Pioneering for You

Range leaflet – Edition 09/2017 – 60 Hz

Wilo-Rexa CUT

Series extension

Wilo-Rexa CUT

Design
Submersible grinder pump as submersible monobloc unit for stationary and portable wet well installation.

Model Numbers

Example:	**Wilo-Rexa CUT GI03.30/S-M15-2-623**
Rexa	Submersible sewage pump with centrifugal hydraulics
CUT	Grinder pump
GI	Internal blade
03	Nominal discharge diameter: ANSI 1.5
30	Max. delivery head in meter
S	Stainless steel motor housing
M	Mains connection version: M = single-phase T = three-phase
15	Value/10 = motor power P_2 in kW
2	Number of poles
6	Frequency : 60 Hz
23	Code for rated voltage

Application
- → Pumping of water containing domestic sewage.
- → Typically used in pressure sewer applications - both municipal and residential.

Technical data
- → Power connection: 1~230 V/60 Hz, 3~230 V/60 Hz or 3~460 V/60 Hz
- → Submerged operating mode: continuous duty (S1)
- → Non-submerged operating mode: rated minutes operation (S2-15 or S3 10%)
- → Protection class: Submerged under pressure (IP 68)

Special features/product advantages
- → High operational reliability through spherically-formed macerator with pulling cut
- → Cutter design yields fine solids for non-clogging operation
- → Resistant to obstructions and blockages
- → Sealing chamber
- → Long service life through a high-quality motor seal with two independent mechanical seals and optional pencil electrode for sealing chamber control
- → cCSAus approval

- → Insulation class: F
- → Max. fluid temperature: 37-104 °F (3-40 °C)
- → Cable length: 33 ft (10 m)

Equipment/function
- → Macerator with internal blade and pulling cut - breaks up the solids into smaller pieces to produce an easily pumped fluid
- → Thermal winding monitoring with bimetallic strip (normally closed contacts)
- → cCSAus approval
- → Optional external pencil electrode for the sealing chamber monitoring

Materials
- → Pump housing: ASTM A48 Class 35/40B (EN-GJL-250)
- → Impeller: ASTM A48 Class 35/40B (EN-GJL-250)
- → Shaft: Stainless steel AISI 420 (1.4021)
- → Mechanical seal on pump side: SiC/SiC

→ Mechanical seal on the motor side: C/$MgSiO_4$
→ Static gasket: Nitrile (NBR)
→ Motor housing: Stainless steel AISI 304 (1.4301)
→ Macerator: Stainless steel AISI 440B+Co (1.4528)

Description/design
Submersible grinder pump as submersible monobloc unit with internal macerator. Pump is designed for wet pit installation on guide rails or for use in portable applications in intermittent operation.

Hydraulics
The outlet on the pressure side is designed as a horizontal flange connection with a discharge size of 1.25" (32 mm). Double shrouded single-channel impellers are used in the design.

Motor
Glanded motors conduct heat directly to the surrounding fluid via the housing components and can be used in submerged state for permanent and intermittent operation.

A sealing chamber protects the motor from fluid leakage. The filling fluid used is biodegradable and environmentally safe.

Cable lengths are available in fixed lengths measured in 33 ft (10 m) intervals.

Sealing
Sealing on the fluid and motor side with two independent mechanical seals.

Scope of delivery
→ Pump with 33 ft (10 m) connecting cable with bare cable end
→ Installation and operating instructions

Commissioning
Installation of pumps with single-phase motor:
The free cable end is to be wired in separate switchbox with a starting and operating capacitator. The parts must be provided by the customer.
→ **Start capacitator:** 70 µF, 440 V, 60 Hz
→ **Operating capacitator:** 35 µF, 440 V, 60 Hz
→ **Start relay function description:** When starting the pump the starting capacitator is switched parallel to the operating capacitator for approx. 1 sec. After this time has elapsed, the starting capacitator is isolated from the operating capacitator.

Operation in wet well installation with non-submerged motor:
It is possible to have the motor partially submerged for short periods. The operating times here are dependent on the rated motor power and are defined by the information in the "Operating mode for non-immersed operation". This information must be strictly observed! The maximum running times with partially submerged motor at the maximum fluid temperature are 15 minutes for short-term operation (S2) and 1 minute for intermittent operation (S3).
→ The maximum ambient temperature is 104 °F (40 °C). Higher ambient temperatures are possible on request.
→ The maximum fluid temperature is 104 °F (40 °C).

Dry-running protection system:
The pump wet end must always be submerged to prevent air entrainment. In the case of fluctuating fluid levels, the system should shut down automatically once the minimum water level is reached.

Horizontal installation:
Horizontal installation is **not** possible with these units!

Operation modes
Continuous duty (S1):
The pump can operate continuously at the rated load without exceeding the maximum permissible temperature.

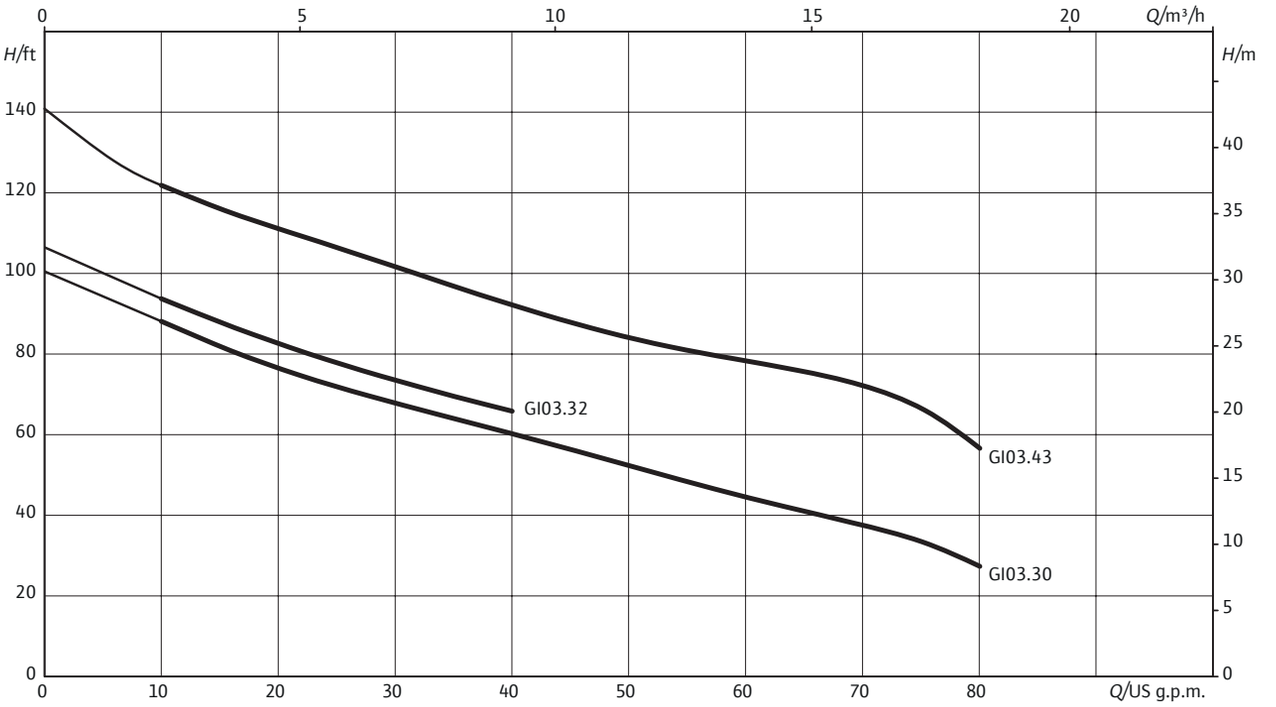
Rated minutes operation/short-term operation (S2):
The maximum operating period is given in minutes, for example, S2-15. The pause must continue until the machine temperature no longer deviates from that of the coolant by more than 2 K.

Intermittent operation/interval operation (S3):
This operating mode defines a combination of periods of operation and standstill. With S3 operation, the values given are always calculated based on a period of 10 minutes:
→ S3 10%: operation 10 % of 10 min = 1 min; standstill 90 % of 10 min = 9 min

Accessories
→ Guide system and pump base
→ Lifting chains or cables
→ Control panels and relays

Pump curves Wilo-Rexa CUT GI03...

Single-channel impeller with macerator



Information for order placements

Pump type	Power connection	Explosion protection	Art No.
CUT GI03.30/S-M15-2-623	1~230 V, 60 Hz	–	6082813
CUT GI03.30/S-T15-2-646	3~460 V, 60 Hz	–	6082811
CUT GI03.30/S-T15-2-623	3~230 V, 60 Hz	–	6082815
CUT GI03.32/S-M15-2-623	1~230 V, 60 Hz	–	6082814
CUT GI03.32/S-T15-2-646	3~460 V, 60 Hz	–	6082812
CUT GI03.32/S-T15-2-623	3~230 V, 60 Hz	–	6082817
CUT GI03.43/S-T25-2-646	3~460 V, 60 Hz	–	6082810
CUT GI03.43/S-T25-2-623	3~230 V, 60 Hz	–	6082816

Electrical accessories – level control with dynamic pressure system

Level measurement via an open dynamic pressure system with the option of a separate immersion bell for the high water level.

Type	Description	Art no.
Guide system Size 2	Made of ASTM A48 Class 35/40B, painted, with free passage in 1.5 in. Foot elbow including pump holder, profile joint, installation and floor fixation accessories and guide pipe bracket without guide pipes. Connection on pressure side in ANSI B16.1, size 2, class 125. The double pipe feed (1.1x0.1 in) is to be provided by the customer.	2057179
Pump base grinder pump	Made of steel (S235JR), powder-coated, including fixation material	6069669
Mounting accessories DN 40/50/65, PN 10	For one flange connection, with screws, nuts and flat gasket	6076963

You can find more accessories at the end in the chapter Electric accessories!

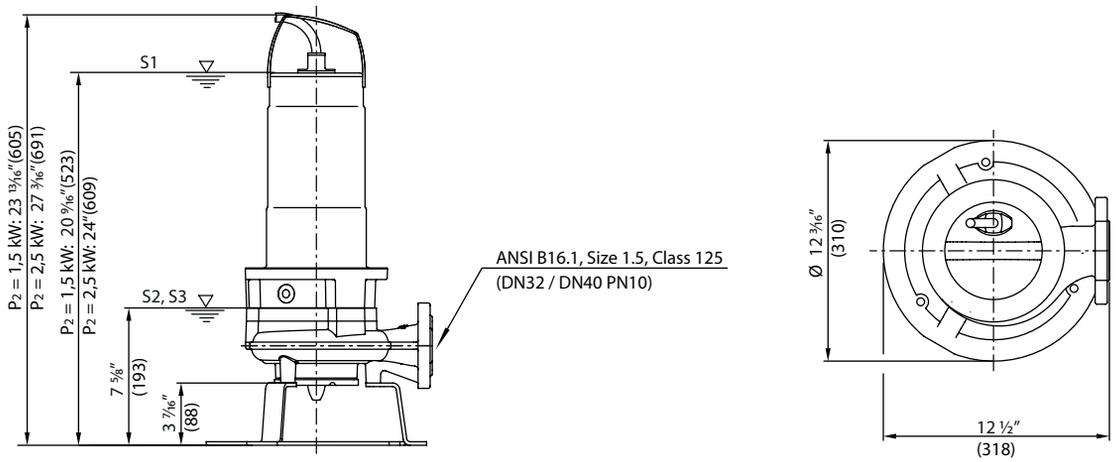
Attention: Switchgears are not protected against explosions and can be used only outside potentially explosive areas. If pumps are used within potentially explosive areas, onsite measures are required.

Technical data				
Pump type	**CUT GI03.30/ S-M15-2-623**	**CUT GI03.30/ S-T15-2-646**	**CUT GI03.30/ S-T15-2-623**	**CUT GI03.32/ S-M15-2-623**
Power connection	1~230 V, 60 Hz	3~460 V, 60 Hz	3~230 V, 60 Hz	1~230 V, 60 Hz
Unit				
Pressure connection	Size 1.5	Size 1.5	Size 1.5	Size 1.5
Max. volume flow Q_{max}	80.1 US GPM	80.1 US GPM	80.1 US GPM	40.1 US GPM
Max. total dynamic head H_{max}	30.50 ft	30.50 ft	30.50 ft	32.30 ft
Operation mode (submerged)	S1	S1	S1	S1
Operation mode (non-submerged)	S2-15 min / S3-10%	S2-15 min / S3-10%	S2-15 min / S3-10%	S2-15 min / S3-10%
Max. submersion	66 ft	66 ft	66 ft	66 ft
Max. submersion	20 m	20 m	20 m	20 m
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature *T*	37 ... 104 °F	37 ... 104 °F	37 ... 104 °F	37 ... 104 °F
Fluid temperature *T*	+3 ... +40 °C	+3 ... +40 °C	+3 ... +40 °C	+3 ... +40 °C
Weight approx. *m*	71 lbs	72 lbs	72 lbs	71 lbs
Weight approx. *m*	32 kg	33 kg	33 kg	32 kg
Motor data				
Full load amps I_N	8.9 A	3.1 A	6.2 A	8.9 A
Starting current - direct I_A	29 A	21 A	42 A	29 A
Rated motor power P_2	2.0 hp	2.0 hp	2.0 hp	2.0 hp
Rated motor power P_2	1.5 kW	1.5 kW	1.5 kW	1.5 kW
Maximum power consumption P_1	2.8 hp	2.7 hp	2.7 hp	2.8 hp
Maximum power consumption P_1	2.1 kW	2.0 kW	2.0 kW	2.1 kW
Starting	ACL	ACL	ACL	ACL
Rated speed *n*	3480 rpm	3480 rpm	3480 rpm	3480 rpm
Insulation class	F	F	F	F
Max. starts per hour	30 1/h	30 1/h	30 1/h	30 1/h
Permitted voltage tolerance	±10	±10	±10	±10
Cable				
Length of power cable	10 m	10 m	10 m	10 m
Cable type	SJOW	SJOW	SJOW	SJOW
Cable cross-section	7x1,5	6G1	6G1	7x1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	–	–	–	–
Equipment/function				
Float switch	–	–	–	–
Thermal protection	Bimetall	Bimetall	Bimetall	Bimetall
Explosion protection	–	–	–	–
Materials				
Static seal	Nitrile	Nitrile	Nitrile	Nitrile
Impeller	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	AISI 304	AISI 304	AISI 304	AISI 304
Pump volute	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B
Pump shaft	AISI 420	AISI 420	AISI 420	AISI 420

Technical data				
Pump type	**CUT GI03.32/ S-T15-2-646**	**CUT GI03.32/ S-T15-2-623**	**CUT GI03.43/ S-T25-2-646**	**CUT GI03.43/ S-T25-2-623**
Power connection	3~460 V, 60 Hz	3~230 V, 60 Hz	3~460 V, 60 Hz	3~230 V, 60 Hz
Unit				
Pressure connection	Size 1.5	Size 1.5	Size 1.5	Size 1.5
Max. volume flow Q_{max}	40.1 US GPM	40.1 US GPM	80.1 US GPM	80.1 US GPM
Max. total dynamic head H_{max}	32.30 ft	32.30 ft	42.70 ft	42.70 ft
Operation mode (submerged)	S1	S1	S1	S1
Operation mode (non-submerged)	S2-15 min / S3-10%	S2-15 min / S3-10%	S2-15 min / S3-10%	S2-15 min / S3-10%
Max. submersion	66 ft	66 ft	66 ft	66 ft
Max. submersion	20 m	20 m	20 m	20 m
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature T	37 ... 104 °F	37 ... 104 °F	37 ... 104 °F	37 ... 104 °F
Fluid temperature T	+3 ... +40 °C	+3 ... +40 °C	+3 ... +40 °C	+3 ... +40 °C
Weight approx. m	72 lbs	72 lbs	81 lbs	81 lbs
Weight approx. m	33 kg	33 kg	37 kg	37 kg
Motor data				
Full load amps I_N	3.1 A	6.2 A	4.8 A	9.7 A
Starting current - direct I_A	21 A	42 A	32.5 A	65 A
Rated motor power P_2	2.0 hp	2.0 hp	3.3 hp	3.3 hp
Rated motor power P_2	1.5 kW	1.5 kW	2.5 kW	2.5 kW
Maximum power consumption P_1	2.7 hp	2.7 hp	4.2 hp	4.2 hp
Maximum power consumption P_1	2.0 kW	2.0 kW	3.2 kW	3.2 kW
Starting	ACL	ACL	ACL	ACL
Rated speed n	3480 rpm	3480 rpm	3480 rpm	3480 rpm
Insulation class	F	F	F	F
Max. starts per hour	30 1/h	30 1/h	30 1/h	30 1/h
Permitted voltage tolerance	±10	±10	±10	±10
Cable				
Length of power cable	10 m	10 m	10 m	10 m
Cable type	SJOW	SJOW	SJOW	SJOW
Cable cross-section	6G1	6G1	6G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	–	–	–	–
Equipment/function				
Float switch	–	–	–	–
Thermal protection	Bimetall	Bimetall	Bimetall	Bimetall
Explosion protection	–	–	–	–
Materials				
Static seal	Nitrile	Nitrile	Nitrile	Nitrile
Impeller	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	AISI 304	AISI 304	AISI 304	AISI 304
Pump volute	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B	ASTM A48 Class 35/40B
Pump shaft	AISI 420	AISI 420	AISI 420	AISI 420

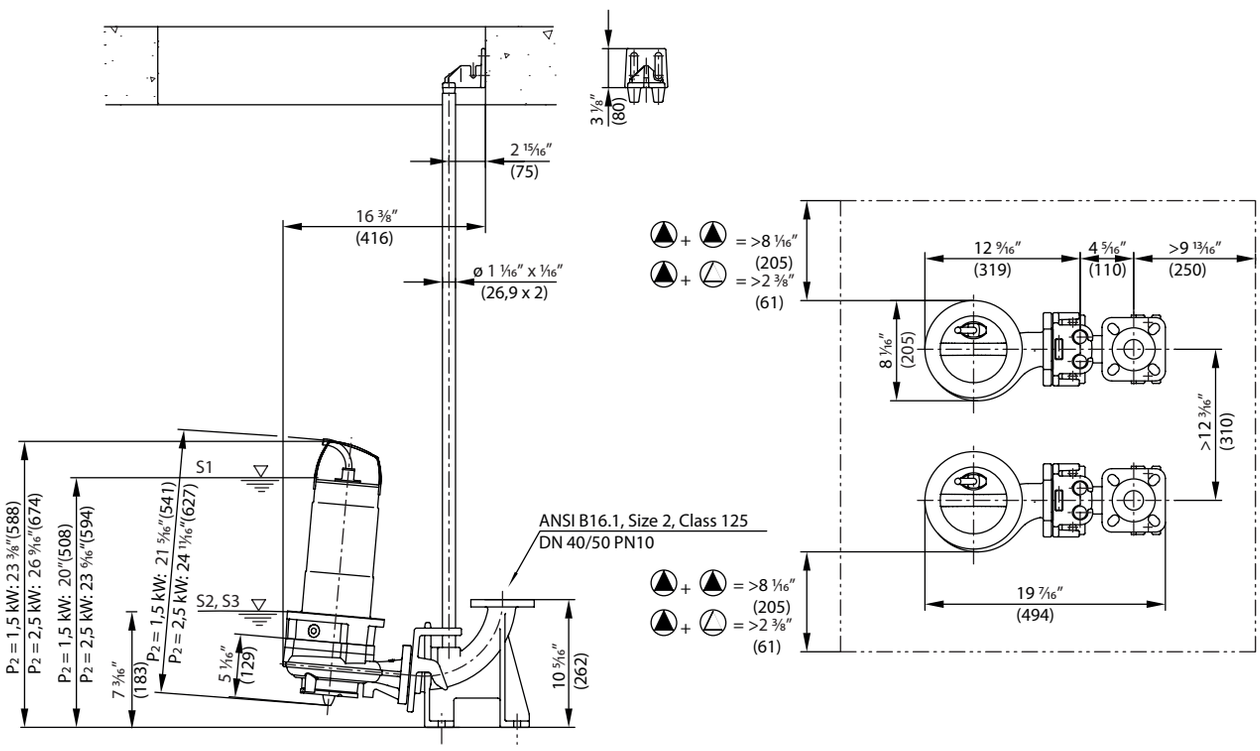
Dimension drawing

Wilo-Rexa CUT GI03.. – portable wet well installation



Dimension drawing

Wilo-Rexa CUT GI03.. – Stationary wet well installation



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