411.1/2	Joint ring	813	Stator core pack
500.1/2	Ring	818	Rotor
502	Casing wear ring	824	Cable
545.1/2 ⁴⁾	Bearing bush	831	Fan impeller
550	Disc	832	Fan hood
561	Grooved pin	837	Capacitor
59-11.1/2	Weight	838	Switch
712.1/2 ⁴⁾	Support column	897	Guide piece
733	Pipe clamp	901	Hexagon head bolt
800	Motor	99-8.2	Thread
81-2	Plug	A 17	Overflow hole

⁴⁾ Only included for installation depth 170 cm.

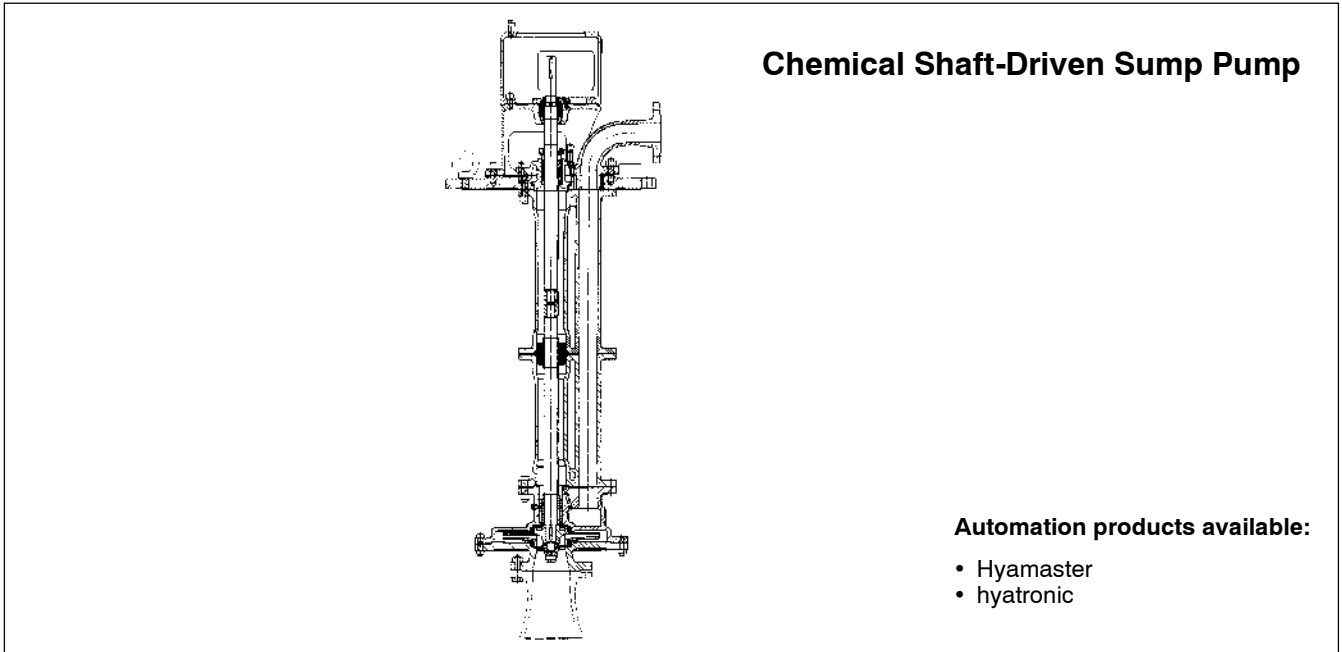
Rotex 70



Exploded view - Rotex 70 () = Not available as a separate spare part

List of components

Part No.	Description	Part No.	Description
102	Volute casing	81-22	Terminal box cover
182	Foot	81-36	Terminal box base
211	Pump shaft	81-45	Float switch
230	Impeller	81-50	Contactar
321.1/2	Radial ball bearing	81-91	Cable gland
400	Gasket	81-92	Cover plate
411.1	Joint ring	81-93	Protective switch
412.1/2	O-ring	812.1/2	Motor housing cover
500.1	Ring	813	Stator core pack
545	Bearing bush	818	Rotor
550	Disc	824	Cable
562	Parallel pin	831	Fan impeller
712	Support column	832	Fan hood
723	Flange	837	Capacitor
73-2	Hose connection	901	Hexagon head bolt
733	Pipe clamp	920	Nut
800	Motor	A 17	Overflow hole
81-2	Plug		



Fields of Application

CTN

For handling chemically aggressive liquids, also slightly contaminated or with a low solids content.

CTN pumps can be used in the chemical and petrochemical industry.

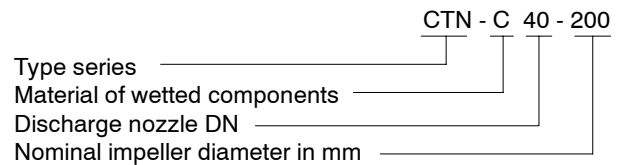
CTN-H

For handling liquids which can only be pumped when warm or hot.

Design

Vertical, radially split shaft-driven sump pump with double volute casing, in wet or dry installation; radial impeller, single-flow, single- and double-stage. The shaft seal is not in contact with the pumped product.

Designation



Operating Data

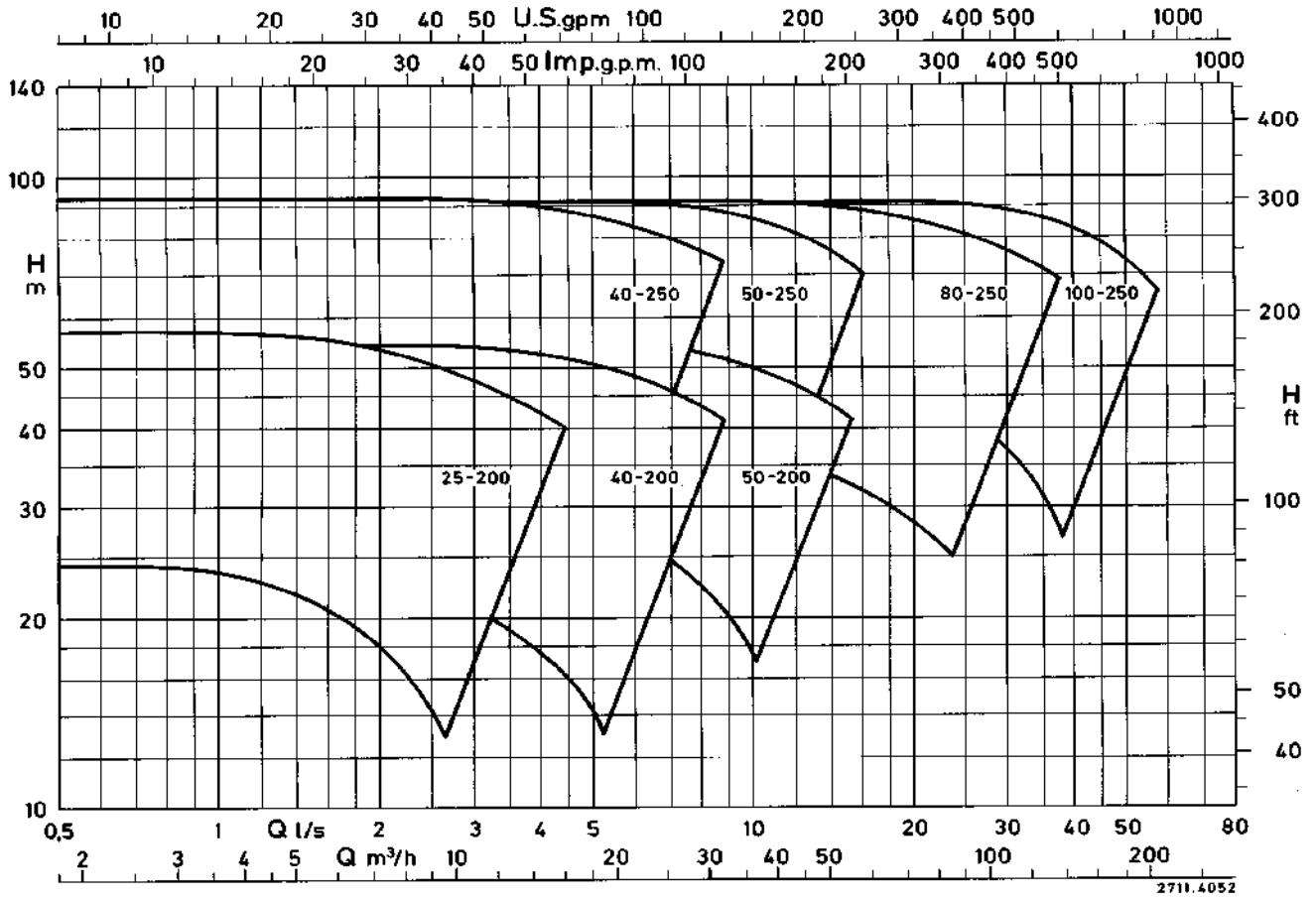
Capacities	Q	up to 220 l/s (800 m ³ /h)
Heads	H	up to 93 m
Pump sizes	DN	25 to 250
Operating pressures	p ₂	up to 16 bar
Operating temperatures	t	-70 °C to +300 °C

Certification

Certified quality management ISO 9001.

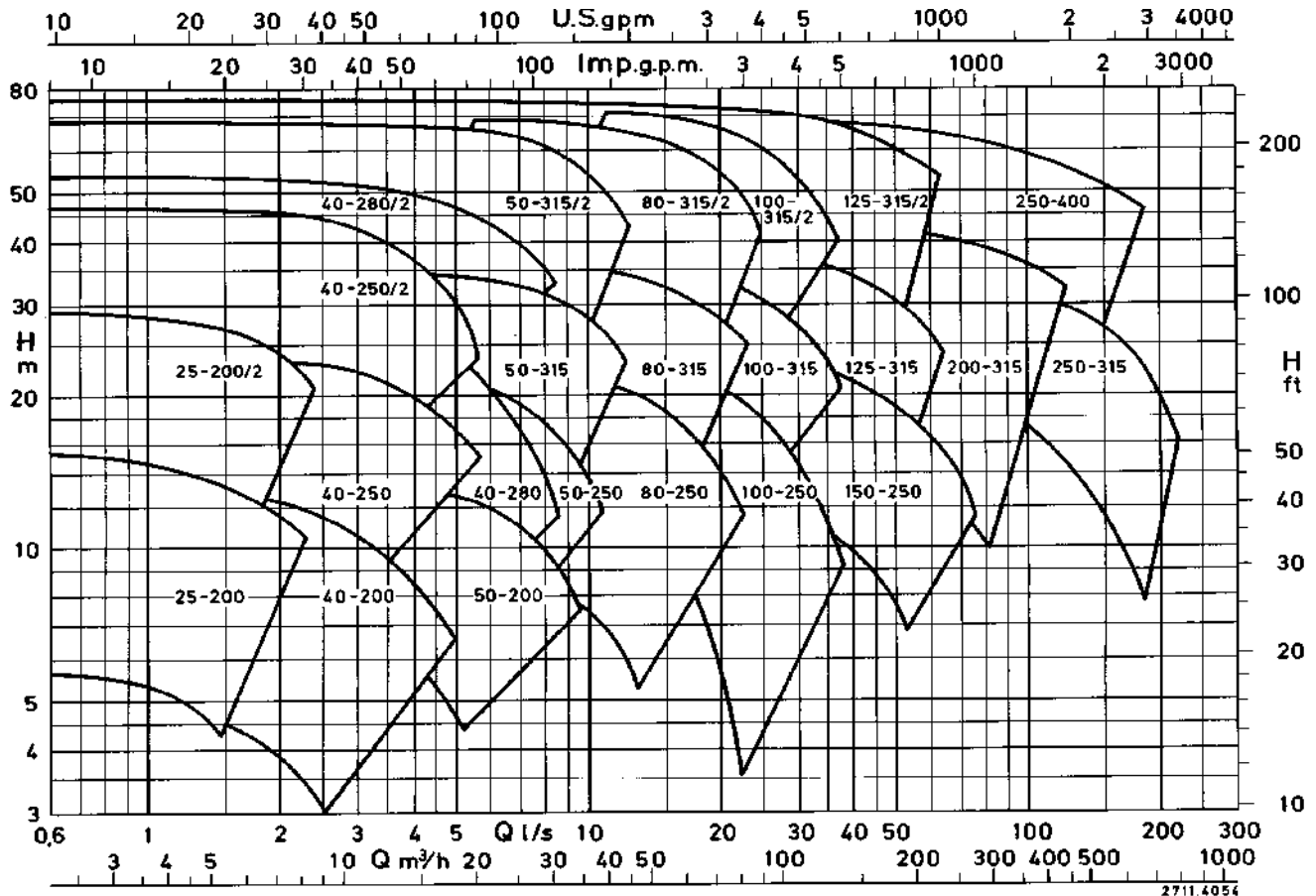
Selection Charts

n = 2900 1/min



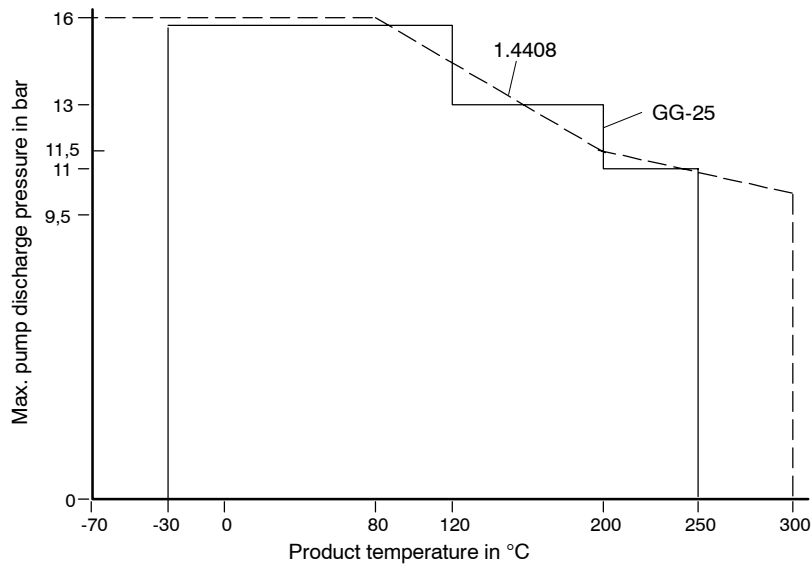
2711.4052

n = 1450 1/min



2711.4054

Pressure and Temperature Limits



Materials

Part No.	Description	CTN/CTN-H	
		Material G	Material C
102	Volute casing	JL1040 ⁵⁾	1.4408
108	Stage casing	JL1040 ⁵⁾	1.4408
153	Suction nozzle	JL1040 ⁵⁾	1.4408
162	Suction cover	JL1040 ⁵⁾	1.4408
210	Shaft	C45SH+S	1.4571SH
230	Impeller	JL1040 ⁵⁾	1.4408
341	Motor stool	JL1040 ⁵⁾	JL1040 ⁵⁾
344	Bearing bracket lantern	JL1040 ⁵⁾	JL1040 ⁵⁾
350.04	Guide bearing housing ³⁾	JL1040 ⁵⁾	1.4408
452.02	Gland cover	C22+N	1.4571
454.02	Stuffing box ring	1.4571	1.4571
458.02	Lantern ring	1.4571	1.4571
502.01 bis .04	Casing wear ring	JL1040 ⁵⁾	-
529.01/.03	Bearing sleeve	1.4122+QT750	1.4571
545.01/.03	Bearing bush	Carbon ⁴⁾	Carbon ⁴⁾
71-9.01/.02	Pipe assembly	JL1040 ^{2) 5)}	1.4571/1.4408
72-1	Flanged elbow	JL1040 ^{2) 5)}	1.4408 ²⁾
852	Threaded coupling	1.4021+QT750	1.4571
893.02	Soleplate	JL1040 ⁵⁾	JL1040 ⁵⁾
	Nuts and bolts	5.6	A4

1) if only one shaft is fitted: for larger installation depths the shaft assembly consists of pump shaft and drive shaft or of pump shaft, intermediate shaft(s) and drive shaft

2) on CTN-H: material variant G = St35; C = 1.4571

3) not applicable to CTN-H

4) standard version: other materials possible, depending on pumped liquid

5) to EN 1561

Benefits at a Glance

Thrust bearing

little axial movement of the rotor; held in position by the shaft nut. Rotor adjustable on mounted pump

Shaft seal

not in contact with the pumped product, gland packing or mechanical seal possible

Plain bearings

adapted to operating conditions, product-lubricated

Double volute

reduces load on the plain bearings

Pressure-retaining components

selected in well-proven calculation procedure, manufactured as quality casting with corrosion allowance

Discharge pipe

raised above the soleplate, easy and quick installation without draining the tank

Soleplate

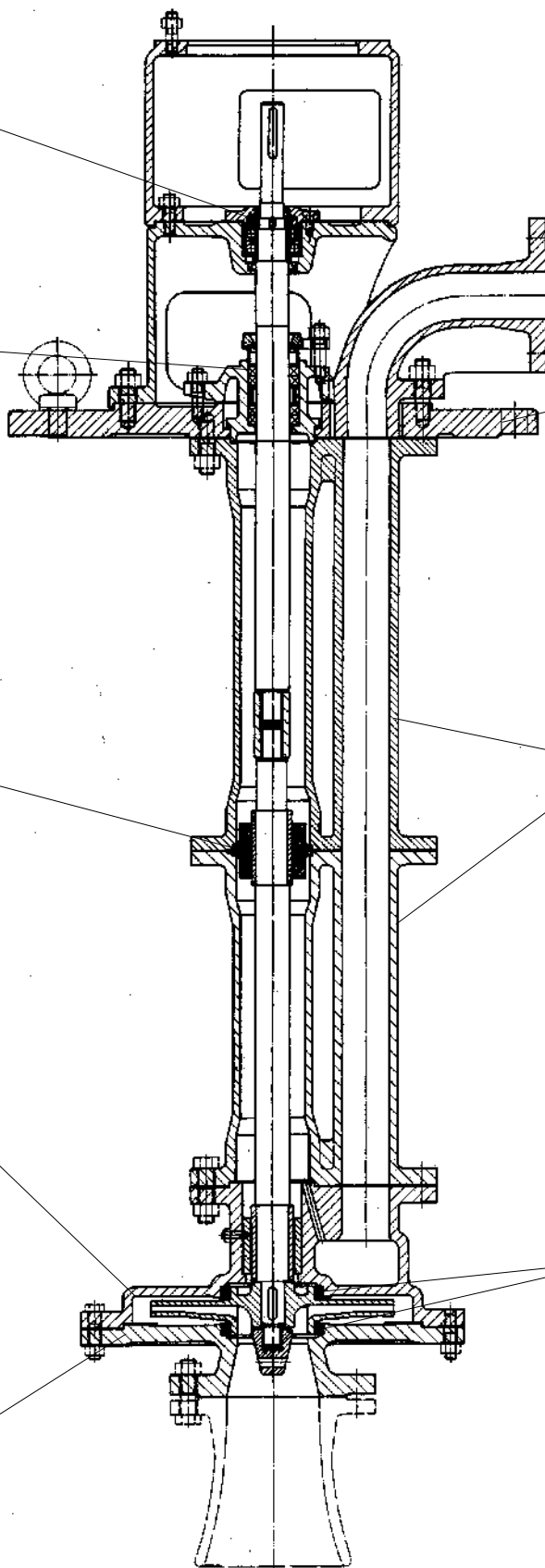
round, interchangeable among certain pump sizes, odour- and gasproof soleplate design possible

Installation depth

variable by combining different quantities of pipe assemblies (modular design system)

Casing wear rings

replaceable (in material variant GG)



Applications

Installations

- Inlet tanks
- Shafts
- Pump sumps
- Tanks
- Wells
- Water extraction from rivers

Utilisation

- General industrial applications
- Water supply
- Fire-fighting systems
- Pressure boosting
- Irrigation
- Drinking water

Fluid handled

Water without solids content

Operating data

Flow rate	Up to 1800 m ³ /h covered by 17 sizes of the hydraulic system Up to 2500 m ³ /h on request
Head	Up to 250 m
Fluid temperature	Up to 60°C
Installation depth	20 m as a standard, larger installation depths on request
Well diameter	6" to 22"
Nominal pressure	16 bar or 25 bar

Designation

	W	8	- 65/	T9	- C01
Type series	_____	_____	_____	_____	_____
Well diameter	_____	_____	_____	_____	_____
Flow rate at best efficiency point	_____	_____	_____	_____	_____
Number of stages	_____	_____	_____	_____	_____
Material variant	_____	_____	_____	_____	_____

Design

Multi-stage deep-well turbine pump with mixed flow impellers

- Suction casing with foot valve and suction strainer
- Motor stool with reinforced thrust bearing and reverse rotation lock
- Flanged column pipe and product-lubricated radial bearings
- Discharge elbow with flange connection on the discharge side
- Discharge nozzle above sole plate
Variant: discharge nozzle below sole plate
- Variant for dry installation

Materials: cast iron or bronze

- Other material variants on request

Drive

- 50/60 Hz electric motor with flexible coupling
- Combustion engine with angular gear
- Motor with hollow shaft

Vertical Deep-well Turbine Pumps



Compliant with Machinery Directive 2006/42/EC

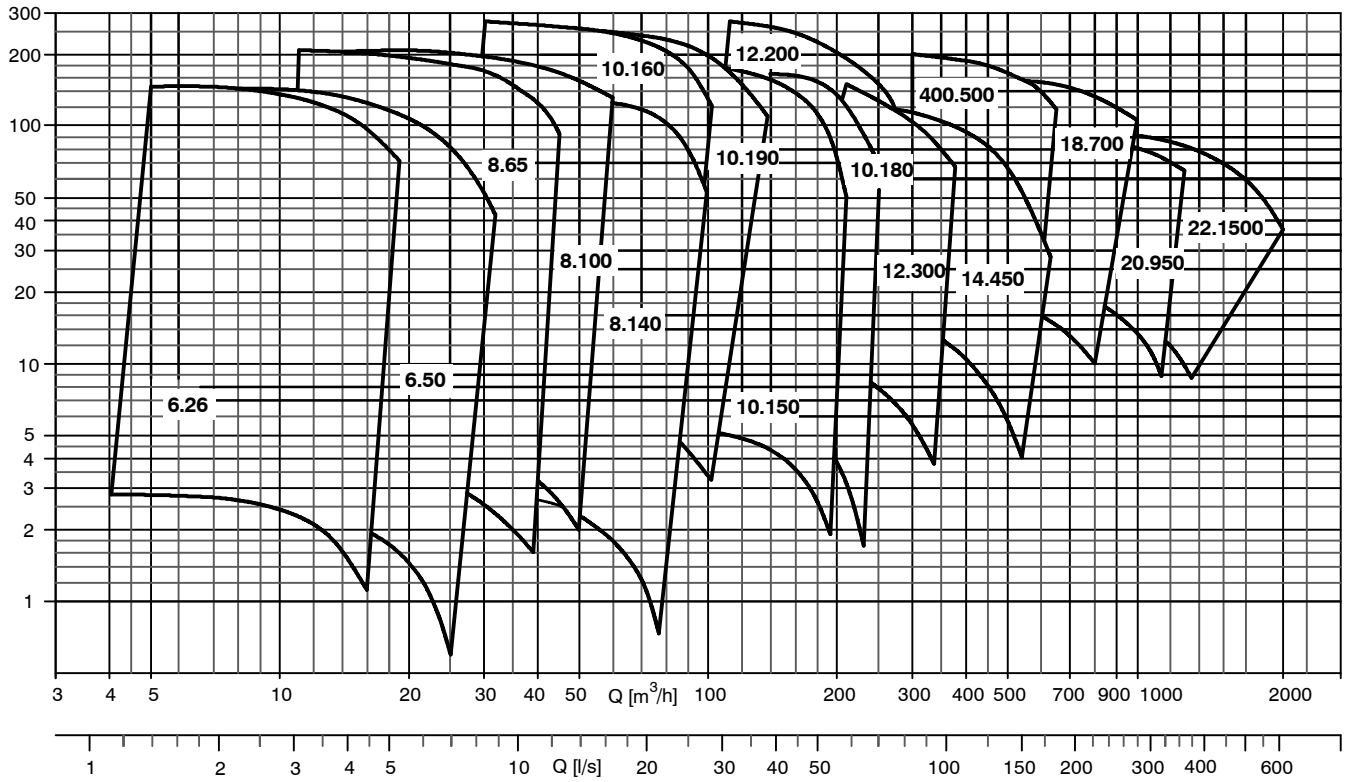


DIN ISO 9001 / EN 29001



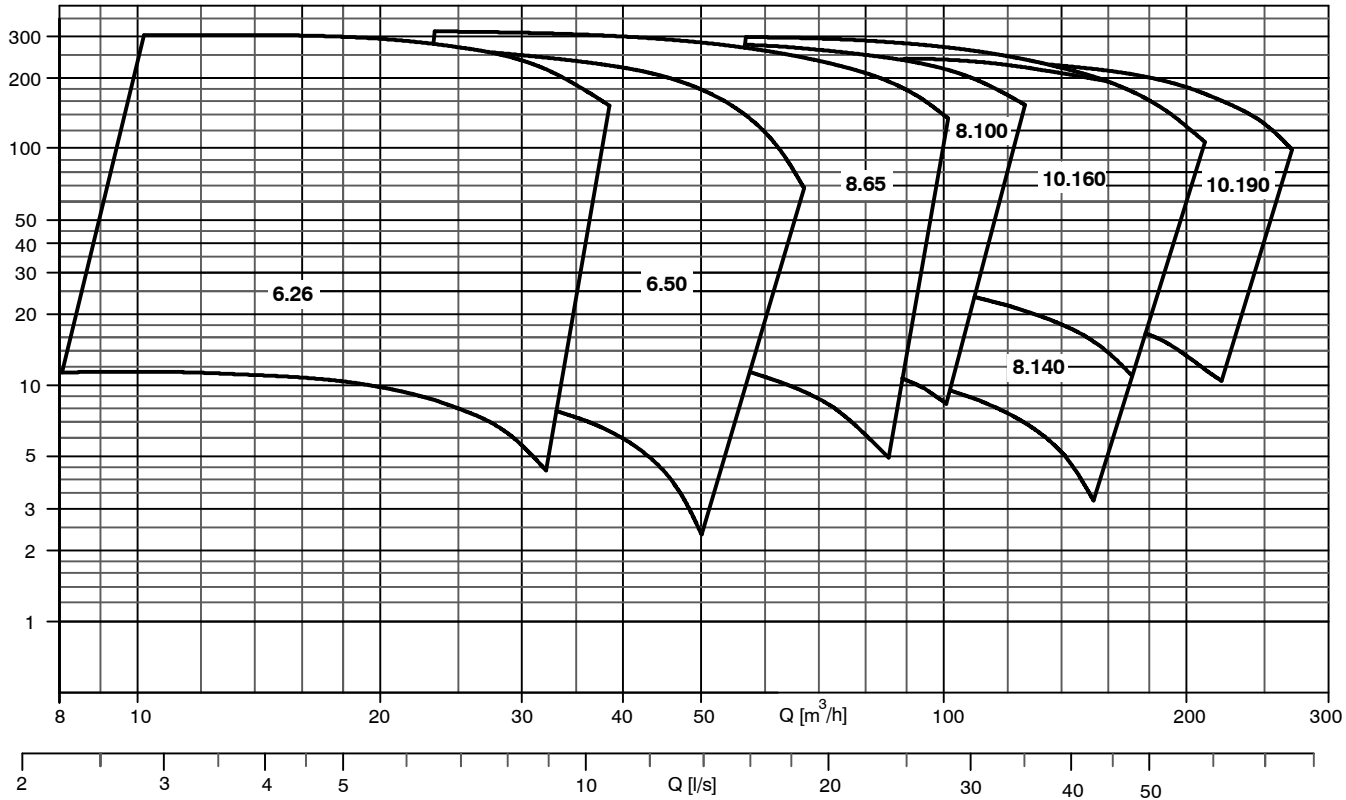
Performance chart - 1450 rpm, 50 Hz

H [m]



Performance chart - 2900 rpm, 50 Hz

H [m]



Materials

Part description	Variant C00	Variant C01
Motor stool	JL1040 (1) / GJL-250	JL1040 (1) / GJL-250
Discharge elbow	JL1040 (1) / GJL-250	JL1040 (1) / GJL-250
Column pipe	Steel S235 JRG2	Steel S235 JRG2
Drive shaft, transmission shaft, pump shaft	1.4021	1.4021
Coupling sleeve with gears	1.0718+C / 11SMnPb30	1.0718+C / 11SMnPb30
Shaft protecting sleeve	1.4404	1.4404
Bearing bush	Althan (NBR)	Althan (NBR)
Pump bowl, suction and discharge casing, drive bearing, valve parts	JL1040 (1) / GJL-250	JL1040 (1) / GJL-250
Impeller	JL1040 (1) / GJL-250	Bronze CuSn10
Tapered locking sleeve	C35E	C35E
Casing wear ring	Bronze CuSn8	Bronze CuSn8
Suction strainer	Galvanised steel	Galvanised steel
Nuts and bolts above discharge elbow	Stainless steel A4	Stainless steel A4
Nuts and bolts at discharge elbow, column pipe and casing	Stainless steel A4	Stainless steel A4

1) - To EN 1561

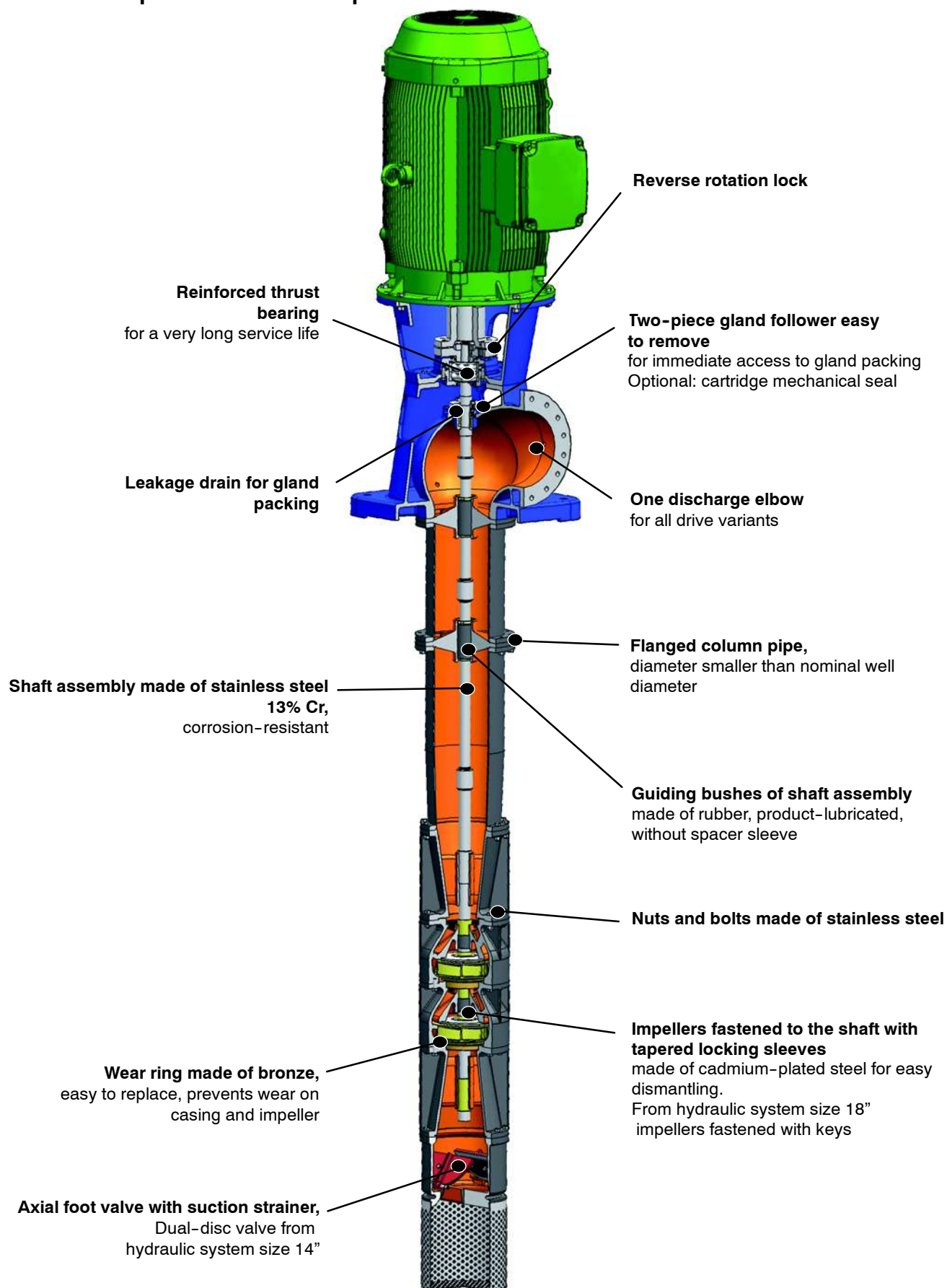
Special variants:

- ATEX version ExII2G T1 - T5
- Variant with cartridge mechanical seal on request
- Column pipe shafts with sleeves
- Bearing bushes made of bronze or PTFE
- For fluids other than water, or fluids with a solids content exceeding 50 g/m³, other material variants may be offered.
- ACS approval (French drinking water regulations)
- Discharge elbow below the sole plate
- Speed control on request
- Bearing with external lubrication
- Thrust bearing with temperature sensor

Paint coat

- Above the sole plate: acrylic blue RAL 5002
- Below the sole plate and inside the elbow: bituminous anti-corrosive coating, black RAL 9005
- Special variant: coating for marine applications

Vertical Deep-well Turbine Pumps



Subject to technical modification without prior notice.

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02/2011

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