

# Sewage pumps – standard range

## Submersible grinder pumps with macerator

### Series description Wilo-Drain MTS



#### Model Numbers

e.g.: **Wilo-Drain MTS 40/165-3-460-60-2**

<b>MT</b>	Macerator technology
<b>S</b>	Stainless steel motor
<b>40</b>	Nominal discharge diameter [mm]
<b>165</b>	Max. delivery head [ft]
<b>3</b>	Phase specification
<b>460</b>	Rated voltage
<b>60</b>	Frequency
<b>2</b>	Number of poles

e.g.: **Wilo-Drain MTS 40 E 143.80/40-3-460-60-2**

<b>MT</b>	Macerator technology
<b>S</b>	Stainless steel motor
<b>40</b>	Nominal discharge diameter [mm]
<b>E</b>	Single-channel impeller
<b>143</b>	Max. delivery head [ft]
<b>80</b>	Max. volume flow [USgpm]
<b>40</b>	Nominal power $P_2$ (value/10 = 4.0) [hp]
<b>3</b>	Phase specification
<b>460</b>	Rated voltage
<b>60</b>	Frequency
<b>2</b>	Number of poles

#### Application

Pumping of water containing domestic sewage. The Wilo macerator breaks up the solids into smaller pieces to produce an easily pumped fluid.

The MTS40 grinder pump is used typically in pressure sewer applications – both municipal and residential.

- Pressure sewer, residence, camping site, etc.
- Installation costs are reduced significantly due to the small pipe diameter, e.g. 1.6" (40 mm).

#### Special features/product benefits

- Cutter design yields fine solids for non-clogging operation
- High degree of efficiency
- Low operating costs
- Resistant to obstructions and blockages
- Macerator with scissors cutting action virtually eliminates clogging
- Sealing chamber
- High operational reliability
- Corrosion-resistant stainless steel in AISI 316L (1.4404)
- Explosion protection: FM Class 1, Division 1, Group C&D (MTS 40E... only)

#### Technical data

- Power connection: 1~230 V/60 Hz, 3~230 V/60 Hz or 3~460 V/60 Hz
- Submerged operating mode: S1 or S3 25%
- Insulation class: F
- Thermal winding monitoring (normally closed contacts)
- Max. fluid temperature: 37 – 104 °F (3 – 40 °C)
- Cable length: 25 ft (8 m)

#### Equipment/function

- Innovative patented macerator
- Unimpeded flow to the impeller
- Internal rotating blade
- Spherically formed macerator
- Grinding/maceration of substances being pumped
- Shearing cut (scissors cut)

#### 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
- Shaft seal on the motor side (for MTS 40...): Nitrile (NBR)
- Mechanical seal on the motor side (for MTS 40E...): SiC/SiC
- Static gasket: Nitrile (NBR)
- Motor housing: Stainless steel AISI 316L (1.4404)
- Macerator: Stainless steel AISI 440B+Co (1.4528)

#### Description/design

Submersible sewage pump with internal patented macerator cast in AISI 440B+Co solid stainless steel. Pump is designed for wet pit installation on guide rails or for use in portable applications.

#### Hydraulics

The outlet on the pressure side is designed as a horizontal threaded or flange (for MTS 40E...) connection with a discharge size of 1.6" (40 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 25 ft (8 m) intervals.

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#### Sealing

Sealing on the fluid side is done using a bidirectional mechanical seal. For type MTS 40... , the seal used is a rotary shaft seal and for type MTS 40E..., it is a bidirectional mechanical seal.

#### Scope of delivery

- Pump ready for connection with 25 ft (8 m) connecting cable with bare end
- Installation and operating instructions

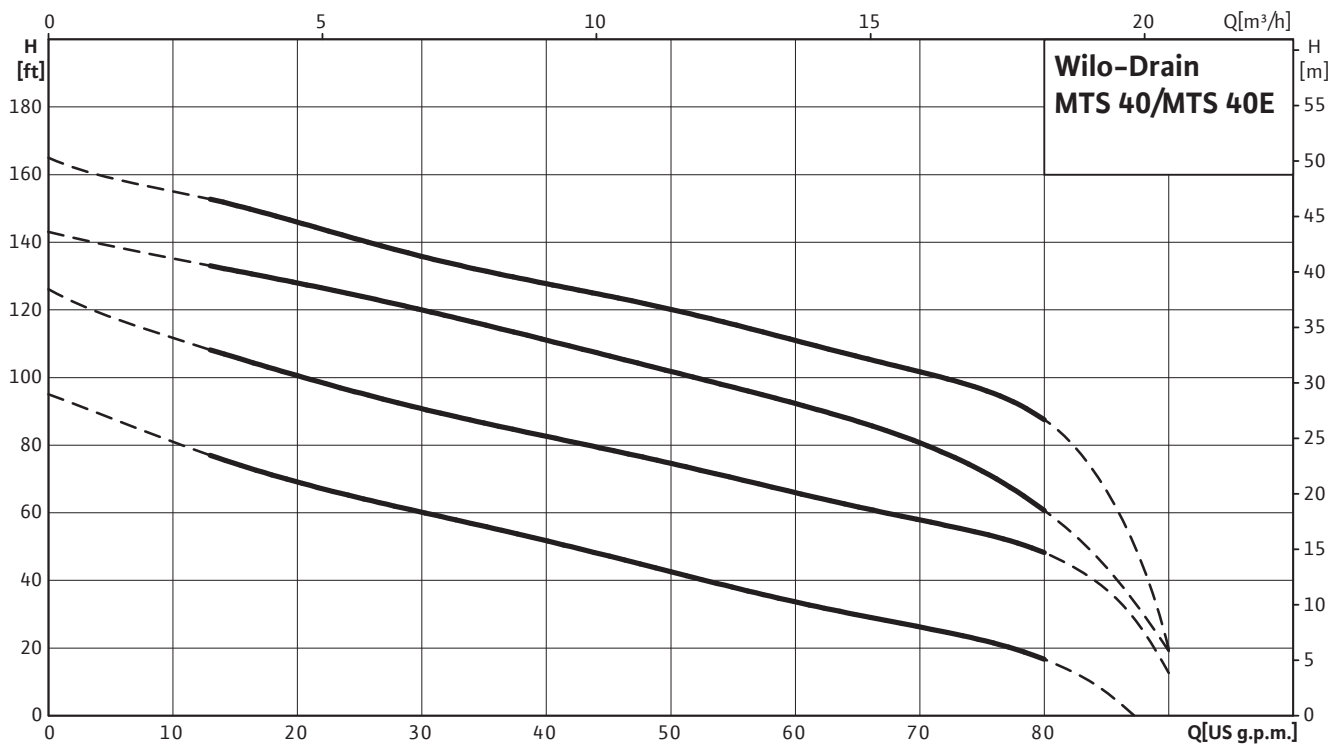
#### Commissioning

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.

#### Accessories

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

#### Duty chart

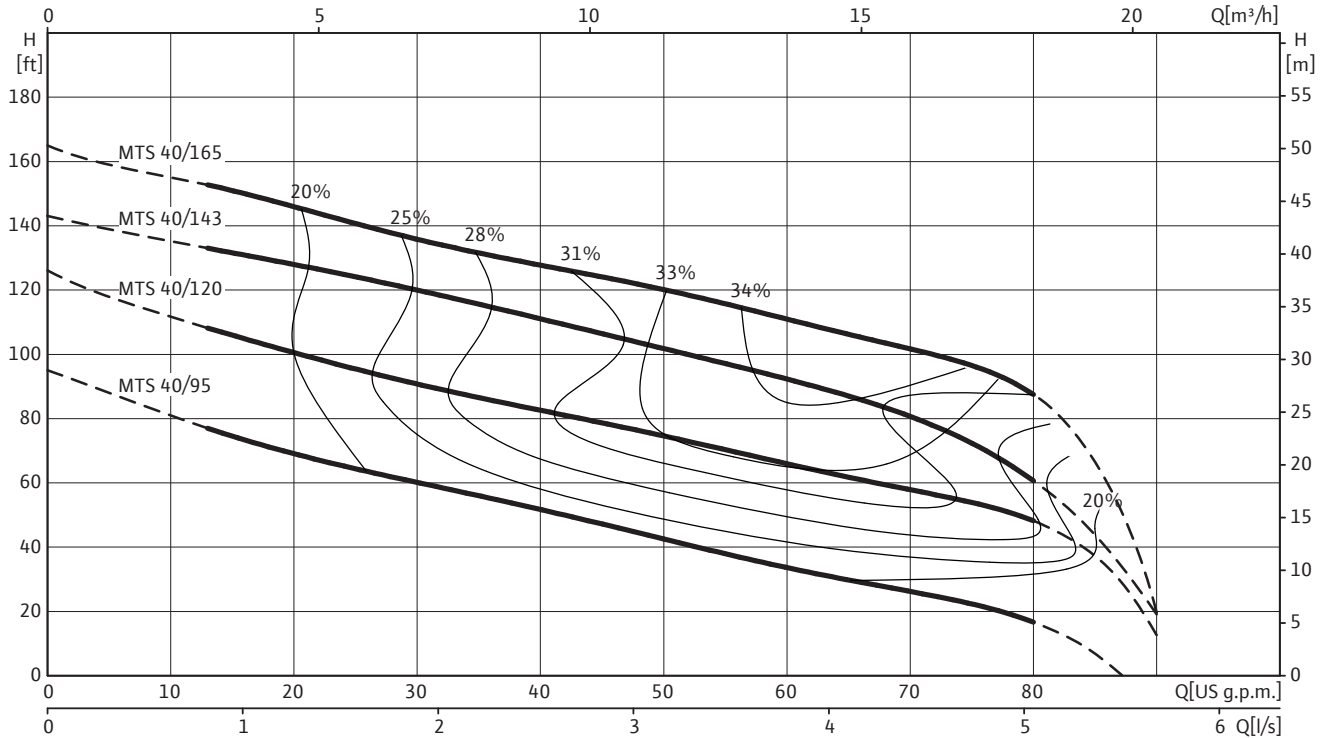


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## Submersible grinder pumps with macerator

### Technical data Wilo-Drain MTS 40

#### Pump curves Wilo Drain MTS 40



#### Information for order placements

Wilo-Drain...	Power connection	Art no.
MTS 40/95	1~230 V, 60 Hz	6063969
MTS 40/95	3~460 V, 60 Hz	6047411
MTS 40/95	3~230 V, 60 Hz	6047412
MTS 40/120	3~460 V, 60 Hz	6047413
MTS 40/120	3~230 V, 60 Hz	6047414
MTS 40/143	3~460 V, 60 Hz	6047415
MTS 40/143	3~230 V, 60 Hz	6047416
MTS 40/165	3~460 V, 60 Hz	6047417
MTS 40/165	3~230 V, 60 Hz	6047418

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## Submersible grinder pumps with macerator

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### Technical data Wilo-Drain MTS 40

	MTS 40/95	MTS 40/95	MTS 40/95	MTS 40/120	MTS 40/120
	1~230 V, 60 Hz	3~460 V, 60 Hz	3~230 V, 60 Hz	3~460 V, 60 Hz	3~230 V, 60 Hz
<b>Unit</b>					
Discharge size mm	40	40	40	40	40
Max. volume flow US GPM	80	80	80	80	80
Max. volume flow l/s	5	5	5	5	5
Max. total dynamic head ft	95	95	95	120	120
Max. total dynamic head m	29	29	29	37	37
Operation mode (submerged)	S1	S1	S1	S1	S1
Operation mode (non-submerged)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. submersion ft	33	33	33	33	33
Max. submersion m	10	10	10	10	10
Fluid temperature °F	37 ... 104	37 ... 104	37 ... 104	37 ... 104	37 ... 104
Fluid temperature °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. lbs	66	66	66	77	77
Weight approx. kg	30	30	30	35	35
<b>Motor data</b>					
Full load amps A	8.8	3.2	6.7	3.7	7.6
Rated motor power (per motor) hp	2.0	2.0	2.0	2.7	2.7
Rated motor power (per motor) kW	1.5	1.5	1.5	2	2
Maximum power consumption hp	2.8	2.8	2.8	3.5	3.5
Maximum power consumption kW	2.1	2.1	2.1	2.6	2.6
Power factor	0.99	0.77	0.73	0.82	0.79
Starting	ACL	ACL	ACL	ACL	ACL
Nominal speed rpm	3480	3480	3480	3480	3480
Insulation class	F	F	F	F	F
Max. starts per hour 1/h	20	20	20	20	20
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>Cable</b>					
Length of power cable ft	25	25	25	25	25
Length of power cable m	8	8	8	8	8
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	6G1	6G1	6G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>					
Motor leakage detection	–	–	–	–	–
Thermal protection	N.C. Contact	N.C. Contact	N.C. Contact	N.C. Contact	N.C. Contact
Explosion protection	–	–	–	–	–

To connect the units to an A.C. system a frequency converter (VFD) can be used on request. For this please contact the manufacturer.

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## Submersible grinder pumps with macerator

### Technical data Wilo-Drain MTS 40

	MTS 40/143	MTS 40/143	MTS 40/165	MTS 40/165
	3~460 V, 60 Hz	3~230 V, 60 Hz	3~460 V, 60 Hz	3~230 V, 60 Hz
<b>Unit</b>				
Discharge size mm	40	40	40	40
Max. volume flow US GPM	80	80	80	80
Max. volume flow l/s	5	5	5	5
Max. total dynamic head ft	143	143	165	165
Max. total dynamic head m	44	44	50	50
Operation mode (submerged)	S1	S1	S1	S1
Operation mode (non-submerged)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. submersion ft	33	33	33	33
Max. submersion m	10	10	10	10
Fluid temperature °F	37 ... 104	37 ... 104	37 ... 104	37 ... 104
Fluid temperature °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. lbs	83	83	83	83
Weight approx. kg	38	38	38	38
<b>Motor data</b>				
Full load amps A	6.1	12.4	6.8	14.2
Rated motor power (per motor) hp	4.0	4.0	5.4	5.4
Rated motor power (per motor) kW	3	3	4	4
Maximum power consumption hp	5.1	5.1	6.3	6.3
Maximum power consumption kW	3.8	3.8	4.7	4.7
Power factor	0.78	0.77	0.82	0.83
Starting	ACL	ACL	ACL	ACL
Nominal speed rpm	3480	3480	3480	3480
Insulation class	F	F	F	F
Max. starts per hour 1/h	20	20	20	20
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of power cable ft	25	25	25	25
Length of power cable m	8	8	8	8
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G2,5	7G1,5	7G2,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>				
Motor leakage detection	–	–	–	–
Thermal protection	N.C. Contact	N.C. Contact	N.C. Contact	N.C. Contact
Explosion protection	–	–	–	–

To connect the units to an A.C. system a frequency converter (VFD) can be used on request. For this please contact the manufacturer.

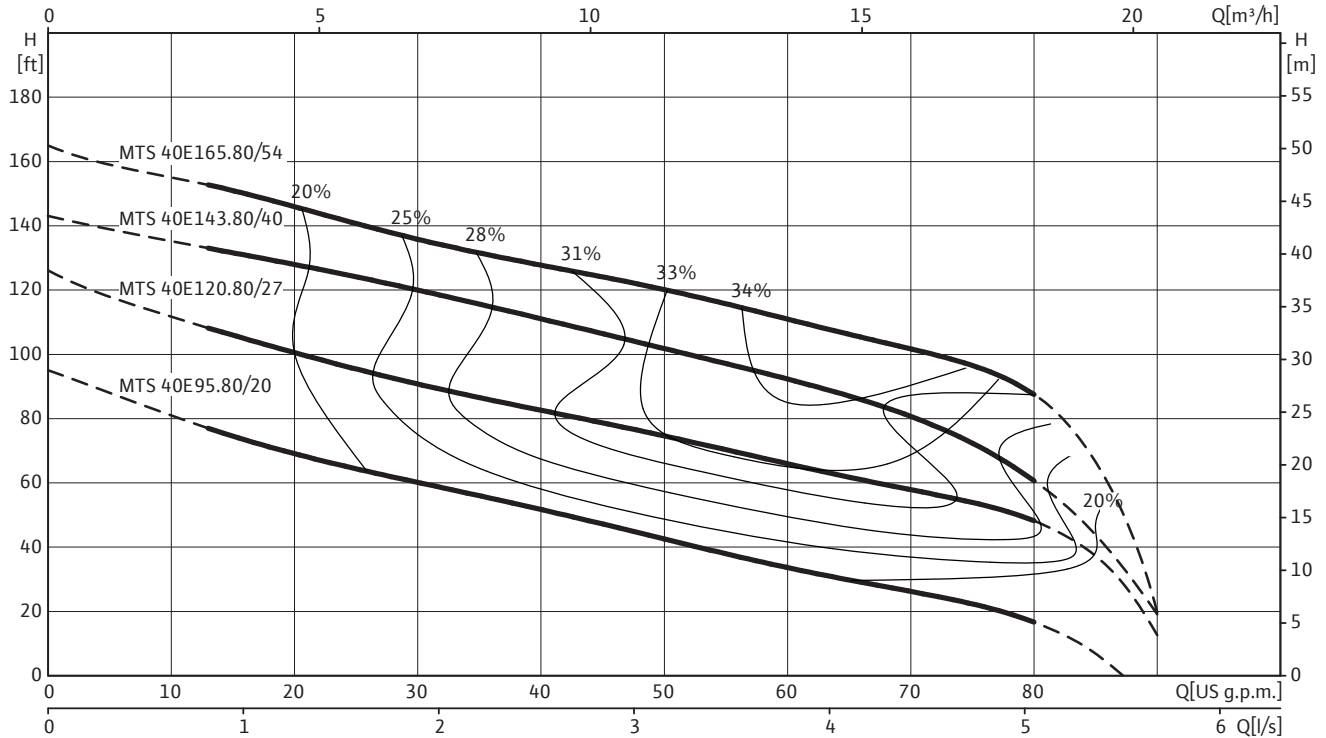
# Sewage pumps – standard range

Submersible grinder pumps with macerator



## Technical data Wilo-Drain MTS 40E

Pump curves Wilo-Drain MTS 40E



Sewage pumps – standard range

### Information for order placements

Wilo-Drain...	Power connection	Art no.
MTS 40E95.80/20	3~230 V, 60 Hz	6045132
MTS 40E95.80/20	3~460 V, 60 Hz	2083421
MTS 40E120.80/27	3~230 V, 60 Hz	6045133
MTS 40E120.80/27	3~460 V, 60 Hz	2065862
MTS 40E143.80/40	3~230 V, 60 Hz	6045131
MTS 40E143.80/40	3~460 V, 60 Hz	6045127
MTS 40E165.80/54	3~230 V, 60 Hz	6047409
MTS 40E165.80/54	3~460 V, 60 Hz	6047408

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## Submersible grinder pumps with macerator

### Technical data Wilo-Drain MTS 40E

	MTS 40E95.80/20	MTS 40E95.80/20	MTS 40E120.80/27	MTS 40E120.80/27
	3~230 V, 60 Hz	3~460 V, 60 Hz	3~230 V, 60 Hz	3~460 V, 60 Hz
<b>Unit</b>				
Discharge size mm	40	40	40	40
Max. volume flow US GPM	80	80	80	80
Max. volume flow l/s	5	5	5	5
Max. total dynamic head ft	95	95	120	120
Max. total dynamic head m	29	29	37	37
Operation mode (submerged)	S1	S1	S1	S1
Operation mode (non-submerged)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. submersion ft	33	33	33	33
Max. submersion m	10	10	10	10
Fluid temperature °F	37 ... 104	37 ... 104	37 ... 104	37 ... 104
Fluid temperature °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. lbs	68	68	79	79
Weight approx. kg	31	31	36	36
<b>Motor data</b>				
Full load amps A	6.7	3.2	7.6	3.7
Rated motor power (per motor) hp	2.0	2.0	2.7	2.7
Rated motor power (per motor) kW	1.5	1.5	2	2
Maximum power consumption hp	2.8	2.8	3.5	3.5
Maximum power consumption kW	2.1	2.1	2.6	2.6
Power factor	0.73	0.77	0.79	0.82
Starting	ACL	ACL	ACL	ACL
Nominal speed rpm	3480	3480	3480	3480
Insulation class	F	F	F	F
Max. starts per hour 1/h	20	20	20	20
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of power cable ft	25	25	25	25
Length of power cable m	8	8	8	8
Cable type	NSSHÖU	NSSHÖU	NSSHÖU	NSSHÖU
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>				
Motor leakage detection	•	•	•	•
Thermal protection	N.C. Contact	N.C. Contact	N.C. Contact	N.C. Contact
Explosion protection	FM	FM	FM	FM

To connect the units to an A.C. system a frequency converter (VFD) can be used on request. For this please contact the manufacturer.

# Sewage pumps – standard range



## Submersible grinder pumps with macerator

Sewage pumps – standard range

### Technical data Wilo-Drain MTS 40E

	MTS 40E143.80/40	MTS 40E143.80/40	MTS 40E165.80/54	MTS 40E165.80/54
	3~230 V, 60 Hz	3~460 V, 60 Hz	3~230 V, 60 Hz	3~460 V, 60 Hz
<b>Unit</b>				
Discharge size mm	40	40	40	40
Max. volume flow US GPM	80	80	80	80
Max. volume flow l/s	5	5	5	5
Max. total dynamic head ft	143	143	165	165
Max. total dynamic head m	44	44	50	50
Operation mode (submerged)	S1	S1	S1	S1
Operation mode (non-submerged)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. submersion ft	33	33	33	33
Max. submersion m	10	10	10	10
Fluid temperature °F	37 ... 104	37 ... 104	37 ... 104	37 ... 104
Fluid temperature °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. lbs	85	85	85	85
Weight approx. kg	39	39	39	39
<b>Motor data</b>				
Full load amps A	12.4	6.1	14.2	6.8
Rated motor power (per motor) hp	4.0	4.0	5.4	5.4
Rated motor power (per motor) kW	3	3	4	4
Maximum power consumption hp	5.1	5.1	6.3	6.3
Maximum power consumption kW	3.8	3.8	4.7	4.7
Power factor	0.77	0.85	0.83	0.88
Starting	ACL	ACL	ACL	ACL
Nominal speed rpm	3480	3480	3480	3480
Insulation class	F	F	F	F
Max. starts per hour 1/h	20	20	20	20
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of power cable ft	25	25	25	25
Length of power cable m	8	8	8	8
Cable type	NSSHÖU	NSSHÖU	NSSHÖU	NSSHÖU
Cable cross-section mm <sup>2</sup>	7G2,5	7G1,5	7G2,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>				
Motor leakage detection	•	•	•	•
Thermal protection	N.C. Contact	N.C. Contact	N.C. Contact	N.C. Contact
Explosion protection	FM	FM	FM	FM

To connect the units to an A.C. system a frequency converter (VFD) can be used on request. For this please contact the manufacturer.

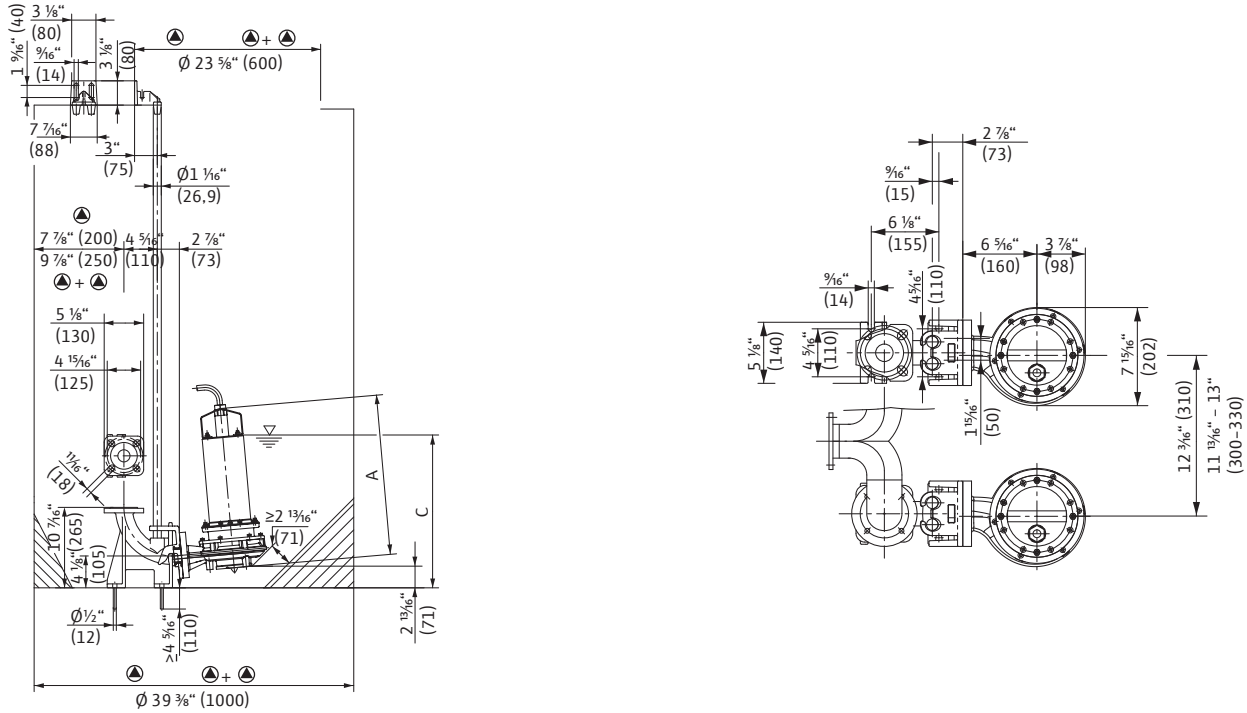


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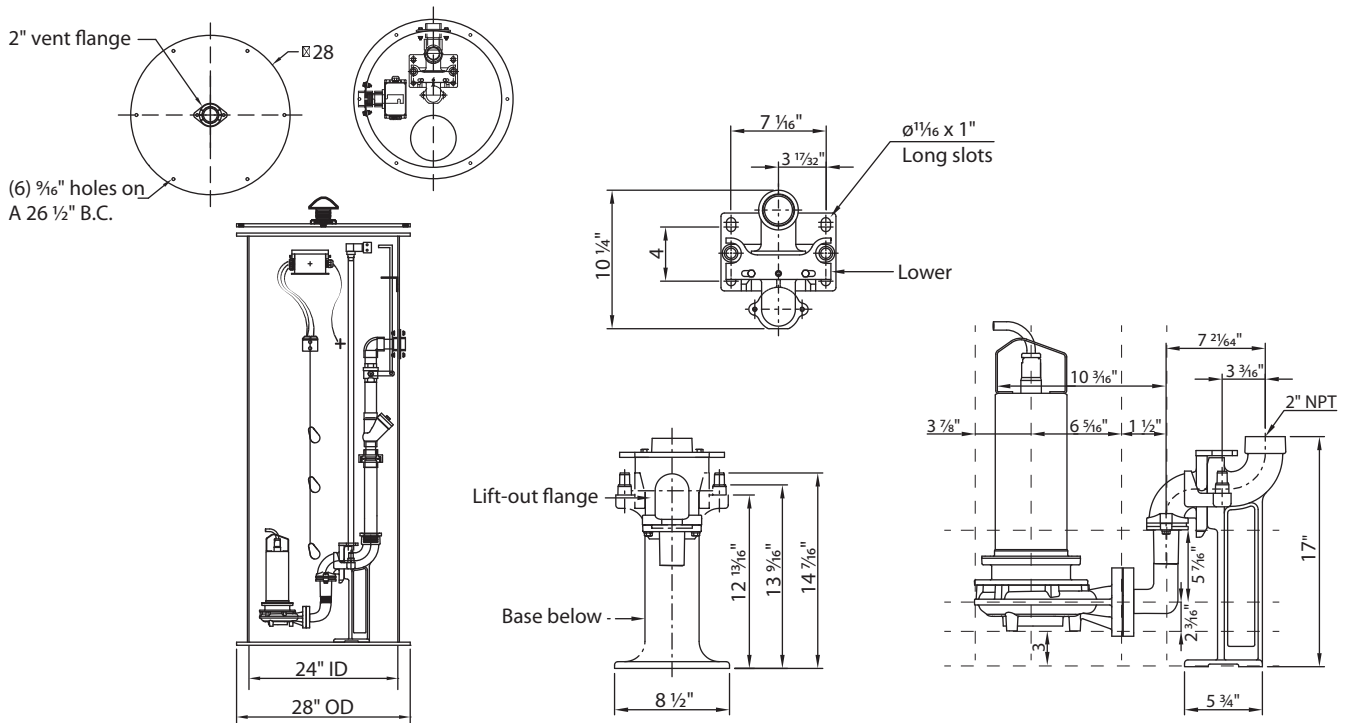
Submersible grinder pumps with macerator

## Dimensions Wilo-Drain MTS

**Dimension drawing Wilo-Drain MTS 40/MTS 40E – DN 40 (1½") Dual Guide Suspension Device**



**Dimension drawing Wilo-Drain MTS 40 / MTS 40E – optional Package Basin (Simplex & Duplex Available)**



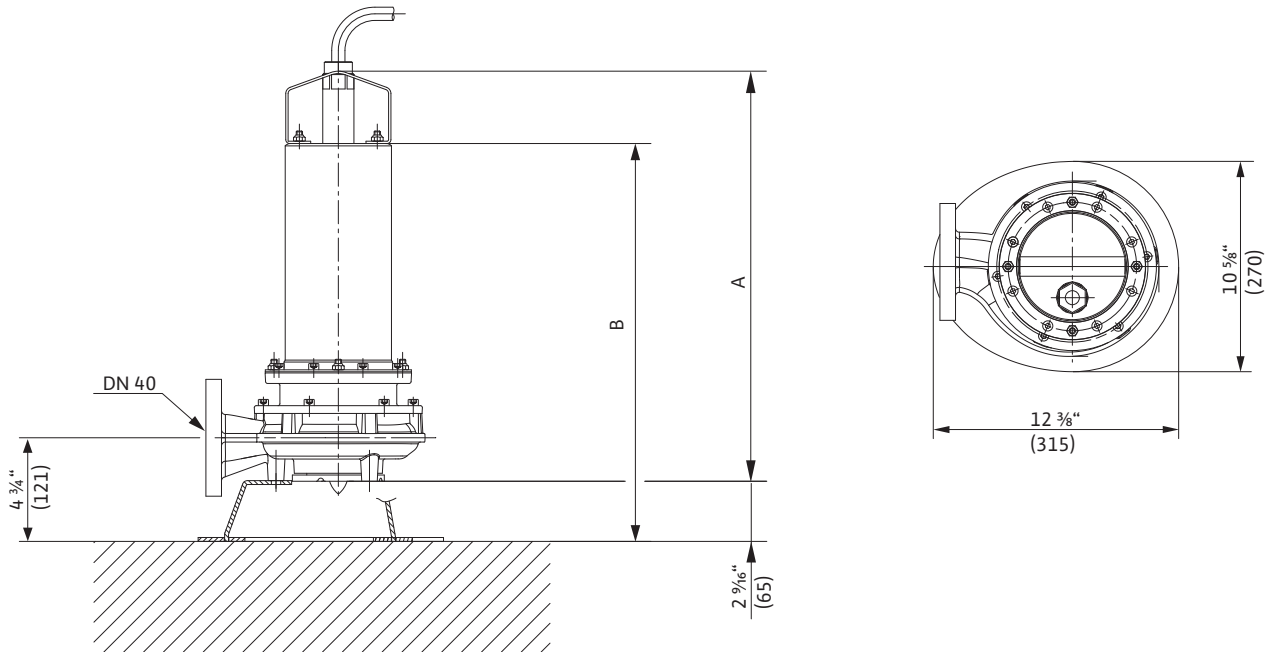
# Sewage pumps – standard range

Submersible grinder pumps with macerator



## Dimensions Wilo-Drain MTS

Dimension drawing Wilo-Drain MTS 40 / MTS 40E – portable wet well installation



### Dimensions

Wilo-Drain...	Power connection	Dimensions					
		A		B		C	
		"	mm	"	mm	"	mm
MTS 40/95	1~230 V, 60 Hz	19 <sup>1</sup> / <sub>4</sub>	489	18 <sup>1</sup> / <sub>4</sub>	464	17 <sup>7</sup> / <sub>8</sub>	454
MTS 40/95	3~460 V, 60 Hz	20 <sup>1</sup> / <sub>16</sub>	509	19 <sup>1</sup> / <sub>16</sub>	484	18 <sup>11</sup> / <sub>16</sub>	474
MTS 40/95	3~230 V, 60 Hz	20 <sup>1</sup> / <sub>16</sub>	509	19 <sup>1</sup> / <sub>16</sub>	484	18 <sup>11</sup> / <sub>16</sub>	474
MTS 40/120	3~460 V, 60 Hz	20 <sup>1</sup> / <sub>16</sub>	509	19 <sup>1</sup> / <sub>16</sub>	484	18 <sup>11</sup> / <sub>16</sub>	474
MTS 40/120	3~230 V, 60 Hz	20 <sup>1</sup> / <sub>16</sub>	509	19 <sup>1</sup> / <sub>16</sub>	484	18 <sup>11</sup> / <sub>16</sub>	474
MTS 40/143	3~460 V, 60 Hz	21 <sup>5</sup> / <sub>8</sub>	549	20 <sup>5</sup> / <sub>8</sub>	524	20 <sup>1</sup> / <sub>4</sub>	514
MTS 40/143	3~230 V, 60 Hz	21 <sup>5</sup> / <sub>8</sub>	549	20 <sup>5</sup> / <sub>8</sub>	524	20 <sup>1</sup> / <sub>4</sub>	514
MTS 40/165	3~460 V, 60 Hz	21 <sup>5</sup> / <sub>8</sub>	549	20 <sup>5</sup> / <sub>8</sub>	524	20 <sup>1</sup> / <sub>4</sub>	514
MTS 40/165	3~230 V, 60 Hz	21 <sup>5</sup> / <sub>8</sub>	549	20 <sup>5</sup> / <sub>8</sub>	524	20 <sup>1</sup> / <sub>4</sub>	514
MTS 40E95.80/20	3~230 V, 60 Hz	20 <sup>5</sup> / <sub>8</sub>	524	19 <sup>5</sup> / <sub>8</sub>	499	19 <sup>1</sup> / <sub>4</sub>	489
MTS 40E95.80/20	3~460 V, 60 Hz	20 <sup>5</sup> / <sub>8</sub>	524	19 <sup>5</sup> / <sub>8</sub>	499	19 <sup>1</sup> / <sub>4</sub>	489
MTS 40E120.80/27	3~230 V, 60 Hz	20 <sup>5</sup> / <sub>8</sub>	524	19 <sup>5</sup> / <sub>8</sub>	499	19 <sup>1</sup> / <sub>4</sub>	489
MTS 40E120.80/27	3~460 V, 60 Hz	20 <sup>5</sup> / <sub>8</sub>	524	19 <sup>5</sup> / <sub>8</sub>	499	19 <sup>1</sup> / <sub>4</sub>	489
MTS 40E143.80/40	3~230 V, 60 Hz	21 <sup>5</sup> / <sub>8</sub>	549	20 <sup>5</sup> / <sub>8</sub>	524	20 <sup>1</sup> / <sub>4</sub>	514
MTS 40E143.80/40	3~460 V, 60 Hz	21 <sup>5</sup> / <sub>8</sub>	549	20 <sup>5</sup> / <sub>8</sub>	524	20 <sup>1</sup> / <sub>4</sub>	514
MTS 40E165.80/54	3~230 V, 60 Hz	21 <sup>5</sup> / <sub>8</sub>	549	20 <sup>5</sup> / <sub>8</sub>	524	20 <sup>1</sup> / <sub>4</sub>	514
MTS 40E165.80/54	3~460 V, 60 Hz	21 <sup>5</sup> / <sub>8</sub>	549	20 <sup>5</sup> / <sub>8</sub>	524	20 <sup>1</sup> / <sub>4</sub>	514