








## **Welcome to Grindex Pump handbook!**

With this handbook we want to share some of our wide experience in pumping with submersible pumps. You will find an overview of all Grindex pumps with technical details and a pump school, intended to help pump users with common matters in pumping with submersible pumps. The handbook also contains more sophisticated technical information, like pH tables and graphs that show friction losses in pipes and hoses.

We are sure you will find this handbook handy. This handbook is also available for download from our website, [www.grindex.com](http://www.grindex.com). If you need more copies, please contact Grindex.

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# Drainage pumps

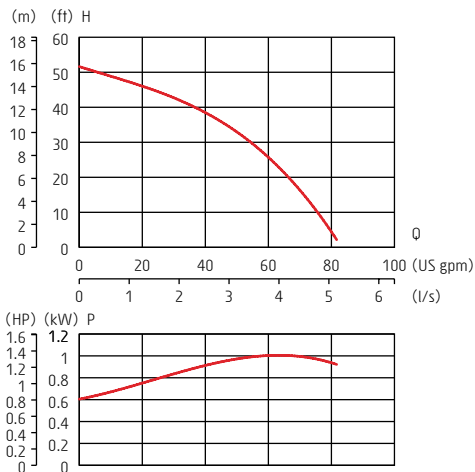
**Grindex drainage pumps are designed for professional use in tough applications like mines, construction sites, tunnel sites and other demanding industries.**

They are designed for:

- Pumping water that may contain solids – up to the size of the strainer holes
- Pumping water with abrasive solids
- Pumping ground water
- Pumping raw water
- Pumping spillage water

Grindex drainage pumps are designed for continuous, unattended operation. They have proven their reliability and dependable performance in demanding areas like building and construction, mining, tunnelling, quarries, industries and rental applications.

# MINI



## Technical data

1~

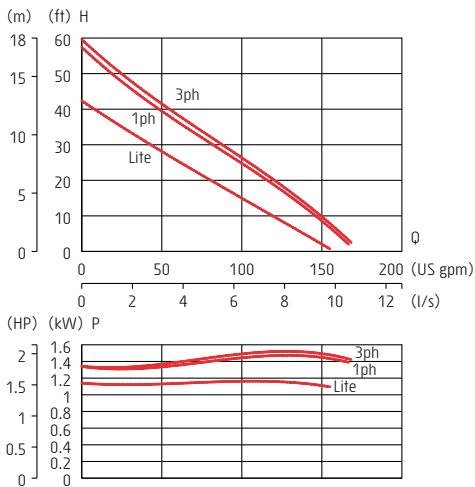
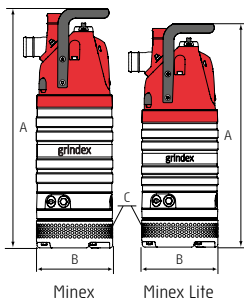
Discharge connection	2"
Rated output	1.1 HP (0.82kW)
Max power consumption	1.1 kW
Shaft speed	3400 RPM
Rated current at 115 V	9.8A
Rated current at 230 V	4.8A

**A:** 17.3" (440 mm) **B:** 7.3" (185 mm)

**C:** 0.2 x 0.4" (5x11 mm) **Weight:** 32 lbs (14.5 kg)

Specifications can be changed without notice.

## MINEX



Also available in MSHA-approved design - US only

Technical data	Minex Lite	1-ph	3-ph
Discharge connection	2"	2"	2"
Rated output	1.3 HP (0.97 kW)	2.0 HP (1.5 kW)	1.9 HP (1.4 kW)
Max power consumption	1.3 kW	1.8 kW	1.8 kW
Shaft speed	3400 RPM	3460 RPM	3330 RPM
Rated current at 115 V	11 A	-	-
Rated current at 230 V	5.6 A	8.4 A	5.2 A
Rated current at 460 V	-	-	2.6 A
Rated current at 575 V	-	-	2.1 A

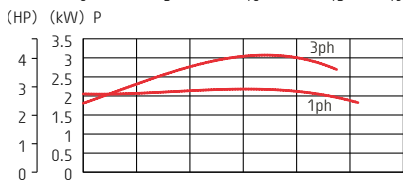
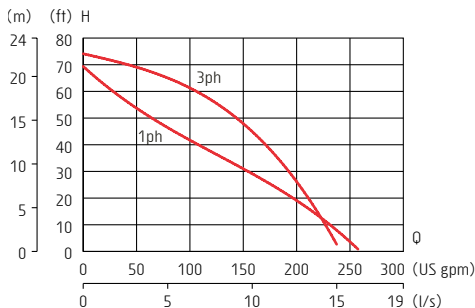
**1-ph (1.5 kW/2.0 HP):** A: 24" (610 mm) B: Ø 7.7" (195 mm) C: Ø 0.3" (7.5 mm)

**Weight:** 54 lbs (24 kg)

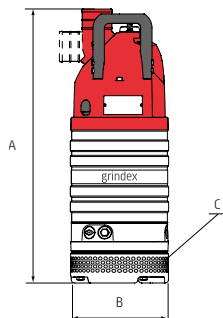
**Minex Lite (1-ph 0.97 kW/1.3 HP) and 3-ph:** A: 22.4" (570 mm) B: Ø 7.7" (195 mm) C: Ø 0.3" (7.5 mm)

**Weight:** 47 lbs (21 kg)

## MINETTE

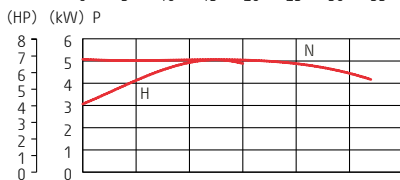
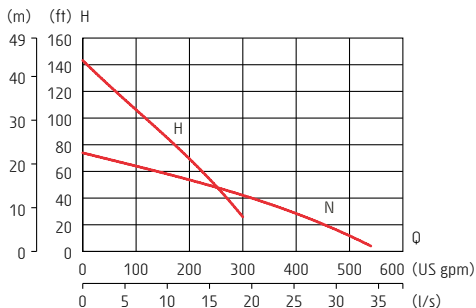
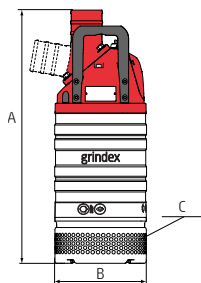


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Technical data	1-ph	3-ph
Discharge connection	3"	3"
Rated output	2.4 HP (1.8 kW)	3.5 HP (2.6 kW)
Max power consumption	2.2 kW	3.1 kW
Shaft speed	3420 RPM	3410 RPM
Rated current at 230 V	9.9 A	9.5 A
Rated current at 460 V	-	4.7 A
Rated current at 575 V	-	3.6 A
<b>A:</b> 26.25" (667 mm) <b>B:</b> Ø 9.45" (240 mm) <b>C:</b> Ø 0.35" (9 mm)		
<b>Weight:</b> 67 lbs (30 kg) (1-ph), 71 lbs (32 kg) (3-ph)		

# MINOR



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Technical data	N	H
Discharge connection	4"	3"
Rated output	6.0 HP (4.4 kW)	6.0 HP (4.4 kW)
Max power consumption	5.2 kW	5.2 kW
Shaft speed	3500 RPM	3500 RPM
Rated current at 460 V	7.3 A	7.3 A
Rated current at 575 V	5.8 A	5.8 A

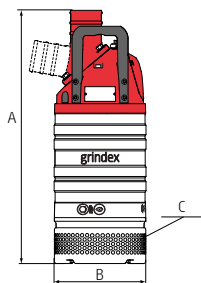
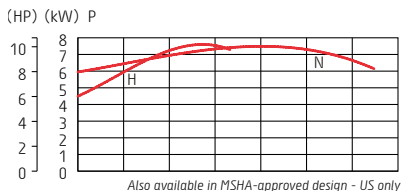
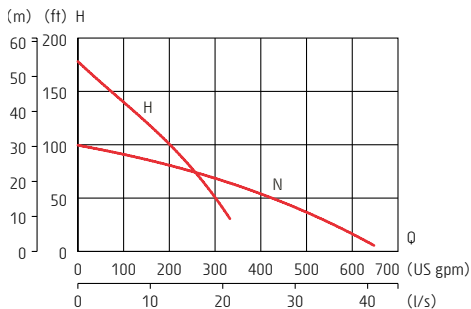
**A:** 31.2" (793 mm) **B:** Ø 11.3" (286 mm) **C:** Ø 0.4" (10 mm)

**Weight:** 116 lbs (52 kg)

Specifications can be changed without notice.



## MAJOR



## Technical data

## N

## H

Discharge connection

4"

3"

Rated output

8.9 HP (6.6 kW)

8.9 HP (6.6 kW)

Max power consumption

7.7 kW

7.7 kW

Shaft speed

3500 RPM

3500 RPM

Rated current at 460 V

11 A

11 A

Rated current at 575 V

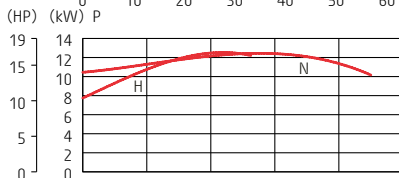
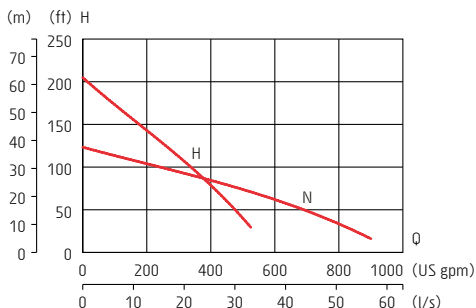
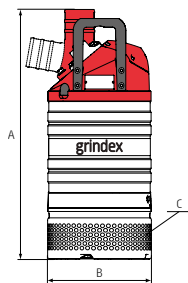
8.5 A

8.5 A

**A:** 31.2" (793 mm) **B:** Ø 11.3" (286 mm) **C:** Ø 0.4" (10 mm)**Weight:** 119 lbs (54 kg)

Specifications can be changed without notice.

## MASTER



Also available in MSHA-approved design - US only

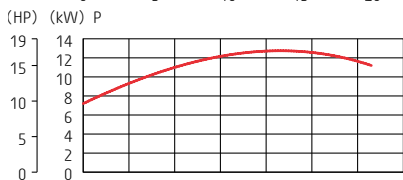
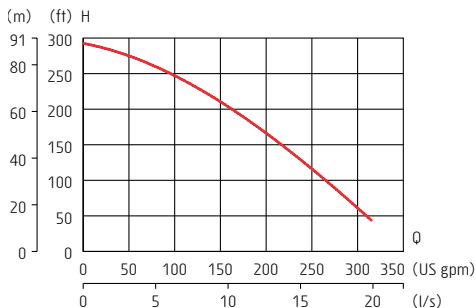
Technical data	N	H
Discharge connection	6"	4"
Rated output	15 HP (11 kW)	15 HP (15 kW)
Max power consumption	13 kW	13 kW
Shaft speed	3465 RPM	3465 RPM
Rated current at 460 V	18 A	18 A
Rated current at 575 V	14 A	14 A

**A:** 32.8" (832 mm) **B:** Ø 13.6" (346 mm) **C:** Ø 0.4" (10 mm)

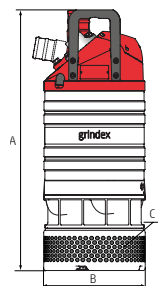
**Weight:** 178 lbs (80 kg)

Specifications can be changed without notice.

## MASTER SH



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### Technical data

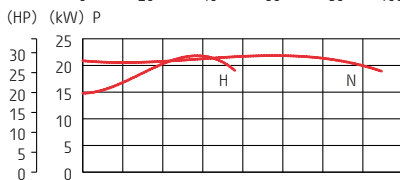
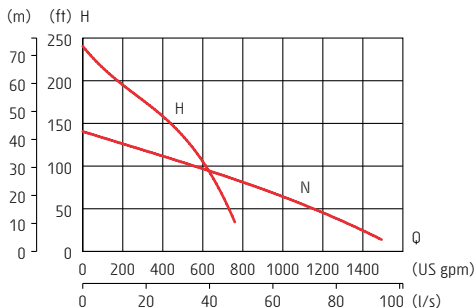
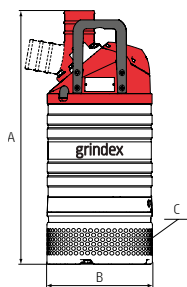
Discharge connection	3"
Rated output	15 HP (11 kW)
Max power consumption	13 kW
Shaft speed	3465 RPM
Rated current at 460 V	18 A
Rated current at 575 V	14 A

**A:** 35" (887 mm) **B:** Ø 13 3/4" (346 mm) **C:** Ø 0.4" (10 mm)

**Weight:** 217 lbs (98 kg)

Specifications can be changed without notice.

# MATADOR



Also available in MSHA-approved design - US only

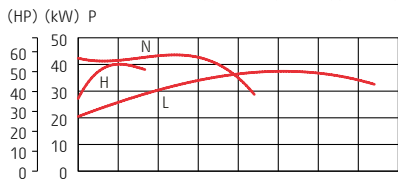
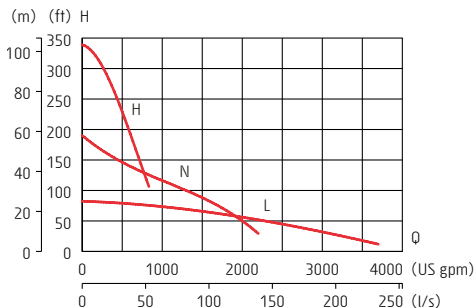
Technical data	N	H
Discharge connection	6"	4"
Rated output	27 HP (20 kW)	27 HP (20 kW)
Max power consumption	22 kW	22 kW
Shaft speed	3500 RPM	3500 RPM
Rated current at 460 V	31 A	31 A
Rated current at 575 V	25 A	25 A

**A:** 37.6" (954 mm) **B:** Ø 15.5" (395 mm) **C:** Ø 0.47" (12 mm)

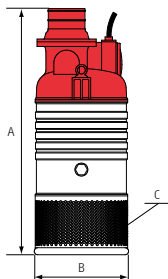
**Weight:** 318 lbs (143 kg)

Specifications can be changed without notice.

## MAXI



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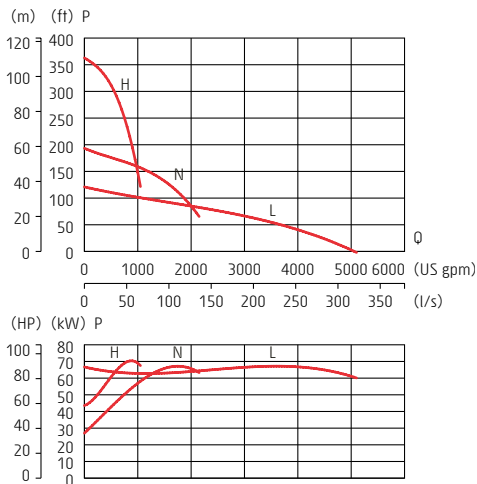
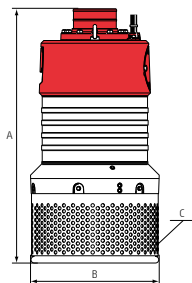
Technical data	N	H	L
Discharge connection	8"	4"	8"
Rated output	58 HP (43 kW)	58 HP (43 kW)	50 HP (37kW)
Max power consumption	48 kW	48 kW	42 kW
Shaft speed	3545 RPM	3545 RPM	1765 RPM
Rated current at 460 V	65 A	65 A	64 A
Rated current at 575 V	52 A	52 A	48 A

**A:** 50" (1345 mm) **B:** Ø 20" (510 mm) **C:** Ø 0.47" (12 mm)

**Weight:** 633 lbs (285 kg)

Specifications can be changed without notice.

## MAGNUM

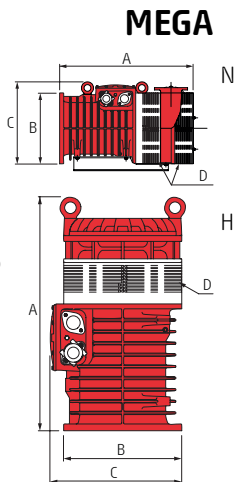
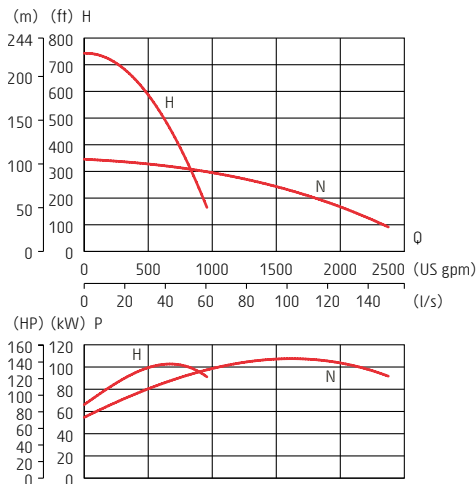


Technical data	N	H	L
Discharge connection	8"	6"	10"
Rated output	85 HP (67 kW)	85 HP (67 kW)	85 HP (67 kW)
Max power consumption	73 kW	75 kW	73 kW
Shaft speed	1770 RPM	3540 RPM	1770 RPM
Rated current at 460 V	107 A	100 A	107 A
Rated current at 575 V	85 A	81 A	85 A

**A:** 59" (1475 mm) **B:** Ø 30" (750 mm) **C:** Ø 0.47" (12 mm)

**Weight:** 1190 lbs (540 kg)

*Specifications can be changed without notice.*



Technical data	N	H
Discharge connection	6" (DN150)	4" (DN100)
Rated output	140 HP (104 kW)	140 HP (104 kW)
Max power consumption	110 kW	110 kW
Shaft speed per min	3560 RPM	3560 RPM
Rated current at 460 V	148 A	148 A
Rated current at 575 V	118 A	118 A

**A:** N: 46.5" (1180 mm) H: 49" (1245 mm) **B:** 24" (610 mm) **C:** H: 26.8" (680 mm), N: 30.3" (770 mm) **D:** 0.4" x 0.4" (10x10 mm) **Weight:** N: 1984 lbs (900 kg) H: 2167 lbs (985 kg)

*Specifications can be changed without notice.*

## Materials in drainage pumps

	Mini	Minex	Minette	Minor	Major	Master	Master SH	Matador	Maxi	Magnum	Mega
<b>Material</b>											
<b>Upper seal</b>											
Tungsten carbide - Tungsten carbide								•	•	•	•
Tungsten carbide - Aluminum oxide		•	•	•	•	•	•				
Carbon - Aluminum oxide	•										
<b>Lower seal</b>											
Tungsten carbide - Tungsten carbide									•	•	•
Silicon carbide - Silicon carbide	•	•	•	•	•	•	•	•			
<b>Casted parts</b>											
Aluminum	•	•	•	•	•	•	•	•	•	•	
Cast iron											•
<b>Stator housing</b>											
Aluminum	•	•	•	•	•	•	•		•	•	
Cast iron								•			•
<b>Outer casing</b>											
Stainless steel		•	•	•	•	•	•	•	•	•	
Aluminum	•										
Cast iron											•

Specifications can be changed without notice.



	Mini	Minex	Minette	Minor	Major	Master	Master SH	Matador	Maxi	Magnum	Mega
<b>Material</b>											
<b>Motor shaft</b>											
Stainless steel	•	•	•	•	•	•	•	•	•	•	•
<b>Impeller</b>											
Hard-Iron™		•	•	•	•	•	•	•	•	•	•
Polyurethane	•										
<b>Suction cover</b>											
Hard-Iron™	-		3~	•	•	•	•	•			
<b>Lower diffuser</b>											
Nitrile rubber		•	1~					•	○		•
Polyurethane	•								•	•	
<b>Diffuser ring</b>											
Nitrile rubber		•	•	•	•	•		•	○		•
Polyurethane									•	•	
<b>Screws and nuts</b>											
Stainless steel	•	•	•	•	•	•	•	•	•	•	•
<b>O-rings</b>											
Nitrile rubber	•	•	•	•	•	•	•	•	•	•	•

Specifications can be changed without notice.

# Sludge pumps

**Grindex sludge pumps are designed for professional use in tough applications like mines, construction sites, tunnel sites and other demanding industries.**

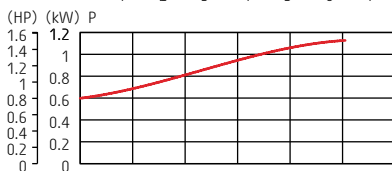
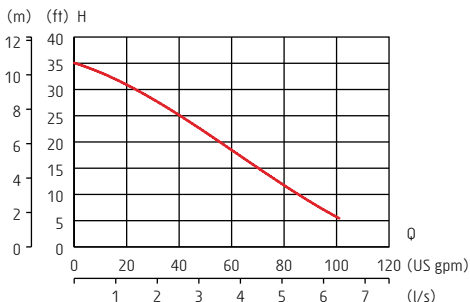
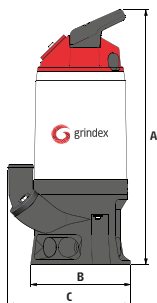
They are designed for:

- Pumping water with high content of solids, up to the size of 3.2" (80 mm).
- Pumping water which contains abrasive particles
- Pumping different types of mud and sludge
- Pumping light slurry

The pumps are designed for continuous, unattended operation. They have proven their reliability and dependable performance in demanding areas like building and construction, mining, tunnelling, quarries, industries, car washes and rental applications.



# SOLID



## Technical data

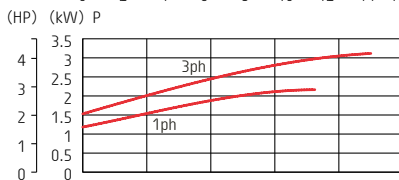
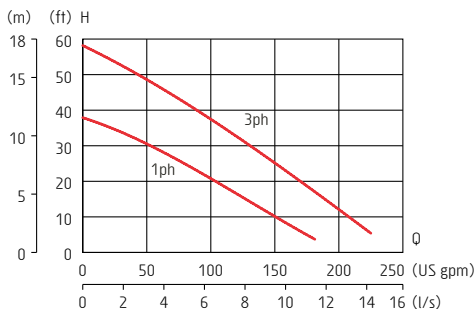
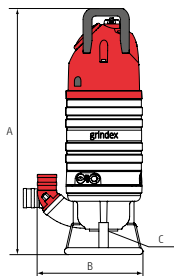
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Discharge connection	2"
Rated output	1.1 HP (0.82 kW)
Max power consumption	1.1 kW
Shaft speed 2	3400 RPM
Rated current at 115 V	9.8 A
Rated current at 230 V	4.8 A

**A:** 20.1" (510 mm) **B:** Ø 7.9" (200 mm) **C:** 11" (280 mm)  
**D:** Ø 1.5" (38 mm) **Weight:** 37.5 lbs (17 kg)

*Specifications can be changed without notice.*

# SALVADOR



Also available in MSHA-approved design - US only

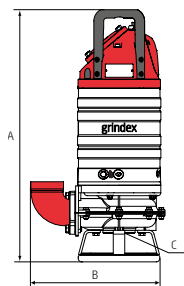
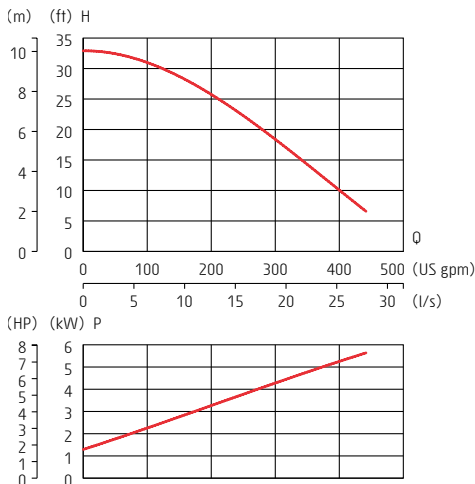
Technical data	1-ph	3-ph
Discharge connection	3"	3"
Rated output	2.4 HP (1.8 kW)	3.5 HP (2.6 kW)
Max power consumption	2.2 kW	3.1 kW
Shaft speed	3420 RPM	3420 RPM
Rated current at 230 V	9.9 A	9.5 A
Rated current at 460 V	-	4.7 A
Rated current at 575 V	-	3.6 A

**A:** 30.1" (766 mm) **B:** Ø 14.8" (375 mm) **C:** Ø 2" (50 mm)

**Weight:** 75 lbs (34 kg)

Specifications can be changed without notice.

## SENIOR



## Technical data

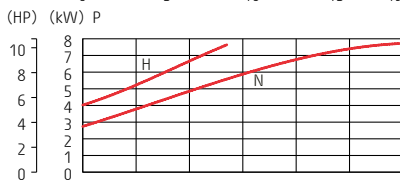
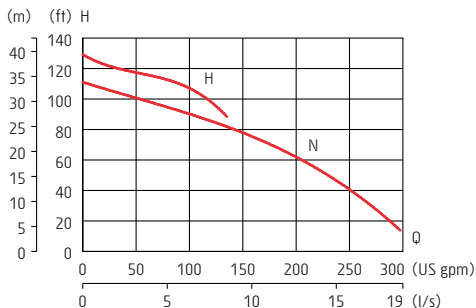
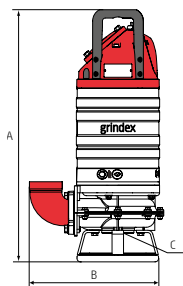
Discharge connection	4"
Rated output	6.0 HP (4.5 kW)
Max power consumption	5.7 kW
Shaft speed	1700 RPM
Rated current at 460 V	8.6 A
Rated current at 575 V	6.9 A

**A:** 34.6" (879 mm) **B:** Ø 18.9" (480 mm) **C:** Ø 3.2" (80 mm)

**Weight:** 126 lbs (57 kg)

*Specifications can be changed without notice.*

## SANDY



Also available in MSHA-approved design - US only

Technical data	N	H
Discharge connection	3"	3"
Rated output	8.9 HP (6.6 kW)	8.9 HP (6.6 kW)
Max power consumption	7.7 kW	7.7 kW
Shaft speed	3500 RPM	3500 RPM
Rated current at 460 V	11 A	11 A
Rated current at 575 V	8.5A	8.5 A

**A:** 34.6" (879 mm) **B:** 18.9" (Ø 480 mm) **C:** N: 1.8" (Ø 46 mm), H: 1.3" (Ø 32 mm)

**Weight:** 126 lbs (57 kg)

Specifications can be changed without notice.

# Materials in sludge pumps

	Solid	Salvador	Senior	Sandy
<b>Material</b>				
<b>Upper seal</b>				
Tungsten carbide - Aluminum oxide		•	•	•
Carbon - Aluminum oxide	•			
<b>Lower seal</b>				
Silicon carbide - Silicon carbide	•	•	•	•
<b>Stator housing</b>				
Aluminum	•	•	•	•
<b>Outer casing</b>				
Stainless steel		•	•	•
Aluminum	•			
<b>Motor shaft</b>				
Stainless steel	•	•	•	•
<b>Impeller</b>				
Hard-Iron™		•	•	•
Polyurethane	•			
<b>Pump housing</b>				
Polyurethane	•			
Aluminum with polyurethane lining		•	•	•
<b>Screws and nuts</b>				
Stainless steel	•	•	•	•
<b>O-rings</b>				
Nitrile rubber	•	•	•	•
<b>Casted parts</b>				
Aluminum	•	•	•	•

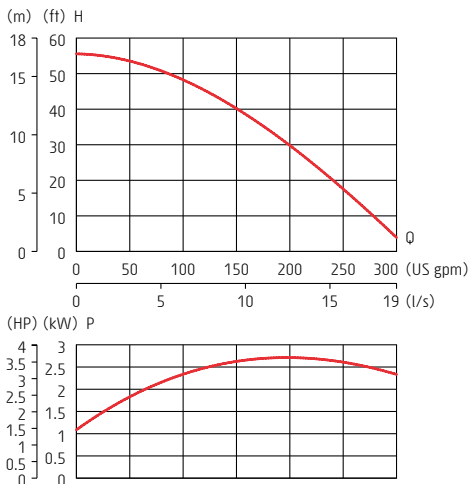
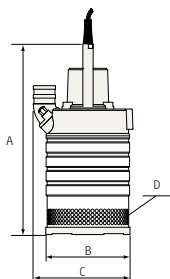
### Drainage pumps made of stainless steel, INOX

These pumps are designed to meet the tough requirements from mines, construction sites, landfill sites and other applications that deal with corrosive water. One application is in mines where the water becomes caustic and destroys conventional pumps in matter of days. The pumps may also be used in applications where saltwater is pumped, like ship-yards, fish farms, construction works in harbours and offshore projects. All INOX pumps can handle pH values from 2 - 10. They can also be equipped with zinc anodes for extra protection.





## MINETTE INOX



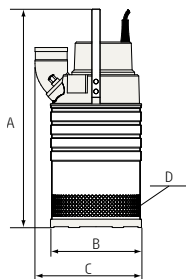
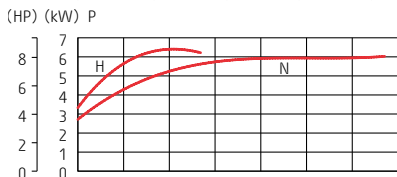
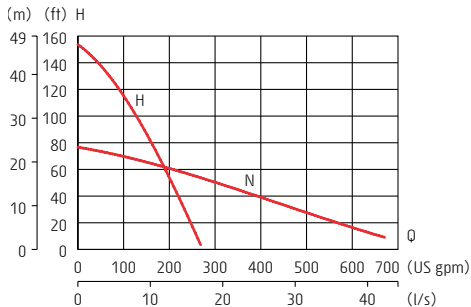
### Technical data

Discharge connection	3"
Rated output	3.1 HP (2.3 kW)
Max power consumption	2.9 kW
Shaft speed	3320 RPM
Rated current at 460 V	4.2 A
Rated current at 575 V	3.3 A

**A:** 21" (535 mm) **B:** Ø 9.5" (240 mm) **C:** 11.75" (295 mm) **D:** Ø 0.3" (7.5 mm) **Weight:** 97 lbs (44 kg)

*Specifications can be changed without notice.*

## MAJOR INOX

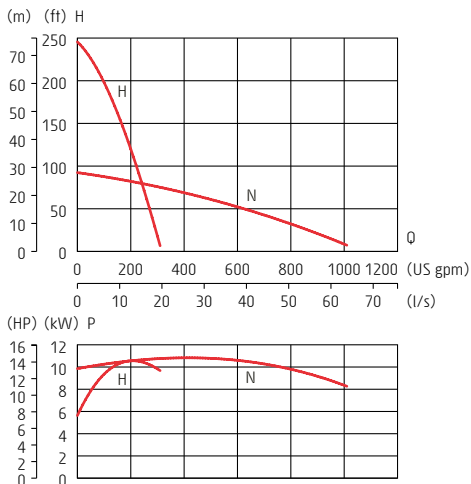
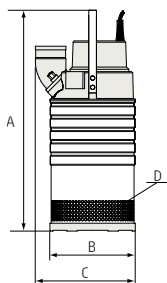


Technical data	N	H
Discharge connection	4"	3"
Rated output	9.0 HP (6.7 kW)	9.0 HP (6.7 kW)
Max power consumption	7.6 kW	7.6 kW
Shaft speed	3460 RPM	3460 RPM
Rated current at 460 V	11 A	11 A
Rated current at 575 V	8.6 A	8.6 A

**A:** 26" (665 mm) **B:** Ø 11" (280 mm) **C:** 13" (330 mm) **D:** Ø 0.3" (8.5 mm)  
**Weight:** 143 lbs (65 kg)

*Specifications can be changed without notice.*

## MASTER INOX



Technical data	N	H
Discharge connection	4"	3"
Rated output	13 HP (9.7 kW)	13 HP (9.7 kW)
Max power consumption	11 kW	11 kW
Shaft speed	3460 RPM	3460 RPM
Rated current at 460 V	15 A	15 A
Rated current at 575 V	12 A	12 A

**A:** 28" (720 mm) **B:** Ø 11" (280 mm) **C:** 13" (330 mm) **D:** Ø 0.3" (8.5 mm)

**Weight:** N: 170 lbs (77 kg), H: 179 lbs (81 kg)

*Specifications can be changed without notice.*

## Materials in drainage pumps made of stainless steel

	Minette INOX	Major INOX	Master INOX
<b>Material</b>			
<b>Upper seal</b>			
Carbon - silicon carbide	•	•	•
<b>Lower seal</b>			
Silicon carbide - silicon carbide	•	•	•
<b>Casted parts</b>			
Stainless steel (EN 10283-1.14412)	•	•	•
<b>Outer casing</b>			
Stainless steel (EN 10088-3-1.14436)	•	•	•
<b>Motor shaft</b>			
Stainless steel (EN 10088-3-1.14460)	•	•	•
<b>Impeller</b>			
Stainless steel (EN 10283-1.14412)	•	•	•
<b>Screws and nuts</b>			
Stainless steel (A4)	•	•	•
<b>O-rings</b>			
Viton rubber	•	•	•
<b>Diffusers</b>			
Nitrile rubber	•	•	•

*Specifications can be changed without notice.*

### Sludge pumps made of stainless steel, INOX

Our sludge pumps in stainless steel are used for pumping corrosive fluids with solids in harsh environment. The solids can be up to the size of 2" (50 mm). These pumps are designed to meet the tough requirements from mines, construction sites, landfill sites and other applications that deal with corrosive water. One application is in mines where the water becomes caustic and destroys conventional pumps in matter of days. The pumps may also be used in applications where saltwater is pumped, like shipyards, fish farms, construction works in harbours and offshore projects. All INOX pumps can handle pH values from 2 - 10. They can also be equipped with zinc anodes for extra protection.