

JUNG PUMPEN MULTICUT SEWAGE PUMPS

APPLICATION

Centrifugal submersible sewage pumps fitted with the MultiCut cutting system are used as stationary appliances in pressurised drainage systems for discharge in sparsely populated areas or of detached houses. They are suitable for pumping domestic wastewater with the usual additions (as specified in German standard DIN 1986, Part 3).

For pumping from ducts which are connected to the public sewer system, explosion-proof submersible pumps of the UFK series have to be used. On account of the upstream cutting system, the pressurised line as from DN 32 - as from DN 80 minimum without cutting system - may be routed parallel to the terrain.

Operating conditions up to a temperature of the material to be transported of 40° Celsius

Submerged motor:
Continuous operation (S1)
Emerged motor:
Intermittent operation (S3)
(e.g. 20% = 2 min. operation,
8 min. break)

MULTICUT CUTTING SYSTEM

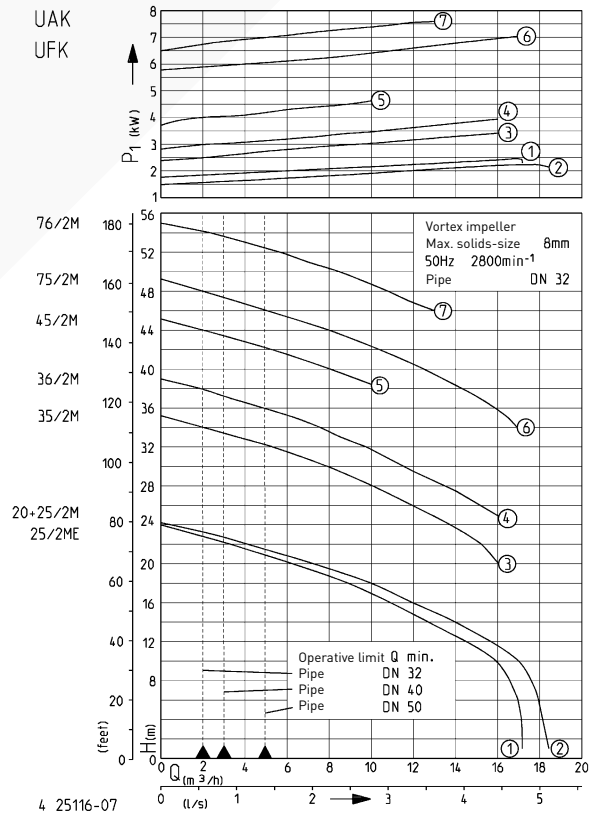
The unique MultiCut cutting system ensures a maximum of operational safety at outstanding delivery characteristics. Fitted with a cutter plate made of hardened stainless steel and a three-bladed knife, it disintegrates coarse additions in the wastewater with more than 62,000 cutting processes per minute before they can get into the pump hydraulics. Solids which cannot be transported are rejected outside of the pump by the cutting rotor as the cutting system is located upstream from the pump hydraulics. Specifically arranged grooves on the cutter plate ensure additional safety as the cutting unit is permanently cleaned automatically during the delivery.



- Cutting rotor with stirring effect
- Plug-in cable connection
- External adjustable cutting mechanism
- Controllable oil chamber
- SiC mechanical seal independent of sense of rotation
- Moisture-sealed cable inlet
- Installed motor protection

- **NEW:** MultiCut 20/2 M plus
 - 10% less consumption
 - 20% less weight as 25/2 M
 - Impeller and replaceable wear plate made from Grivory (fibre-glass reinforced plastic)

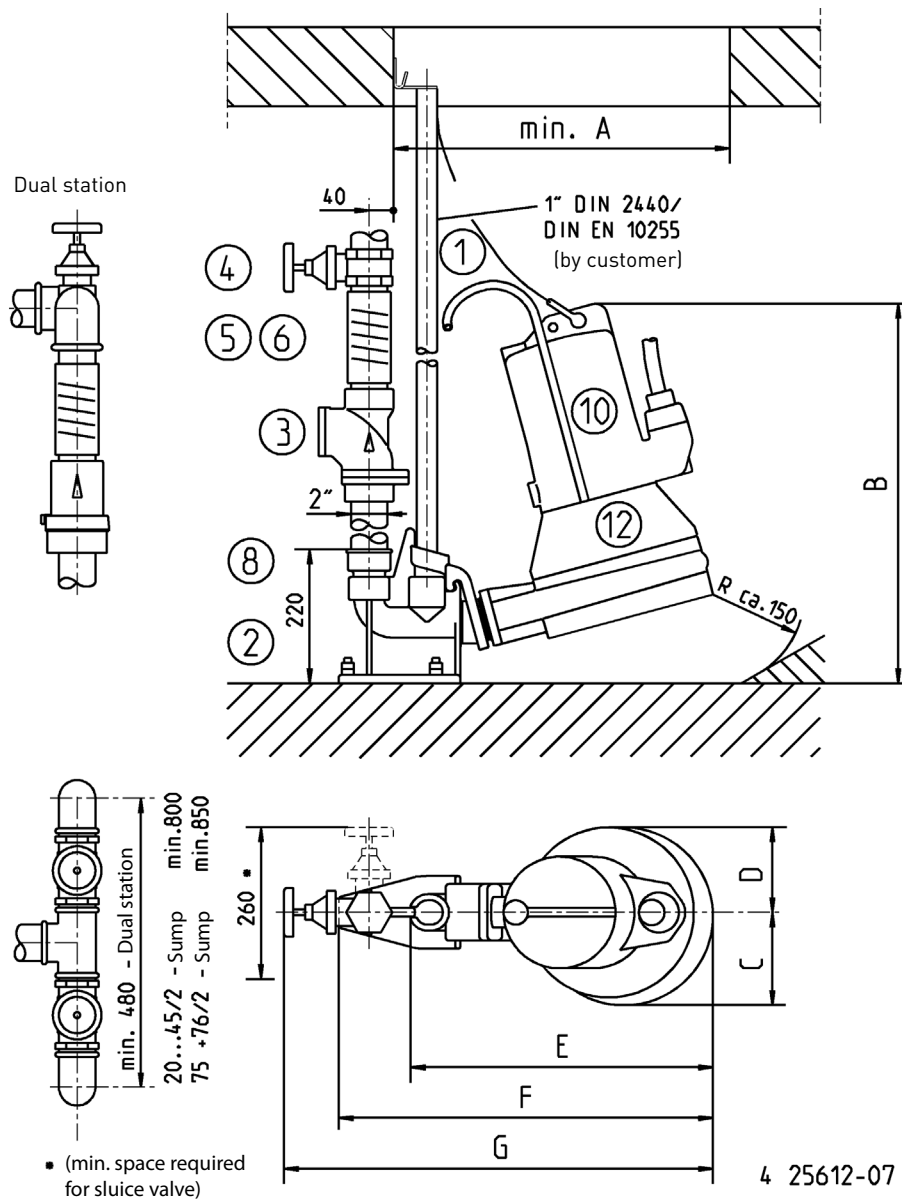
PERFORMANCE



We reserve the right to change specifications without notice Pump performance is subject to ISO 9906 tolerances
The minimum flow velocity in the pressure piping must be 0.7 m/s according to EN 12056.
This data is represented in the performance curve as a limit of application.

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Mounting arrangement with ball check valve






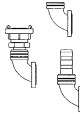
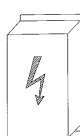




UAK/UFK	A	B	C	D	E	F	G	Sump dimation min.
20/2M plus	430	450	110	110	380	500	585	400 x 700mm
25/2M	470	460	125	125	420	540	635	400 x 700mm
25/2ME-36/2M	470	490	125	125	420	540	635	400 x 700mm
45/2M	470	490	130	125	420	540	635	400 x 700mm
75/2M+76/2M	545	625	155	140	500	615	705	400 x 800mm

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ACCESSORIES

		Code No.	20/2 M plus	25/2 M	25/2 ME	35/2 M	36/2 M	45/2 M	75/2 M	76/2 M	
	1 Chain with eyelets DIN 766 Load-bearing cap. 5x18,5, 2,5 m, 2 Eyelets 320 kg JP44790 5x18,5, 5,0 m, 2 Eyelets 320 kg JP44788 Stainl. steel (1.4401), 4x16, 2,5 m, 5 Eyelets+1 shackle 200 kg JP44791 Stainl. steel (1.4401), 4x16, 5,0 m, 8 Eyelets+2 shackle 200 kg JP44793 Hoist (not for stainless steel chains) JP21394		•	•	•	•	•	•	•	•	
	2 Guide rail system GR 35, 1½" Female thread (see mounting arrangem.) JP14094 Shift of centre of gravity JP44757		•	•	•	•	•	•	•	•	•
		H B D									
	3 Swing-type check valve 1½" (DN 40), PN 4 150 120 1½" JP00317 DIN EN 12050-4 2" (DN 50), PN 4 150 120 2" JP00326		•	•	•	•	•	•			
	Ball check valve 2" (DN 50), PN 6 185 155 2" JP44782 DIN EN 12050-4 (no illustr.) Elbow ball check valve KE 1½" (DN 40), PN 6 170 125 1½" JP44783 DIN EN 12050-4		•	•	•	•	•	•	•	•	•
	4 Stop-off valve 1½" (DN 40), PN 16 125 max.60 1½" JP44786 2" (DN 50), PN 16 140 max.67 2" JP44787	H B D	•	•	•	•	•	•	•	•	
		H D inside									
	5 Elastic connection 1½" (DN 40), PN 4 120 50 JP44777 2" (DN 50), PN 4 150 63 JP44775		•	•	•	•	•				
			•	•	•	•	•				
	6 Clamp 1½" JP44763 2" JP44764		•	•	•	•	•				
			•	•	•	•	•				
	7 Pump base JP44759 Pump base M (without illustration) JP20980 Pump base M 220 JP22302			•	•	•	•	•		•	
	8 Reducing socket 1½"-2" for Guide rail system GR 35 JP44776 1¼"-1½" for pipe connection JP44769 1¼"-2" for pipe connection JP44772		•	•	•	•	•	•	•	•	•
	9 Pipe connection 1¼" (inside thread), for transportable applica- JP16870 tion Coupling connection size C, for transportable application JP14076 Hose connection Ø 42, for transportable application JP14077		•	•	•	•	•	•	•	•	
			•	•	•	•	•	•	•	•	
			•	•	•	•	•	•	•	•	
	10 Flushing tube Type 0 JP45408 Flushing tube Type I JP28221 Flushing tube Type II JP28222		•								
				•	•	•	•	•			
									•	•	
	11 Electrical connection Single unit AD 12 ExME, TLS JP43163 + soft starting device JP24138 AD 46 ExM, TLS JP43160 AD 46 MP SM* JP27119 AD 610 ExM, TLS JP43161 AD 610 MP SM* JP27120 AS 610 ExM, TLS JP43164 Duplex unit BD 46 ExM, TLS JP43166 BD 46 MP SM* JP27153 BD 610 ExM, TLS JP43167 BD 610 MP SM* JP27154 BS 610 with accessories - see controls				•						
	Rechargeable battery for mains-independent alarm JP44850 (for MP SM control order article No. JP 28603)		•	•	•	•	•	•	•	•	
			•	•	•	•	•	•	•	•	
	12 Seal leak detectorDKG (for UAK) JP00252 Seal leak detectorDKG-Ex (for UFK) JP00249			•	•	•	•	•	•	•	
			•	•	•	•	•	•	•	•	

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Type	Code No.	Type	Code No.	Largest height x width	Cable length	Pressure connection	Weight approx.
UAK 20/2 M plus	JP42765	UFK 20/2 M plus	JP42766	350 x 290 mm	10 m	DN 32	29,0 kg
UAK 25/2 M	JP09809	UFK 25/2 M	JP09810	355 x 330 mm	10 m	DN 32	36,5 kg
UAK 25/2 ME*	JP09843	UFK 25/2 ME*	JP09742	390 x 330 mm	10 m	DN 32	38,0 kg
UAK 35/2 M	JP09806	UFK 35/2 M	JP09807	390 x 330 mm	10 m	DN 32	40,5 kg
UAK 36/2 M	JP09907	UFK 36/2 M	JP09908	390 x 330 mm	10 m	DN 32	40,5 kg
UAK 45/2 M	JP09430	UFK 45/2 M	JP09431	390 x 330 mm	10 m	DN 32	42,0 kg
UAK 75/2 M	JP09912	UFK 75/2 M	JP09913	520 x 430 mm	10 m	DN 32	90,0 kg
UAK 76/2 M	JP09262	UFK 76/2 M	JP09263	520 x 430 mm	10 m	DN 32	90,0 kg

* See special technical notes in the chapter on "Technical data".

PERFORMANCE

Type	Delivery head H [m]	6	9	12	15	18	21	25	28	32	34	36	38	40	44	46	48	50	52	54	
UAK/UFK 20/2 M plus	Flow rate Q [m³/h]	18	17	16	13	10	6														
UAK/UFK 25/2 M		18	17	16	13	10	6														
UAK/UFK 25/2 ME		17	16	15	12	9	5														
UAK/UFK 35/2 M							16	13	10	5											
UAK/UFK 36/2 M								16	14	10	7	5	2								
UAK/UFK 45/2 M													10	8	2						
UAK/UFK 75/2 M											17	16	15	13	8	5	2				
UAK/UFK 76/2 M																	13	11	9	6	3

ELECTRICAL DATA

Type	Voltage	Motor rating kW		S3	Current	Built-in motor	RPM	Cable		Device
	Volt	P ₁	P ₂	%	Ampere	protection	min. ⁻¹	pluggable		Fuse min.
UAK/UFK 20/2 M plus	3/PE~230/400	2.40	1.91	25	7.0/4.0	Thermostat	2730	H07 RN-F	6G 1.5	10 A
UAK/UFK 25/2 M	3/PE~230/400	2.60	2.10	40	7.6/4.4	Thermostat	2776	H07 RN-F	6G 1.5	10 A
UAK/UFK 25/2 ME**	1/N/PE~230	2.70	2.04	35	12.0	Thermostat	2860	H07 RN-F	6G 1.5	16 A
UAK/UFK 35/2 M	3/PE~230/400	3.70	3.04	40	11.5/6.6	Thermostat	2895	H07 RN-F	6G 1.5	10 A
UAK/UFK 36/2 M	3/PE~230/400	4.20	3.42	30	12.7/7.3	Thermostat	2880	H07 RN-F	6G 1.5	10 A
UAK/UFK 45/2 M	3/PE~230/400	4.84	3.93	25	13.7/7.9	Thermostat	2857	H07 RN-F	6G 1.5	10 A
UAK/UFK 75/2 M	3/PE~400/690	7.70	6.60	30	13.2/7.7	Thermostat	2920	H07 RN-F	10G 2.5	20 A***
UAK/UFK 76/2 M	3/PE~400/690	7.70	6.60	30	13.2/7.7	Thermostat	2920	H07 RN-F	10G 2.5	20 A***

** Operation possible only with control AD 12 ExME !

*** Value for γ/Δ_{start}

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TECHNICAL DATA

Pump

Vertical, single-stage, submersible, pump housing with horizontal discharge, open impeller with external cutting system MultiCut - adjustable.

Bearings

Common shaft for pump and motor, grease-packed ball bearing.

Seal

Silicon-carbide mechanical seal independent of the sense of rotation, oil chamber and artificial carbon mechanical seal or duplex rotary shaft seal to motor compartment, safe to run dry.

Motor

Submersible, insulation class F, type of protection IP 68, protected by winding thermostats, automatic activation by control only or - up to 3.2 kW three-phase current - by CEE plug with motor protection upon request, UFK types tested by German PTB Federal Agency, UFK Type PTB-certified, ex designation

⊕ II 2 G Ex d IIB T4 (UFK 20/2 M plus

⊕ II 2 G Ex d IIB T4 Gb)

Materials

Pump and motor housing as well as impeller made of grey cast iron GG (impeller 75/2 and 76/2 made of spheroidal graphite iron), MultiCut 20/2 M plus impeller and replaceable wearplate made from fibreglass reinforced plastic, completely covered shaft with no contact to the pumped liquid, stainless steel hardened (57 HRC) cutting system, special flexible rubber cable.

Scope of supply

UAK sewage pump or explosion-proof UFK submersible pump in keeping with German / European standard DIN EN 12050 with shackle and 10 m cable, without plug, without base.

Special technical note for UAK / UFK 25/2 ME

As the rated output of the motor exceeds 1.4 kW, the permission of the local power supply organisation has to be obtained prior to ordering and commissioning.

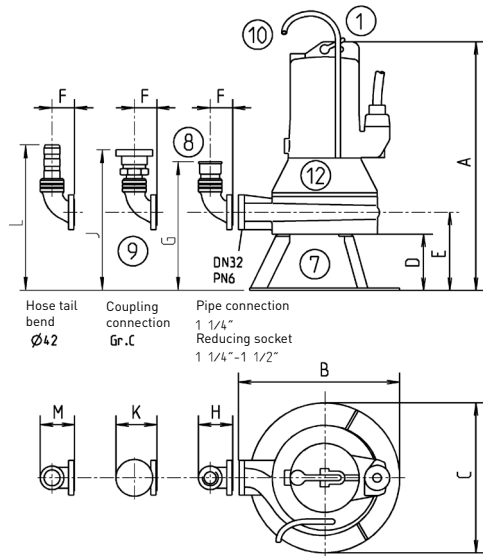
SOFT STARTING DEVICE (ONLY FOR UAK/UFK 25/2 ME)

The soft starting device is a resistance starter with a built-in overheating protection in order to reduce the starting current to approx. 33 A. The maximum switching frequency is 10/switching action per hour (at an ambient temperature of 40° Celsius).

This assembly group is installed in the AD 12 ExME control in the factory when ordered. A subsequent installation is not possible.



Dimensions with pump base (mm)



Typ:UAK/UFK	A	B	C	D	E	F	G	H	J	K	L	M
20/2M	440	290	230	100	140	60	230	90	310	110	320	90
25/2ME	520	330	250	140	180	60	270	90	350	110	360	90
25/2M	485	330	250	140	180	60	270	90	350	110	360	90
35/2M+36/2M	520	330	250	140	180	60	270	90	350	110	360	90
45/2M	520	330	255	140	180	60	270	90	350	110	360	90
75/2M+76/2M	665	430	400	150	210	60	300	90	380	110	-	-

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FLUSHING TUBE

The flushing tube is screwed into the annular casing of the pump instead of the venting screw. It vents the pump and at the same time cleans the chamber with a jet of water. This bypass causes a loss of performance of abt. 10%.

Some pumps require a minimum head to ensure a sufficient flushing effect (see table):

Pump type	Installation	Minimum head Hman [m]
... 20/2 M plus	straight	15
... 20/2 M plus	inclined	4
... 25/2 M	straight	15
... 25/2 M	inclined	4
... 35/2 M	straight	25
... 35/2 M	inclined	12
... 36/2 M	straight	25
... 36/2 M	inclined	12
... 45/2 M	straight	30
... 45/2 M	inclined	30

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Mounting arrangement with PKS sump

