Waste Water, Condensate and Heat Transfer Fluid Pump

MK

Type Series Booklet

Legal information/Copyright

Type Series Booklet MK

Contents

Drainage Pumps / Waste Water Pumps

Waste Water Pumps / Condensate Pumps / Heat Transfer Fluid Pumps

MK

Main applications

MK, MKA:

- Automatic drainage of rooms at risk of flooding
- Drainage of collecting basins or pits
- Condensate return from non-pressurised tanks

MKY:

- Condensate return systems
- Heating systems
- Heat transfer systems

Fluids handled

MK, MKA:

- Grey water
- Oil
- Emulsions
- Aggressive fluids
- Condensate

MKY:

- Condensate
- Heat transfer fluids below boiling point

Operating data

Operating properties

Characteristic		Value	
		MK, MKA	MKY
Flow rate	Q [m³/h]	2 - 36	
	Q [l/s]	0,56 - 10	
Head	H [m]	≤ 19	
Fluid temperature	T [°C]	≥ -10	
		≤ +90 [1]	≤ +200 [2]

Design details

Design

- Volute casing
- Vertical installation
- Rigid connection between pump and motor
- Single-stage

Drive

- KSB surface-cooled IEC three-phase current squirrel-cage motor
- 230/400 V
- Type of construction IM V1
- Enclosure IP55
- Motors integrated in explosion-proof pump sets are supplied in Ex eb IIB / Ex db eb IIC type of protection.

Shaft seal

MK, MKA:

- Vapour barrier

MKY:

- Gland packing

Impeller type

- Three-channel impeller

Bearings

Drive end:

- Radial ball bearing
- Greased for life

Impeller end:

- Bearing bush
- Product-lubricated
- Optional:
  - Internal lubrication by fluid handled
  - Grease lubrication
  - Lubrication by external fluid

1) For versions with a bearing bush made of acrylonitrile butadiene rubber: up to 80 °C or temperature class T5 in acc. with ISO 80079-36 (EN 13463-1)
2) For water up to 110 °C

Explosion protection

MK, MKA:

- Available
- For explosion-proof variants one of the optional lubrication types must be used for the bearing bush.

MKY:

- Not available

Designation

MK A - B 20 - 1/ 100

Designation key

Code	Description	
MK	Type series	
A	Variant	
	-[3)]	Pump without discharge pipe, without cover plate, with motor
	A	Pump with square mounting/cover plate and discharge pipe, with flange-mounted motor
	Y	Pump with round mounting/cover plate and flanged discharge pipe, lantern, gland packing and motor
B	Casing material	
		Grey cast iron
	B	Tin bronze
	C	Chrome nickel molybdenum cast steel
2	Pipe connection	
	2	Rp 2
0	Design status	
1	Power code (defines the impeller diameter)	
	1 - 6	
100	Installation depth [cm]	
	100, 190, 280	

Materials

Overview of available materials

Description	Design			
	MK, MKA	MK-B, MKA-B	MK-C, MKA-C	MKY
Casing/impeller	Grey cast iron	Tin bronze	Chrome nickel molybdenum cast steel	Grey cast iron
Shaft/coupling	Chrome steel	Chrome nickel molybdenum steel	Chrome nickel molybdenum steel	Chrome steel
Discharge pipe	Galvanised steel	Chrome nickel molybdenum steel	Chrome nickel molybdenum steel	Steel

Product benefits

- Fitted with a three-channel impeller for fluids containing solids of up to 18 mm
- Rod-actuated float switch for high temperatures and viscous fluids
- Flexible with support column for variable installation depths
- Integrated suction strainer prevents clogging.
- Durable with robust deep groove ball bearings

Product information

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

For information as per chemicals Regulation (EC) No 1907/2006 (REACH), see http://www.ksb.com/reach.

3) Blank

Selection tables

Symbols key

Symbol	Description
✗	Standard
■	On request
-	Not available

Bearing bush depending on the type series

Type series	Bearing bush							
	Steel/ polytetrafluoroethylene	Tin bronze	Grey cast iron	Acrylonitrile butadiene rubber	Fluoroelastomer	Polytetrafluoroethylene, glass fibre reinforced	Carbon, phenolic resin impregnated	Carbon, antimony impregnated
MK, MKA	✗	■	■	■	■	-	-	-
MK-B, MKA-B	-	✗	-	■	■	■	■	-
MK-C, MKA-C	-	-	-	■	■	■	✗	-
MKY	-	-	-	■	■	-	-	✗

Bearing bush depending on material properties

Bearing bush	Gliding properties	Sand resistance	Dry running ability
Steel/polytetrafluoroethylene	Very good	Satisfactory	Good
Tin bronze	Good	Average	Poor
Grey cast iron	Average	Average	Low
Acrylonitrile butadiene rubber	Good	Good	Poor
Fluoroelastomer	Good	Good	Poor
Polytetrafluoroethylene, glass fibre reinforced	Good	Poor	Poor
Carbon, phenolic resin impregnated	Good	Poor	Low
Carbon, antimony impregnated	Good	Poor	Low

Lubrication options depending on the bearing bush

Bearing bush	Internal lubrication by fluid handled	Lubrication by external fluid	Grease lubrication
Steel/polytetrafluoroethylene	✗	-	-
Tin bronze	✗	✗	✗
Grey cast iron	✗	✗	✗
Acrylonitrile butadiene rubber	✗	✗	-
Fluoroelastomer	✗	✗	-
Polytetrafluoroethylene, glass fibre reinforced	✗	-	-
Carbon, phenolic resin impregnated	✗	-	-
Carbon, antimony impregnated	-	-	-

Technical data

MK, MKA variants without motor

Technical data

MK, MKA	MK		MKA	
	[kg]	Mat. No.	[kg]	Mat. No.
20-1/100	34	48247599	62	48247617
20-1/190	50	48247600	82	48247618
20-1/280	66	48247601	102	48247619
20-2/100	34	48247602	62	48247620
20-2/190	50	48247603	82	48247621
20-2/280	66	48247604	102	48247622
20-3/100	35	48247605	63	48247623
20-3/190	51	48247606	83	48247624
20-3/280	67	48247607	103	48247625
20-4/100	35	48247608	63	48247626
20-4/190	51	48247609	83	48247627
20-4/280	67	48247610	103	48247628
20-5/100	34	48247611	62	48247629
20-5/190	50	48247612	72	48247630
20-5/280	66	48247613	102	48247631
20-6/100	35	48247614	63	48247632
20-6/190	51	48247615	83	48247633
20-6/280	68	48247616	104	48247634

MK-B, MKA-B variants without motor

Technical data

MK-B, MKA-B	MK-B		MKA-B	
	[kg]	Mat. No.	[kg]	Mat. No.
20-1/100	40	48247635	71	48247653
20-1/190	58	48247636	94	48247654
20-1/280	76	48247637	116	48247655
20-2/100	40	48247638	71	48247656
20-2/190	58	48247639	94	48247657
20-2/280	76	48247640	116	48247658
20-3/100	41	48247641	72	48247659
20-3/190	59	48247642	95	48247660
20-3/280	77	48247643	117	48247661
20-4/100	41	48247644	72	48247662
20-4/190	59	48247645	95	48247663
20-4/280	77	48247646	117	48247664
20-5/100	40	48247647	71	48247665
20-5/190	58	48247648	94	48247666
20-5/280	76	48247649	116	48247667
20-6/100	41	48247650	68	48247668
20-6/190	59	48247651	91	48247669
20-6/280	79	48247652	113	48247670

MK-C, MKA-C variants without motor

Technical data

MK-C, MKA-C	MK-C		MKA-C	
	[kg]	Mat. No.	[kg]	Mat. No.
20-1/100	37	48247671	69	48247689
20-1/190	54	48247672	90	48247690
20-1/280	71	48247673	110	48247691
20-2/100	37	48247674	69	48247692

MK-C, MKA-C	MK-C		MKA-C	
	[kg]	Mat. No.	[kg]	Mat. No.
20-2/190	54	48247675	90	48247693
20-2/280	71	48247676	110	48247694
20-3/100	37	48247677	67	48247695
20-3/190	54	48247678	89	48247696
20-3/280	72	48247679	111	48247697
20-4/100	37	48247680	67	48247698
20-4/190	54	48247681	89	48247699
20-4/280	72	48247682	111	48247700
20-5/100	37	48247683	67	48247701
20-5/190	54	48247684	88	48247702
20-5/280	71	48247685	110	48247703
20-6/100	38	48247686	68	48247704
20-6/190	55	48247687	89	48247705
20-6/280	73	48247688	111	48247706

MKY variant without motor

Technical data

MKY	[kg]	Mat. No.
20-1/100	72	48247707
20-1/190	92	48247708
20-1/280	112	48247709
20-2/100	72	48247710
20-2/190	92	48247711
20-2/280	112	48247712
20-3/100	73	48247713
20-3/190	93	48247714
20-3/280	113	48247715
20-4/100	72	48247716
20-4/190	92	48247717
20-4/280	112	48247718
20-5/100	73	48247719
20-5/190	93	48247720
20-5/280	114	48247721
20-6/100	71	48247722
20-6/190	91	48247723
20-6/280	112	48247724

Motors

Standard design V1, 400 V, 50 Hz, enclosure IP55

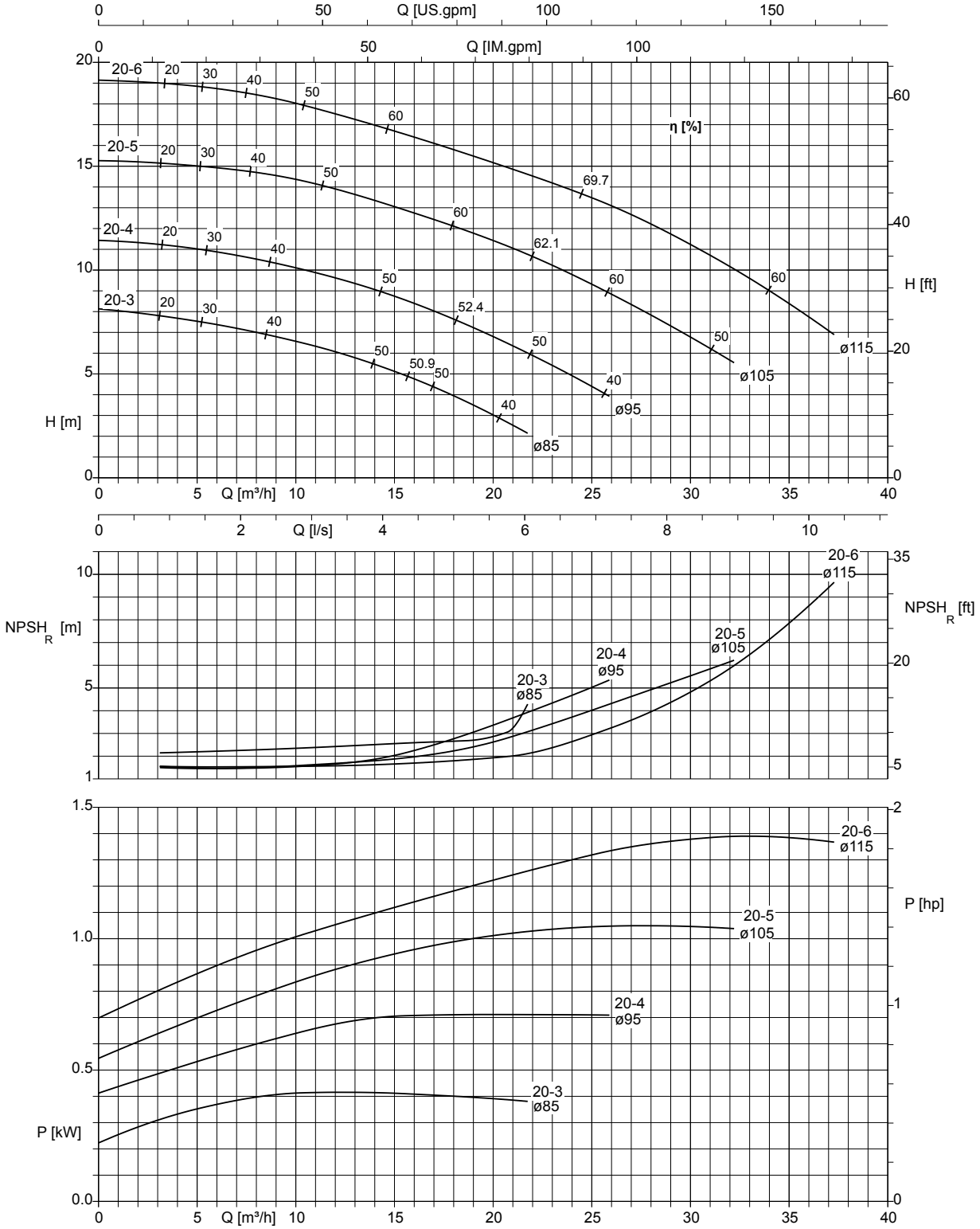
Size	Make	Number of poles	Efficiency class	P_2	I	Mat. No.	[kg]
				[kW]	[A]		
80M		4	IE1	0,55	1,5	01053394	9
80M		4	IE1	0,55	1,5	01036172	9
80M	KSB's choice	4	IE3	0,75	1,66	01583978	15
80M		4	IE3	0,75	1,75	01470733	14
80M	KSB's choice	2	IE3	1,10	2,14	01583976	14
80M		2	IE3	1,10	2,25	01470731	12
90S	KSB's choice	2	IE3	1,50	2,85	01583977	18
90S		2	IE3	1,50	3,00	01470732	15
90L	KSB's choice	2	IE3	2,20	3,99	01583981	21
90L		2	IE3	2,20	4,20	01470770	19

Motors for operation in potentially explosive atmospheres can also be ordered from KSB.

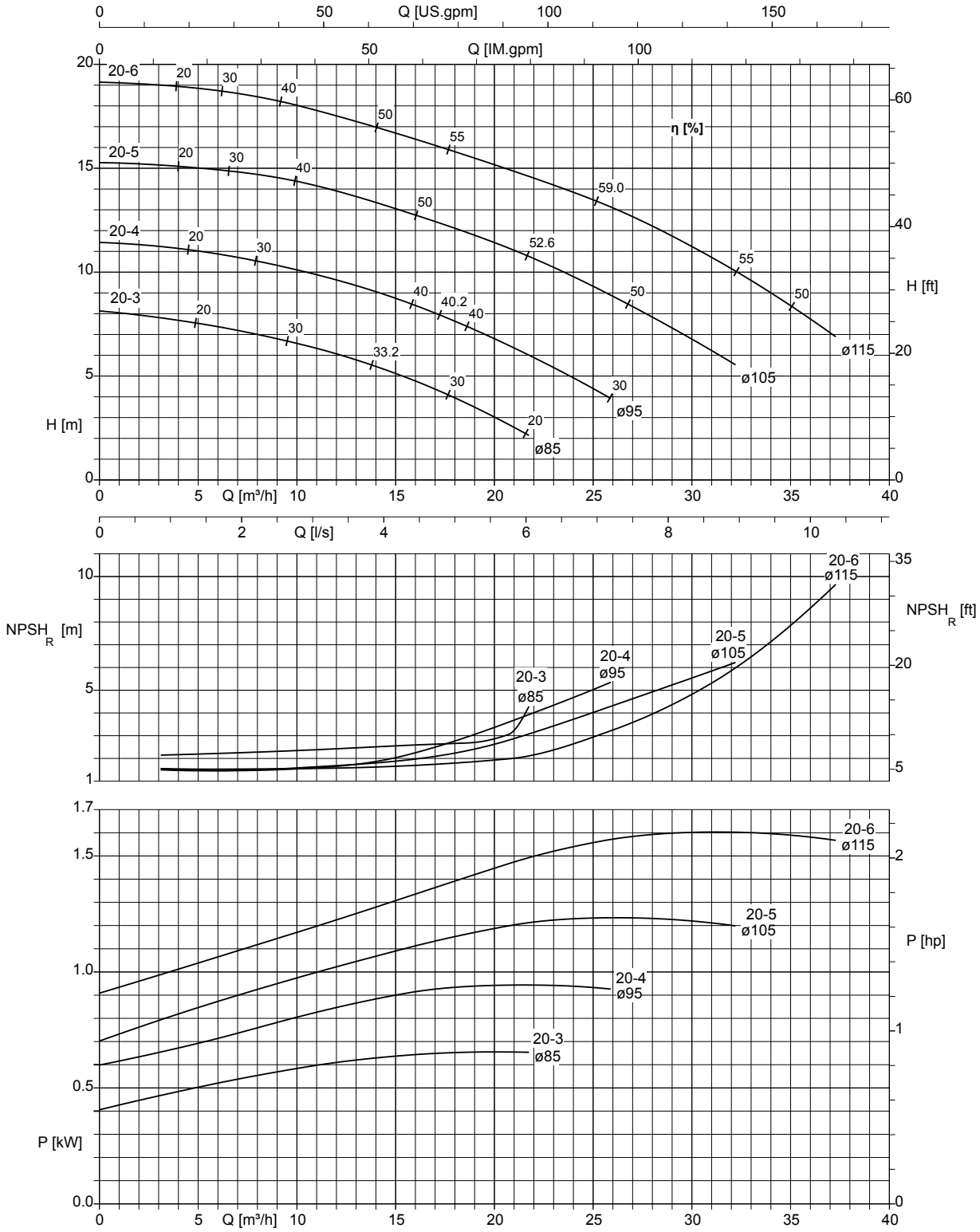
Characteristic curves

n = 2900 rpm

MK/MKA 20-3, 20-4, 20-5, 20-6; n = 2900 rpm

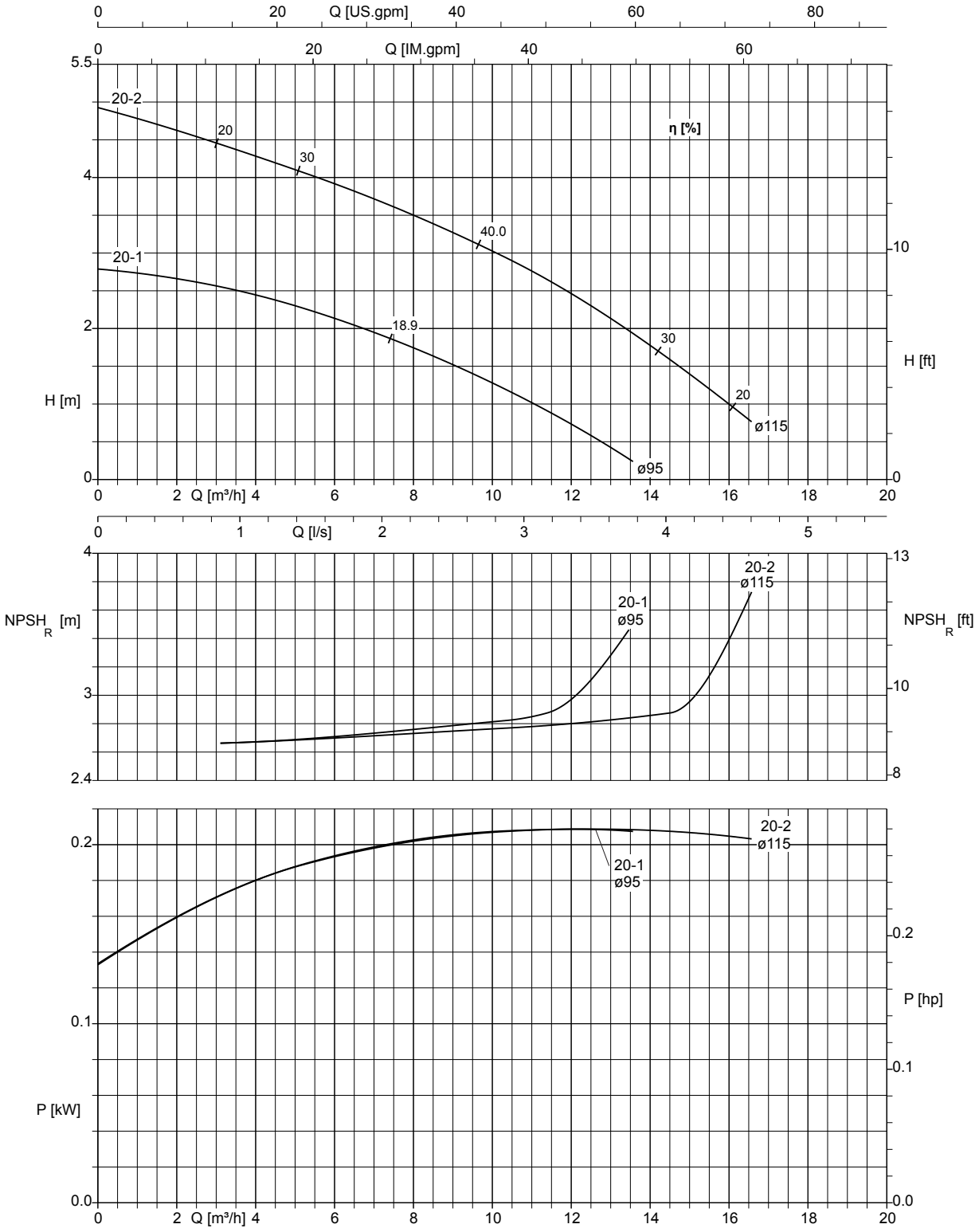


MKY 20-3, 20-4, 20-5, 20-6; n = 2900 rpm

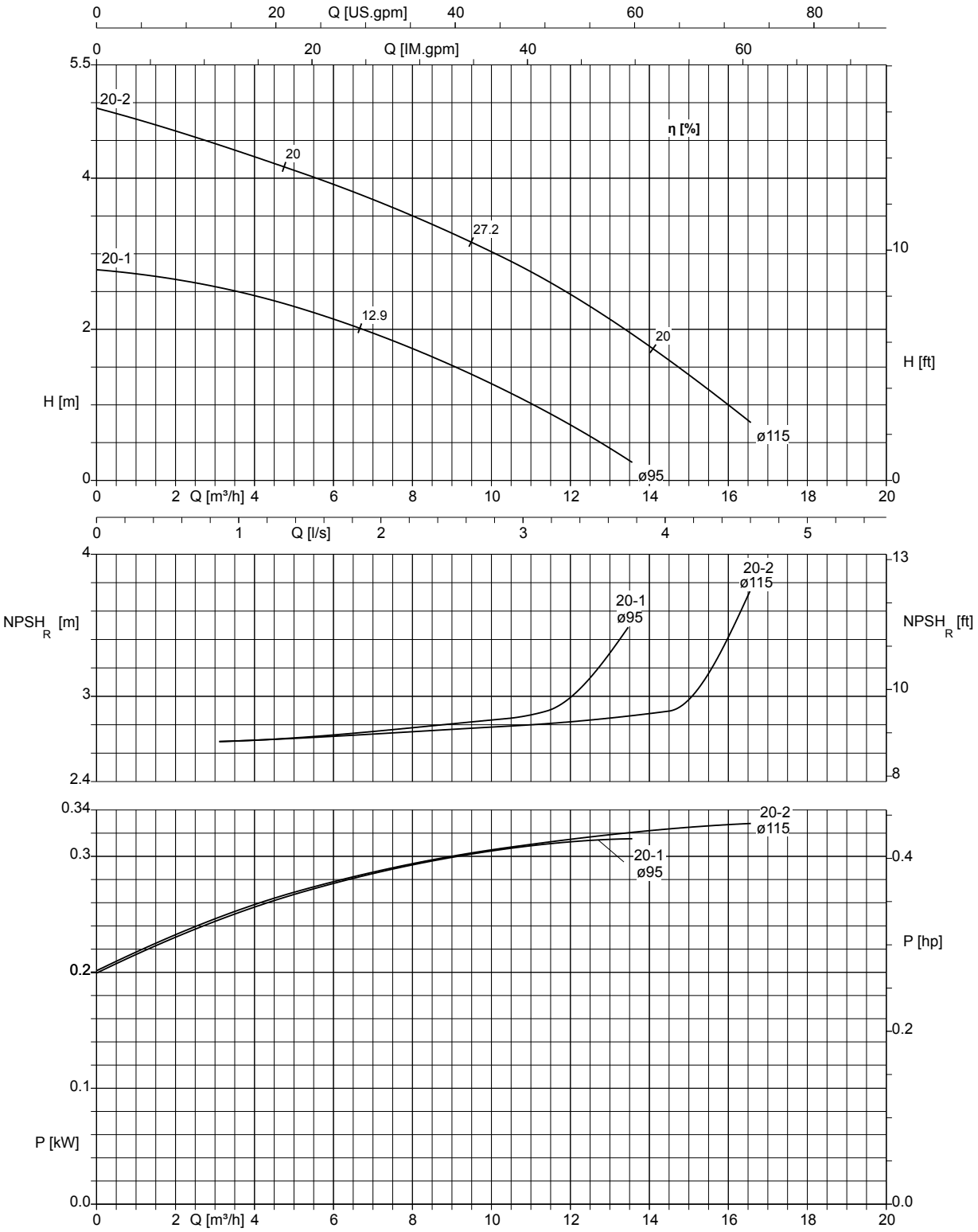


n = 1450 rpm

MK/MKA 20-1, 20-2; n = 1450 rpm



MKY 20-1, 20-2; n = 1450 rpm



Dimensions

MK/MKA

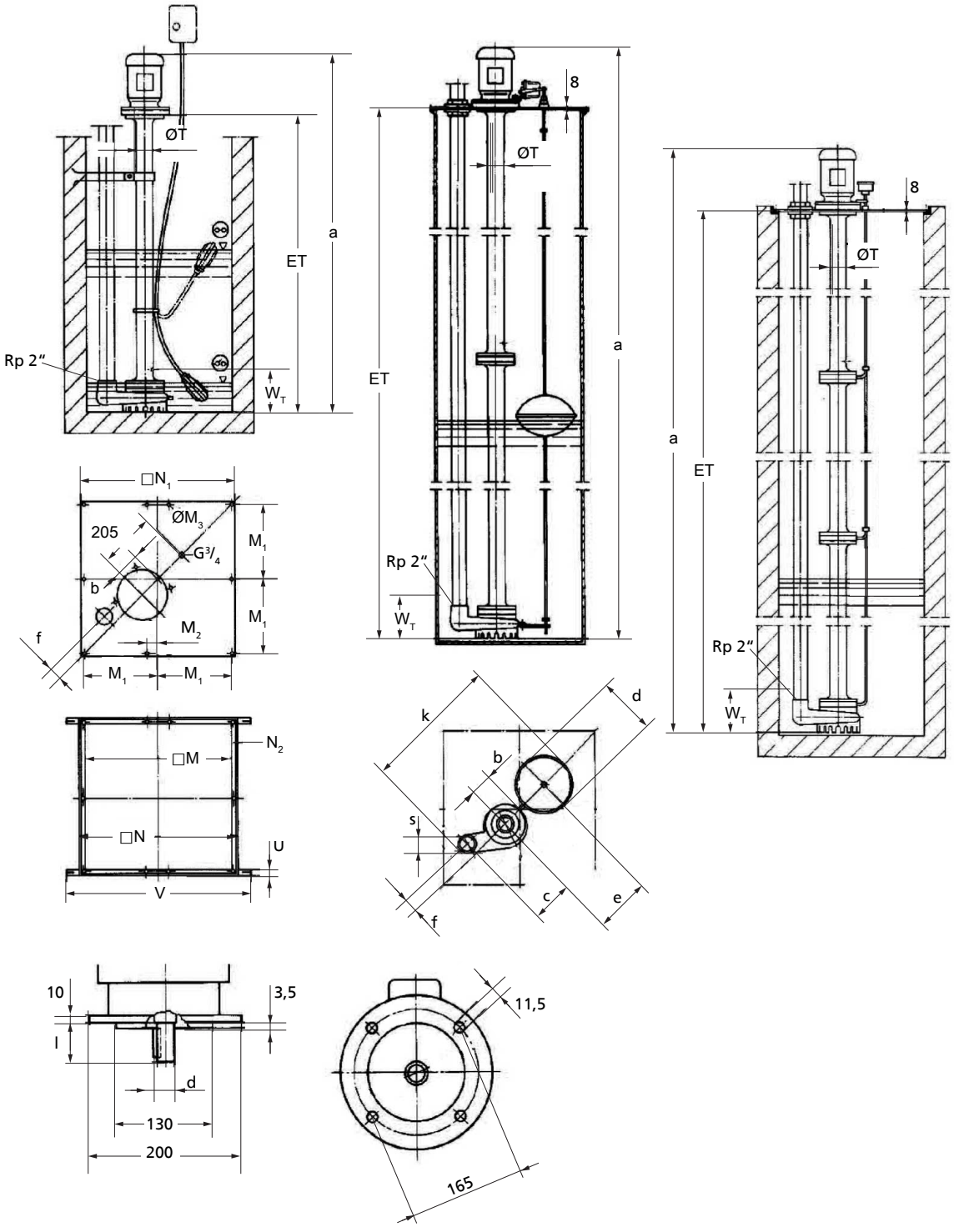


Fig. 1: Dimensions

ET	Installation depth
W_T	Minimum level of fluid handled

Dimensions [mm]

MK / MKA	ET	W_T	a	b	c	d	e	f	k	□M	M_1	M_2	ØM_3	□N	□N_1	N_2	O	S	ØT	U	V
20-/100	1004	110	1271	65	155	240	205	46	520	500	263	33	10	560	550	30×20×4	8	65	71	20	660
20-/190	1911	110	2178	65	155	240	205	46	520	500	263	33	10	560	550	30×20×4	8	65	71	20	660
20-/280	2818	110	3085	65	155	240	205	46	520	500	263	33	10	560	550	30×20×4	8	65	71	20	660

Dimensions of the shaft stub from the motor [mm]

Motor	d	l
80	19	40
90 L	24	50
90 S	24	50

MKY

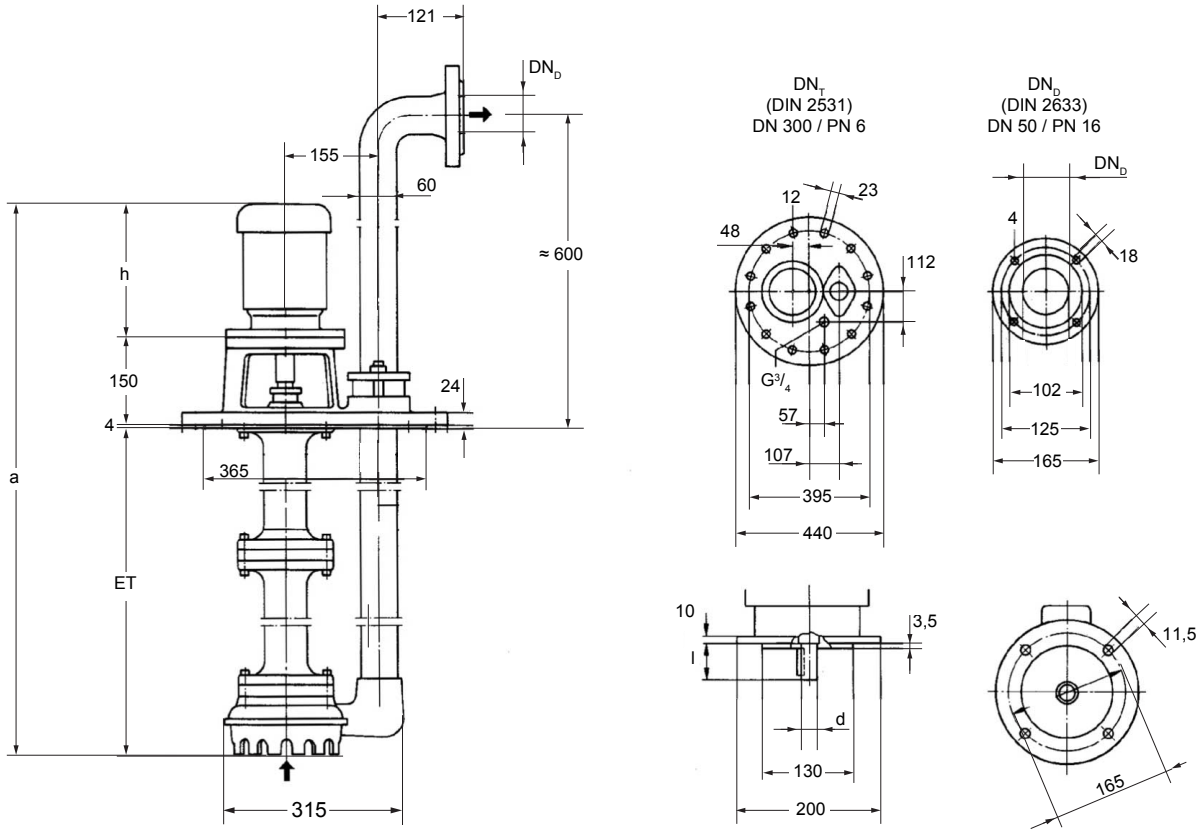


Fig. 2: Dimensions

ET	Installation depth

Dimensions [mm]

MKY	ET	a[4)]	h[4)]
20-1 - 4/100	1000	1381	227
20-1 - 4/190	1907	2288	227
20-1 - 4/280	2814	3195	227
20-5/100	1000	1397	243
20-5/190	1907	2304	243
20-5/280	2814	3211	243
20-6/100	1000	1422	268
20-6/190	1907	2399	268
20-6/280	2814	3236	268

4) Dimension depends on the motor make

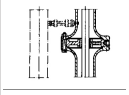
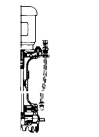
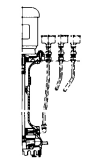
Dimensions of the shaft stub from the motor [mm]

Motor	d	l
80	19	40
90 L	24	50
90 S	24	50

Accessories

Lubrication equipment (optional)

Technical data (⇨ Page 6)

	Description	MK, MKA, MKY				[kg]
		MK	MKA	MKY	...	
	Internal lubrication by fluid handled	-	-	-	20-/100	-
		✘	✘	-	20-/190	0,3
		✘	✘	-	20-/280	0,3
	Lubrication by external fluid	✘	✘	-	20-/100	0,5
		✘	✘	-	20-/190	0,6
		✘	✘	-	20-/280	0,7
	Grease lubrication device	✘	✘	-	20-/100	0,8
		✘	✘	-	20-/190	0,9
		✘	✘	-	20-/280	1

Pump accessories

Technical data

	Item	Description	Connection	Mat. No.	[kg]
	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 2	01009773	0,5
	P10	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 port	Rp 2	00411503	1,287

Float switch

Technical data

Item	Description	Type	MK			MKA			MKY			Mat. No.	[kg]
			20- /100	20- /190	20- /280	20- /100	20- /190	20- /280	20- /100	20- /190	20- /280		
E1	Magnetic float switch arrangement	MS 100	✘	-	-	✘	-	-	✘	-	-	11178906	0,8
		MSA 100	✘	-	-	✘	-	-	✘	-	-	11178907	0,8
		MS 190	-	✘	-	-	✘	-	-	✘	-	11178910	1,5
		MSA 190	-	✘	-	-	✘	-	-	✘	-	11178911	1,5
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	✘	✘	✘	✘	✘	✘	-	-	-	11037744	1,3
		20	✘	✘	✘	✘	✘	✘	-	-	-	11037746	2,4

Control units and switchgear

Technical data

Item	Description	Type	Motor, standard design					Mat. No.	[kg]
			P_N [kW]						
			0,55	0,75	1,10	1,50	2,20		
E5	Motor protection switchgear MSD	16.1	✗	-	-	-	-	19070114	1
		25.1	-	✗	-	-	-	19070115	1
		40.1	-	-	✗	✗	-	19070116	1
		60.1	-	-	-	-	✗	19070117	1
E11	Control unit for single-pump station LevelControl Basic 2	BC1 400 DFNO 016	✗	-	-	-	-	19073761	4,5
		BC1 400 DFNO 025	-	✗	-	-	-	19073762	4,5
		BC1 400 DFNO 040	-	-	✗	✗	-	19073763	4,5
		BC1 400 DFNO 063	-	-	-	-	✗	19073764	4,5
	LevelControl Basic 2 control unit for single-pump station Level control via float switches (Model with PTC data analysis relay)	BS1 400 DFNP 016	✗	-	-	-	-	5)	10
		BS1 400 DFNP 025	-	✗	-	-	-	5)	10
		BS1 400 DFNP 040	-	-	✗	✗	-	5)	10
		BS1 400 DFNP 063	-	-	-	-	✗	5)	10
E31	LevelControl Basic 2 control unit for dual-pump station	BC2 400 DFNO 016	✗	-	-	-	-	19073775	4,7
		BC2 400 DFNO 025	-	✗	-	-	-	19073776	4,7
		BC2 400 DFNO 040	-	-	✗	✗	-	19073777	4,7
		BC2 400 DFNO 063	-	-	-	-	✗	19073778	4,7
	LevelControl Basic 2 control unit for dual-pump station Level control via float switches (Model with PTC data analysis relay)	BS2 400 DFNP 016	✗	-	-	-	-	5)	14
		BS2 400 DFNP 025	-	✗	-	-	-	5)	14
		BS2 400 DFNP 040	-	-	✗	✗	-	5)	14
		BS2 400 DFNP 063	-	-	-	-	✗	5)	14

5) Variants must be processed via KSB EasySelect.

Alarm switchgears for pumps without ATEX

Only valid for MK/MKA/MKY 20-1/20-2/20-3/20-4/20-5/20-6!

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, H × W × D = 140 × 80 × 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 signal transmitter with 85 dB(A), green equipment-on lamp, volt-free contact for hook-up to a control station Plastic housing, IP20, H × W × D = 140 × 80 × 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 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, H × W × D = 140 × 80 × 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, horn-off pushbutton, 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 × W × D = 190 × 165 × 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-meter 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 alarm 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

LevelControl Basic 2

Technical data

Item	Description	Mat. No.	[kg]
O1	Master switch for LevelControl Basic 2 BC, fitted 3-pole, 20 A, lockable	01143084	0,2
O10	Outdoor cabinet type 142 with base, for type BC Internal dimensions H × W × D [mm]: 600 × 276 × 165	19071911	15
E90	Rechargeable battery retrofit kit for LevelControl Basic 2, BC Scope of supply: 2 rechargeable batteries (6 V, 1.3 Ah) and charging unit 2 nos. 6V, 1.3 Ah	19074194	0,8
O200	Signalling module for LevelControl Basic 2 BC	19075182	0,2

Control unit/switchgear accessories

Technical data

Item	Description	Type	Mat. No.	[kg]
E64	F1 leakage sensor As contactor for alarm switchgears AS 0, AS 2 or AS 4, with 3-metre power cable, max. 40 °C, not suitable for steam and condensate.		19072366	0,2
E70	Horn, 12 V DC, 105 dB, 150 mA, IP54		01086547	0,1
E71	Alarm combination (yellow alarm strobe light and piezo buzzer 92 dB), 12 V DC, 120 mA, IP65		01139930	0,1
E72	Yellow alarm strobe light, 12 V DC, 195 mA, IP65		01056355	0,3
O45	Plastic housing, IP65, for easier installation of alarm strobe light, for wall mounting		01061067	0,2

General assembly drawings/exploded views with list of components

MK, MKA

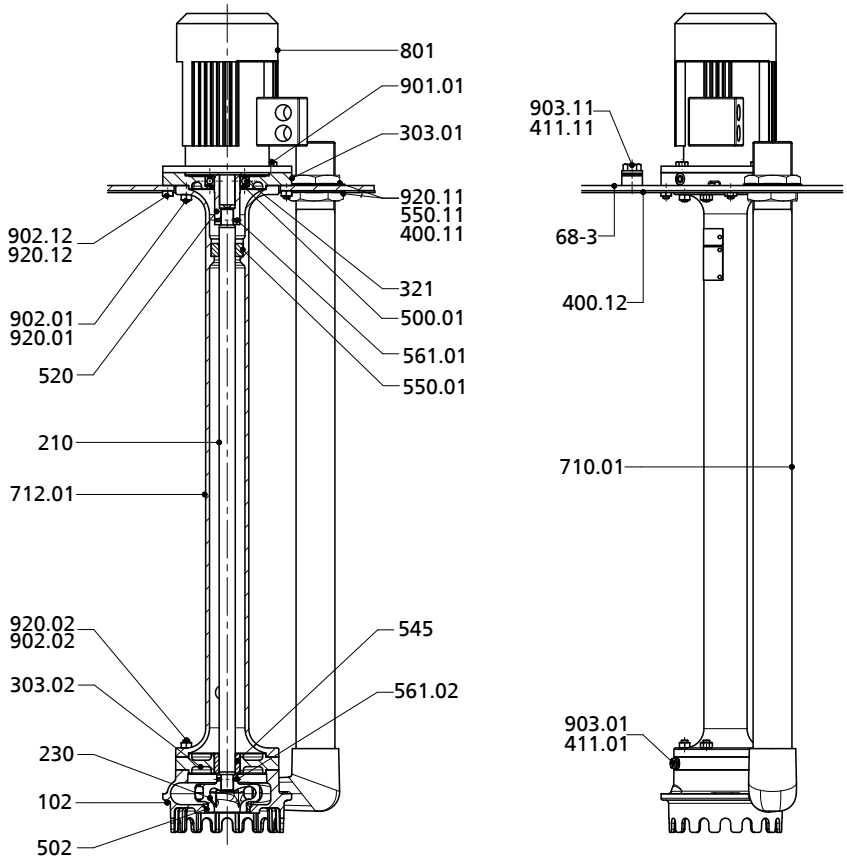


Fig. 3: Illustration of MK, MKA - installation depth 1000 mm

List of components

Part No.	Description	Part No.	Description
102	Volute casing	545	Bearing bush
210	Shaft	550.01/.11	Disc
230	Impeller	561.01/.02	Grooved pin
303.01	Thrust and radial bearing	68-3	Cover plate
303.02	Thrust and radial bearing without vertical hole	710.01	Pipe
321	Radial ball bearing	712.01	Support column without hole
400.11/.12	Gasket	801	Flanged motor
411.01/.11	Joint ring	901.01	Hexagon head bolt
500.01	Ring	902.01/.02/.12	Stud
502	Casing wear ring	903.01/.11	Screw plug
520	Sleeve	920.01/.02/.11/.12	Nut

MK, MKA - grease-lubricated

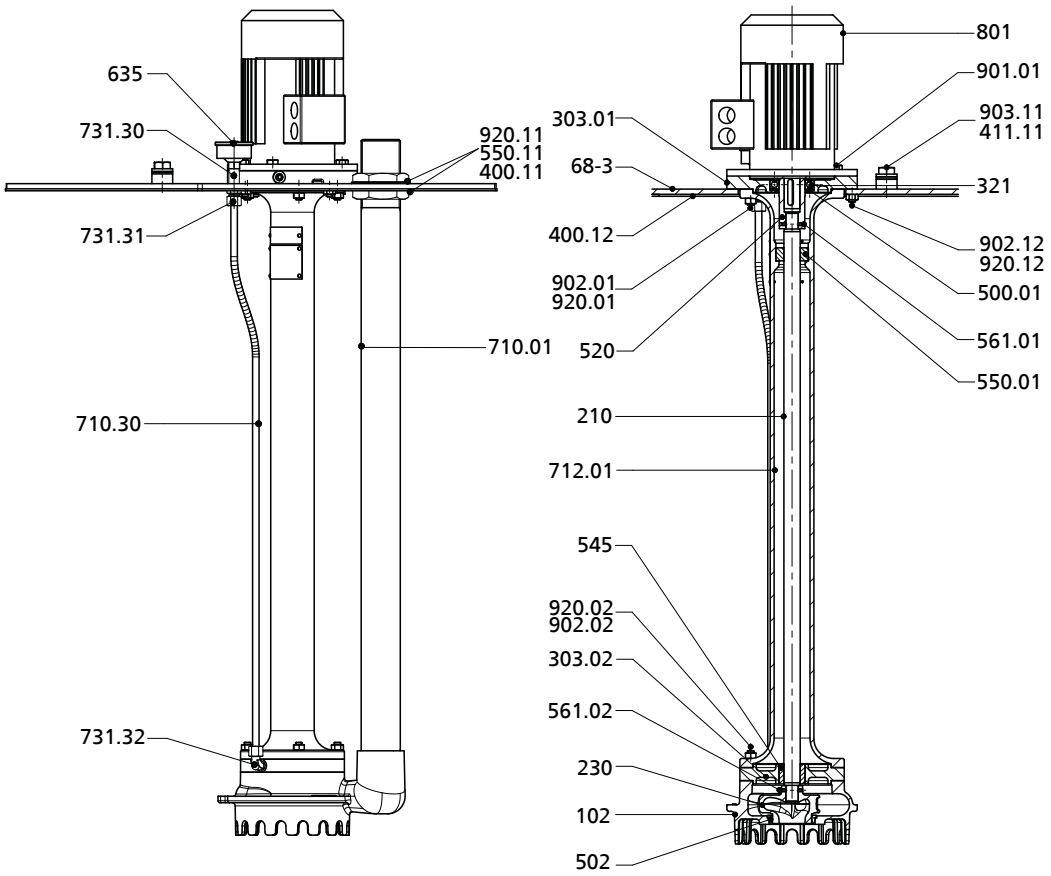


Fig. 4: Illustration of MK, MKA - installation depth 1000 mm, grease-lubricated

List of components

Part No.	Description	Part No.	Description
102	Volute casing	635	Grease cup
210	Shaft	68-3	Cover plate
230	Impeller	710.01	Pipe
303.01	Thrust and radial bearing	710.30	Pipe
303.02	Thrust and radial bearing without vertical hole	712.01[6)]	Support column without hole
321	Radial ball bearing	731.30/.31/.32	Pipe union
400.11/.12	Gasket	801	Flanged motor
411.11	Joint ring	81-39	Clamp
500.01	Ring	81-45	Float switch
502	Casing wear ring	901.01	Hexagon head bolt
520	Sleeve	902.01/.02/.12	Stud
545	Bearing bush	903.11	Screw plug
550.01/.11	Disc	920.01/.02/.11/.12	Nut
561.01/.02	Grooved pin		

6) Number of support columns 712 without hole, for installation depth ET: 1000 mm = 0; 1900 mm = 1; 2800 mm = 2

MK, MKA - internally lubricated by fluid handled

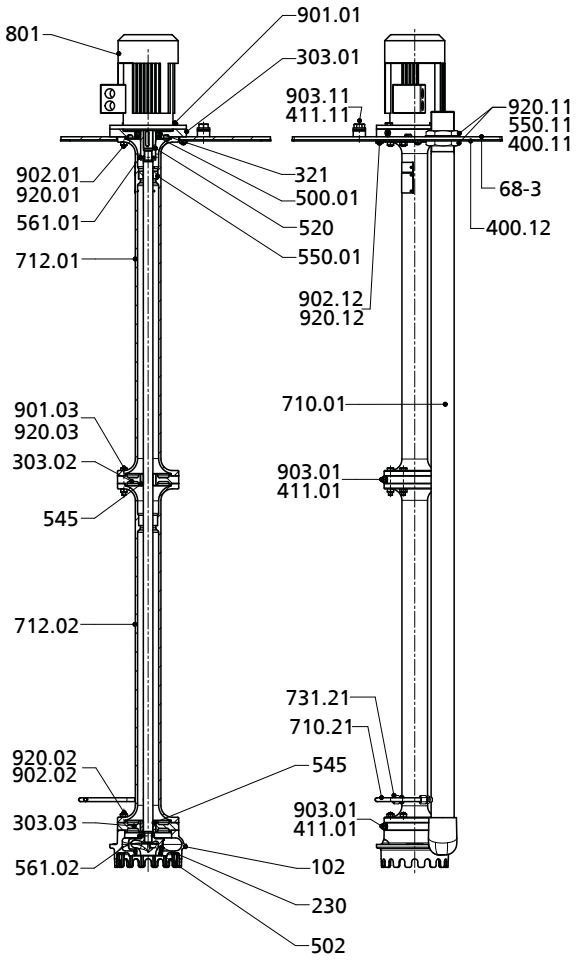


Fig. 5: Illustration of MK, MKA - installation depth 1900 mm, internally lubricated by fluid handled

List of components

Part No.	Description	Part No.	Description
102	Volute casing	561.01/.02	Grooved pin
230	Impeller	68-3	Cover plate
303.01	Thrust and radial bearing	710.01/.21	Pipe
303.02	Thrust and radial bearing without vertical hole	712.01/.02[7)]	Support column without hole
303.03	Thrust and radial bearing with vertical hole	731.21	Pipe union
321	Radial ball bearing	801	Flanged motor
400.11/.12	Gasket	900.46	Screw
411.01/.11	Joint ring	901.01/.03	Hexagon head bolt
500.01	Ring	902.01/.02/.12	Stud
502	Casing wear ring	903.01/.11	Screw plug
520	Sleeve	920.01/.02/.03/.11/.12	Nut
545	Bearing bush	933.01	Split pin
550.11	Disc	99-3	Set of accessories

7) Number of support columns 712 without hole, for installation depth ET: 1000 mm = 0; 1900 mm = 1; 2800 mm = 2

MK, MKA - lubricated by an external fluid

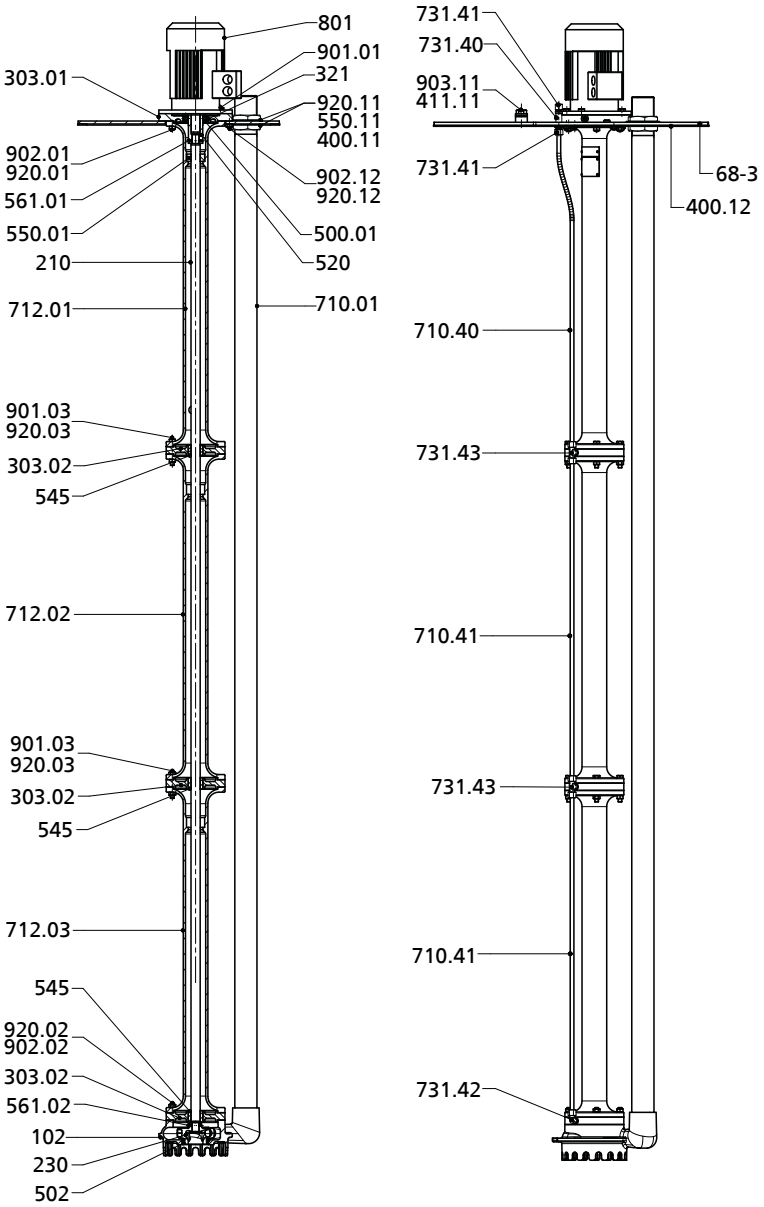


Fig. 6: Illustration of MK, MKA - installation depth 2800 mm, lubricated by an external fluid

List of components

Part No.	Description	Part No.	Description
102	Volute casing	550.01/.11	Disc
210	Shaft	561.01/.02	Grooved pin
230	Impeller	68-3	Cover plate
303.01	Thrust and radial bearing	710.01/.40/.41	Pipe
303.02	Thrust and radial bearing without vertical hole	712.01/.02/.03[8)]	Support column without hole
321	Radial ball bearing	731.40/.41/.42/.43	Pipe union
400.11/.12	Gasket	801	Flanged motor
411.11	Joint ring	901.01/.03	Hexagon head bolt
500.01	Ring	902.01/.02/.12	Stud
502	Casing wear ring	903.11	Screw plug
520	Sleeve	920.01/.02/.03/.11/.12	Nut
545	Bearing bush		

8) Number of support columns 712 without hole, for installation depth ET: 1000 mm = 0; 1900 mm = 1; 2800 mm = 2

MKY

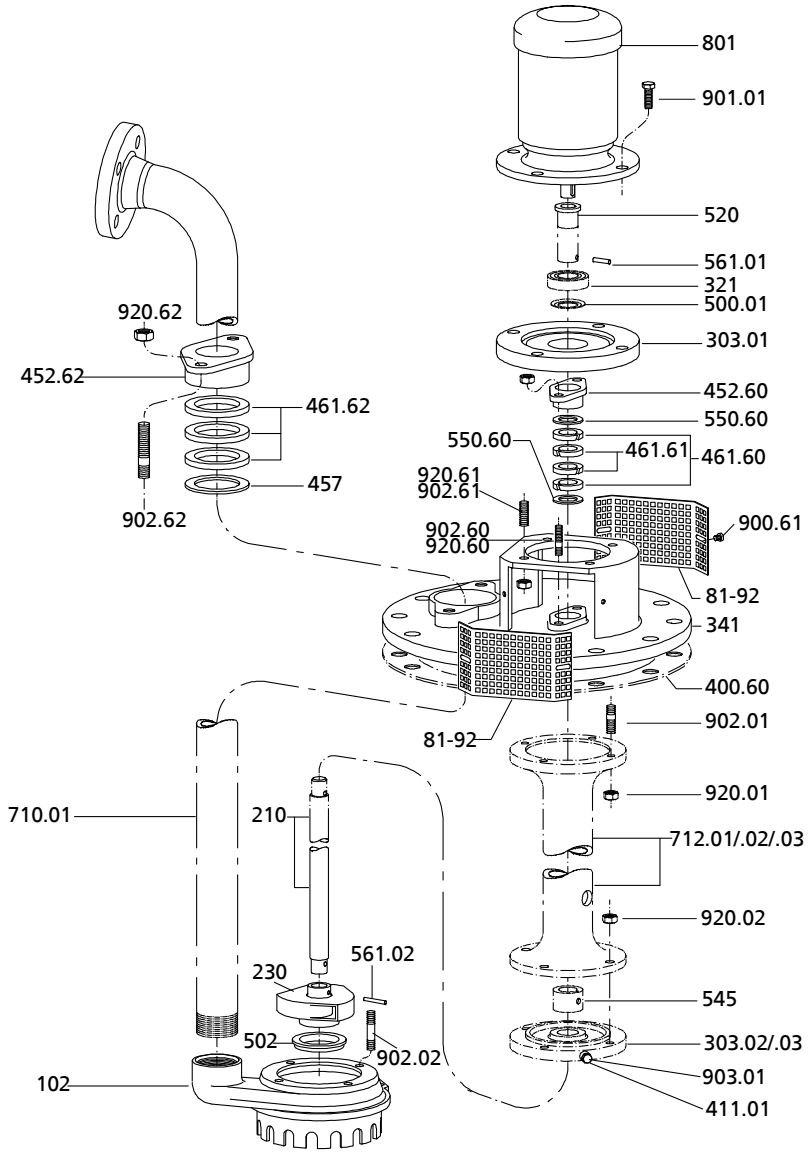


Fig. 7: MKY

List of components

Part No.	Description	Part No.	Description
102	Volute casing	520	Sleeve
210	Shaft	545	Bearing bush
230	Impeller	550.60	Disc
303.01	Thrust and radial bearing	561.01/.02	Grooved pin
303.02	Thrust and radial bearing without vertical hole	710.01	Pipe
303.03	Thrust and radial bearing with vertical hole	712.01	Support column with hole
321	Radial ball bearing	712.02/.03	Support column without hole
341	Drive lantern	801	Flanged motor
400.60	Gasket	81-92	Cover plate
411.01	Joint ring	900.61	Screw
452.60/.62	Gland follower	901.01	Hexagon head bolt
457	Neck ring	902.01/.02/.60/.61/.62	Stud
461.60/.61/.62	Gland packing	903.01	Screw plug
500.01	Ring	920.01/.02/.60/.61/.62	Nut
502	Casing wear ring		

19/06/2019

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