

Grey Water and Condensate Pump

Rotex

Type Series Booklet



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Type Series Booklet Rotex

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Drainage Pumps / Grey Water Pumps

Grey Water Pumps / Condensate Pumps

Rotex



Main applications

- Disposal
- Heating systems
- Drainage systems
- Draining of pits, shafts, etc.

Fluids handled

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

Operating data

Table 1: Operating properties

Characteristic		Value	
		Rotex 10, 20	Rotex 70
Flow rate	Q [m³/h]	≤ 24	
	Q [l/s]	≤ 6,67	
Head	H [m]	≤ 14	
Fluid temperature	T [°C]	≤ +90	≤ +70

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

- Vertical installation

Drive

- Surface-cooled three-phase motor
- Enclosure IP55
- AC motor
- IP54 enclosure

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
- Grease-packed deep groove ball bearings sealed for life

Automation

- Level control
- Pump started/ stopped automatically depending on the fluid level

Rotex 10, 20:

- Displacement weight with cable pull float switch control

Rotex 70:

- Float switch

Designation

Example: Rotex 10 / 100 D

Table 2: Designation key

Code	Description	
Rotex	Type series	
10	Size	
	10	- Heavy-duty design Rp 1 1/4, Rp 2 - Two-channel impeller - Level control with displacement weight
	20	- Heavy-duty design Rp 2 - Three-channel impeller - Level control with displacement weight
	70 ¹⁾	- 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

Materials

Table 3: Overview of available materials

Part No.	Description	Material	
		Rotex 10, 20	Rotex 70
107	Discharge casing	Grey cast iron	-
102	Volute casing	-	Grey cast iron
211	Pump shaft (installation depth 100 cm)	Steel	Steel
	Pump shaft (installation depth 170 cm)	Chrome steel	-
182	Pump foot	-	Grey cast iron
230	Impeller	Grey cast iron	Polyamide
350	Bearing housing	Grey cast iron	-
545.1/.2	Bearing bush	Sinter bronze, steel-PTFE / CuSn	
712.1/.2	Pipe	Steel	
723	Flange	-	Grey cast iron
502	Casing wear ring	Bronze	-

¹ Rotex size 70 cannot be used for condensate.

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

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

Table 4: Overview

Label	Effective in:
 Bauart geprüft und überwacht www.tuv.com ID 1111220216	Europe

Product information

Product information as per Regulation No. 1907/2006 (REACH)

For information as per European chemicals regulation (EC) No. 1907/2006 (REACH) see <https://www.ksb.com/en-global/company/corporate-responsibility/reach>.

Technical data

Rotex 10, 20, 70

Table 5: Technical data

Size	Installation depth [cm]	Connection	P ₂ [kW]	I _N		Mat. No.	[kg]
				1~230 V	3~400 V		
				[A]	[A]		
10/100 D	100	Rp 1 1/4	0,55	-	1,35	00529119	25
10/100 E	100	Rp 1 1/4	0,55	3,6	-	00529129	26
10/170 D	170	Rp 1 1/4	0,55	-	1,35	00529118	34
10/170 E	170	Rp 1 1/4	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 1 1/4	0,37	-	1,0	29101099	16
70 E	100	Rp 1 1/4	0,37	2,8	-	29101100	17

Characteristic curves

Rotex 10, 20, 70; $n = 2900 \text{ rpm}$

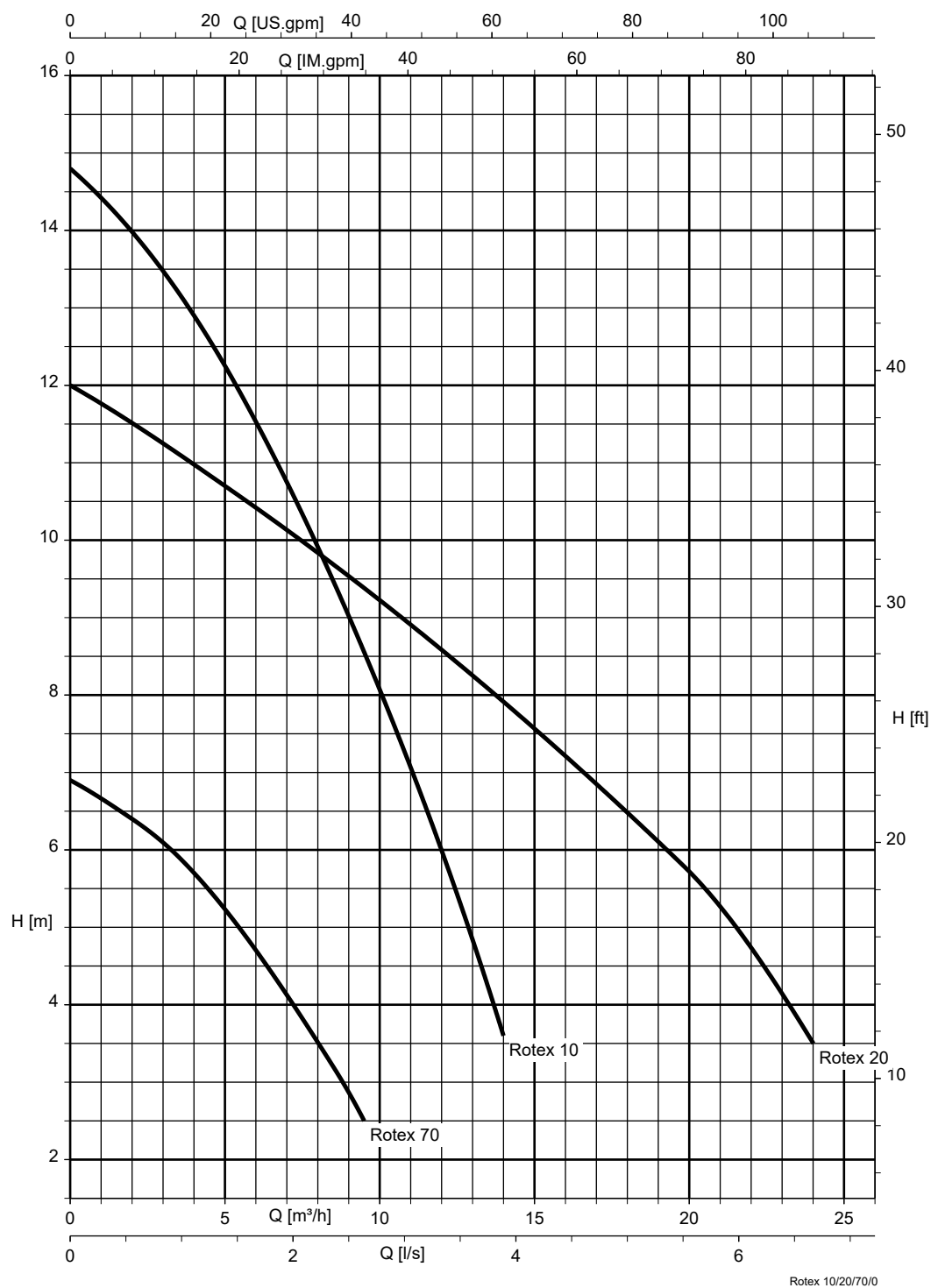


Fig. 1: Free passage: Rotex 10 = 10 mm; Rotex 20 = 13 mm; Rotex 70 = 18 mm

Dimensions

Rotex 10, 20, 70

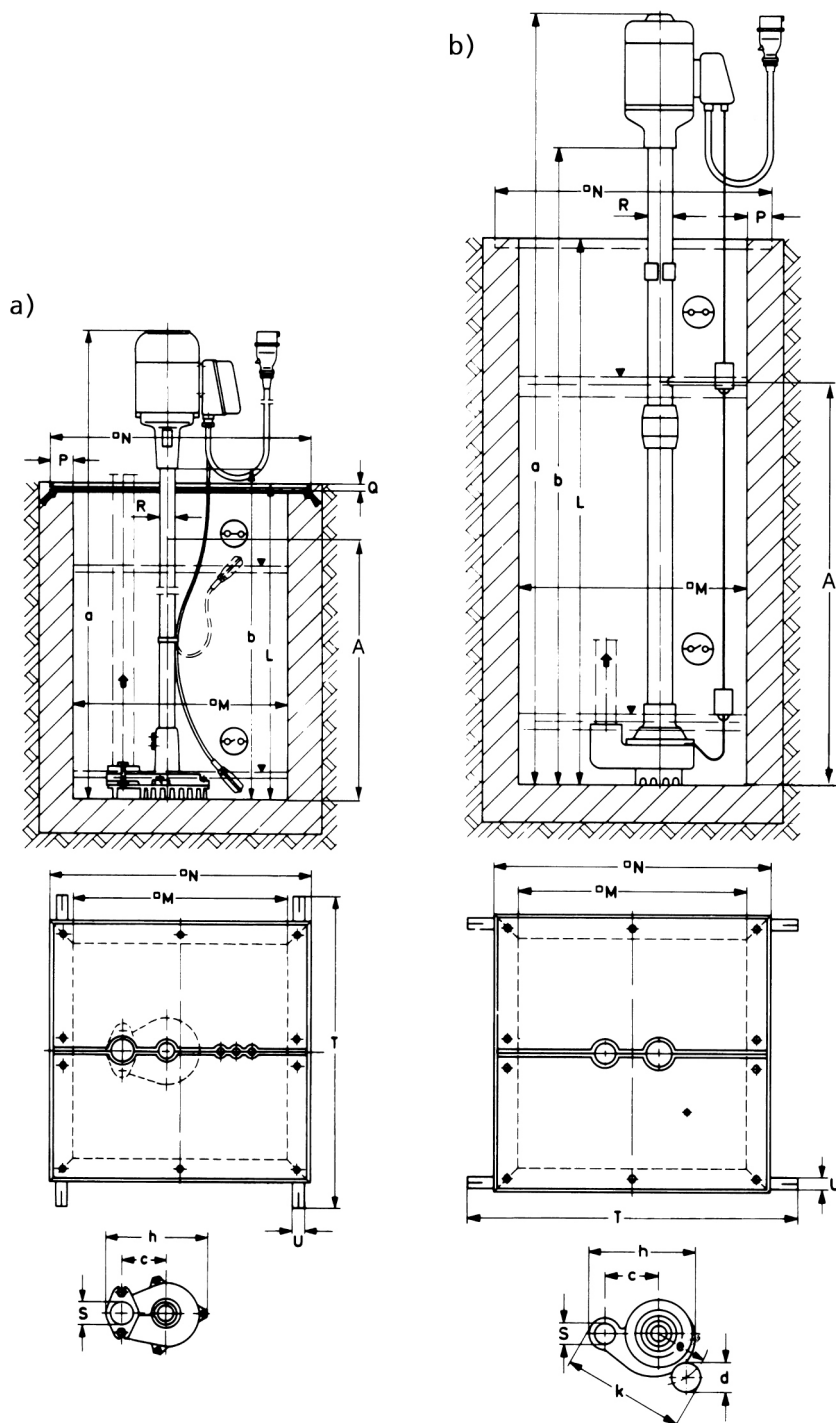


Fig. 2: Dimensions a) Rotex 70 b) Rotex 10, 20

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

Table 6: Dimensions

Size	 ISO 7/1	a	b	c	d	e	h	k	A	L	M	N	P	Q	R	T	V
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
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

Table 7: Pump accessories

	Item	Description	Connection	Rotex			Mat. No.	[kg]
				10	20	70		
	P10	RK swing check valve plastic, EN 12050-4, with internal thread ISO 7/1, full bore and drain plug; cannot be used for pumped drainage	Rp 1 1/4	✗	-	✗	01009771	0,1
			Rp 2	-	✗	-	01009773	0,5
		Swing check valve ISO 7/1, made of gunmetal (225 °C max.)	Rp 2	-	✗	-	00430260	2,5
	P11	Socket gate valve, CuZn, PN 10-12 DIN 3352 With internal thread / internal thread and full bore	Rp 1 1/4	✗	-	✗	01014219	0,627
			Rp 2	-	✗	-	00411503	1,287
	P18	Cover plate Tread-proof, split, with profile seals and angle iron mounting frame (type A 560) for 500 x 500 mm pits (For dual-pump stations with Y-pipe 2 cover plates are fitted next to each other.)	Rp 1 1/4	-	-	✗	18075627	13

Alarm switchgears for pumps, non-ATEX-compliant

Table 8: AS 0/AS 1/AS 2/AS 4/AS 5

Item	Description	Mat. No.	[kg]
E50	Alarm switchgear AS 0 With circuit breaker, acoustic signalling device with 85 dB(A), green equipment-on lamp Plastic housing, IP20, H x W x D = 140 x 80 x 57 [mm]. Use float switch, F1 leakage 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 signalling device with 85 dB(A), green equipment-on lamp, volt-free contact for hook-up to a control station Plastic housing, IP20, H x W x D = 140 x 80 x 57 [mm]. Use float switch, F1 leakage sensor (item E64) or signal relay of control unit as contactor.	29128422	0,5
E52	Alarm switchgear AS 4 With circuit breaker, acoustic signalling device 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, H x W x D = 140 x 80 x 57 [mm]. Use float switch (E60), F1 leakage 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, acknowledgement button, volt-free contact for hook-up to a control station, ready for connection with 1.8 m power cable and plug. ISO housing, IP41, H x W x D = 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 signalling device 70 dB(A) with circuit breaker and integrated signal transmitter with 3-metre power cable, max. 60 °C, not suitable for steam and condensate. 1. High water alert by suspending the sensor in a (pump) sump above the pump start-up point. 2. Water alert signal at a water level of only 1 mm by placing the sensor on the floor in areas with a flooding or leakage risk, e.g. the cellar or next to the washing machine in the kitchen or bathroom.	00533740	0,9

Control unit/switchgear accessories

Table 9: 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, IP65, for easier installation of alarm strobe light, for wall mounting	01061067	0,2
	Horn, 12 V DC, 105 dB, 150 mA, IP54	01086547	0,1
	Alarm combination (yellow lamp and piezo buzzer 92 dB), 12 V DC, 120 mA, IP65	01139930	0,1

Table 10: Control unit/switchgear accessories  Valid only for Rotex 70.

	Item	Description	Length	Mat. No.	[kg]
			[m]		
	E60	Float switch with free cable end Function: circuit closed in upper float position (normally open contact) Float switch housing: polypropylene Fluid temperature: max. 70 °C Power cable: H07RN-F3G1	5	11037743	0,8
			10	11037744	1,3
			20	11037746	2,4

Exploded views with list of components

Rotex 10, 20

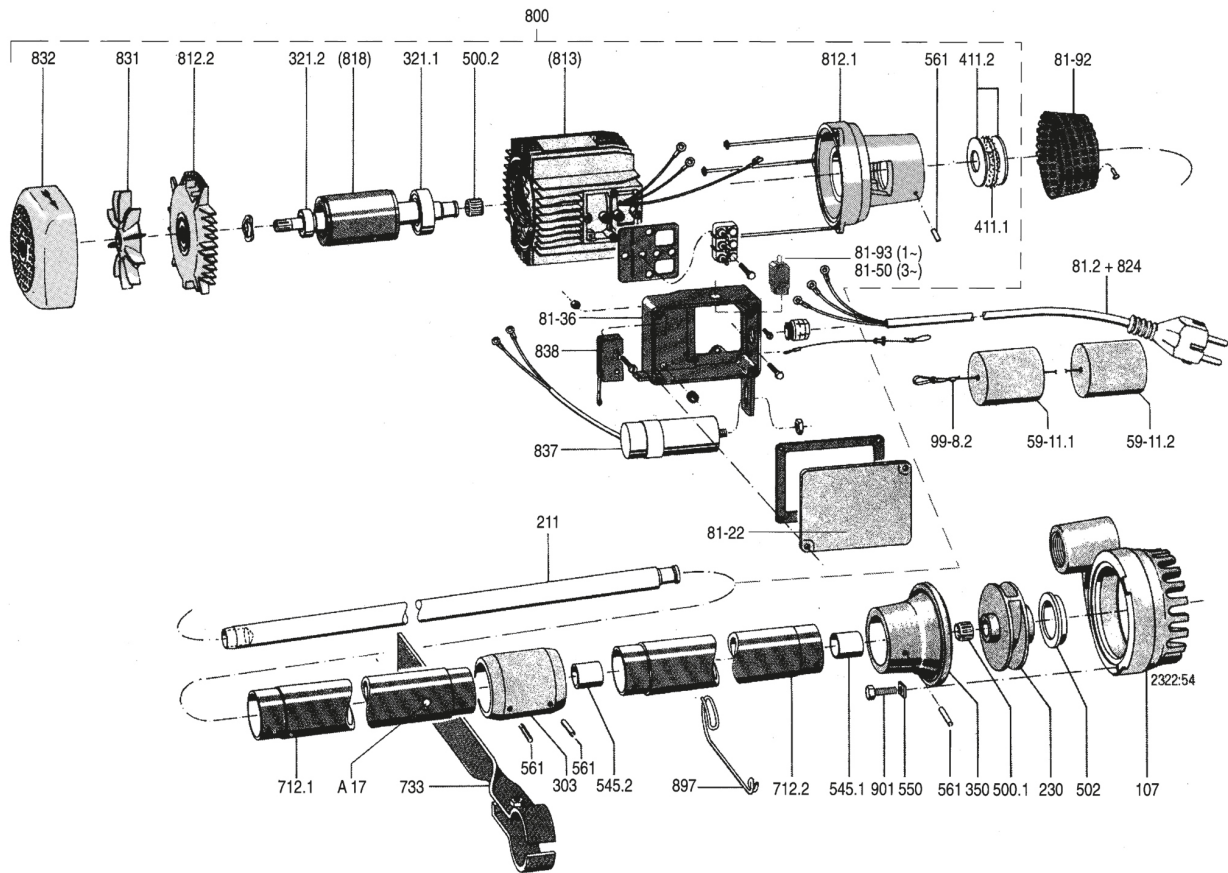


Fig. 3: Exploded view - Rotex 10, 20 () = Not available as a separate spare part

Table 11: 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	Contactor
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

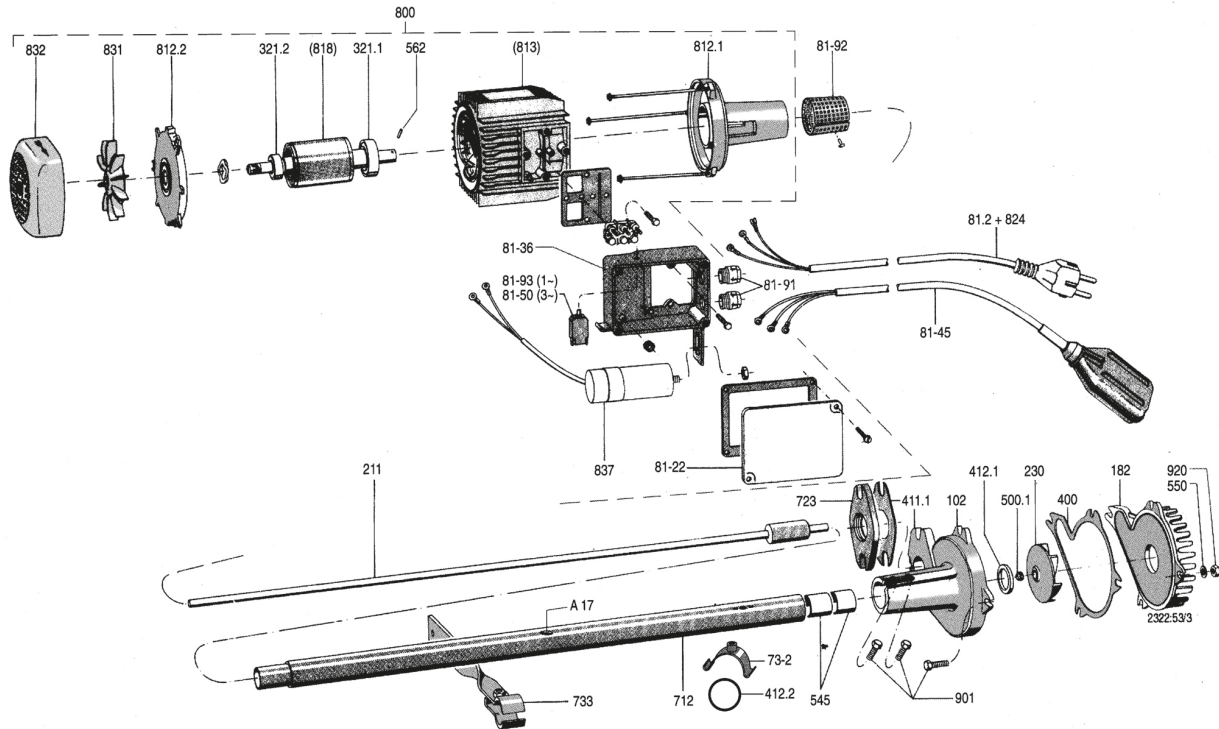


Fig. 4: Exploded view - Rotex 70 () = Not available as a separate spare part

Table 12: 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 columnn	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		



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