

# GRINDEX'S GREAT PUMP GUIDE

PUMP FEATURES AND BENEFITS



*Huge water volumes involve high risk and danger in most industries.  
Whenever and wherever pumps are needed, Grindex gets the job done.*



# Genuine Swedish engineering since 1940

The launch of Grindex's first submersible pumps in 1960 started an era of supplying dewatering pumps to some of the most demanding sites in building and construction, mining, tunneling – and heavy industry. With more than 400,000 pumps delivered, Grindex now leads the world in its field.

We take pride in making high-quality pumps for the toughest environments – pumps designed for continuous, unattended operations, and with an appealing life-cycle cost. We also take pride in several valuable innovations enabled via continuous interaction with distributors and users.

Our knowledge and this joint commitment transformed Grindex into a world-leading company, with an extraordinary local service level – thanks to dedicated representatives.

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In this brochure, you will find an overview of all Grindex pumps, highlighting the specifics of each pump. Hopefully, this will make it easier to choose the pump that suits your application.



# When all parts are as great as the sum

Grindex pumps are all about return on investment. Our renowned, time-tested Swedish engineering and our focus on quality, performance, and durability permeate everything we do – down to every single screw. Our complete commitment and responsibility distinguish us from the rest.

## Low life-cycle cost

Just as only ten percent of an iceberg is visible, only the pump's price tag is obvious at first. However, all recurring costs – installation, operation, inspections, and service – affect the pump's total cost of ownership. With Grindex pumps you minimize the need for maintenance, reduce the number of unplanned and planned service standstills, and experience a prolonged equipment lifespan.

1

### INSTALLATION: JUST PLUG AND PUMP

- ✓ All in the head of the pump – SMART
- ✓ Easy to install, no external starting box needed
- ✓ Ergonomically designed for easier handling

2

### OPERATION: LASTING PERFORMANCE

- ✓ Long-term wear resistance – durable Hard Iron™ impeller
- ✓ Spin-out grooves keep debris from entering the seal
- ✓ Air valve – snoring / dry running capabilities
- ✓ Intelligent protection with SMART
- ✓ High efficiency

⌚ 48 H

Optional express delivery, reaches greater parts of the world within 48 hours

4

### SERVICE: SIMPLIFIED MAINTENANCE

- ✓ Service-friendly with standard service tool
- ✓ Uniform design, service one – service all
- ✓ Fast, easy adjustment of the impeller
- ✓ Few components to maintain
- ✓ Ergonomic design of the strainer

3

### ON SITE INSPECTIONS: SPEEDY CHECK-UPS

- ✓ Quick, easy access
- ✓ Large opening of the electrical compartments for easy access to components
- ✓ Removable design of the strainer for easy control of the hydraulic parts
- ✓ External access for checking the oil and seal

# Network of dedicated people

Grindex exports to more than 100 countries worldwide via about 75 distributors and owns subsidiaries in the US and regional offices in Vietnam, Australia, and South Africa.

Our global customer base requires a strong local presence, because we believe in pulling on our boots and meeting customers in the field. Consequently, we rely heavily on and benefit from local distributors and their expertise. By providing cutting-edge service and support for distributors and customers, we constantly strive to simplify customers' daily work.



## Pioneering technology

Grindex's dedication to develop customized solutions has formed the foundation for several breakthrough innovations. These inventions are now part of all our pumps, and constitute the main factor behind their unbeatable reliability, durability, and dependability. Our pumps simply thrive in harsh conditions.



### SMART – THE INTELLIGENT SYSTEM

Grindex's SMART electronic surveillance system, first developed in 1990, is a vital element in our pumps. With its three-fold motor protection, it shields the pumps from electrical problems.

- ✓ Built-in plug and pump; no need for external start boxes
- ✓ Phase-failure guard protects against phase loss
- ✓ Temperature guard stops the pump if it reaches high temperature
- ✓ Automatic restart after stop
- ✓ Phase-sequence control ensures that impellers turn in right direction



### WEAR / HYDRAULIC PARTS – PROLONG THE LIFESPAN

Thanks to exceptional wear resistance, our wear and hydraulic parts help to prolong the lifespan of Grindex pump equipment, while securing high efficiency.

- ✓ Minimize the performance drop – thanks to innovative design
- ✓ Improve operation and performance in harsh conditions
- ✓ Optimized design and materials for specific applications, e.g. drainage, sludge, and slurry

### AIR VALVE – COOLS THE PUMP

Grindex invented and patented the world's first air valve in 1960. Thanks to the built-in motor protection and the air valve, our pumps run unsupervised for longer periods.

- ✓ Enables pump to run dry for a length of time
- ✓ Minimizes the risk of operation interruptions
- ✓ Minimizes the need for maintenance



# Choose the right pump for your application

Designed for continuous, unattended operation, Grindex's pumps continuously prove their reliability and dependable performance in demanding dewatering environments across the globe. They are all great – but how do you know which is the right one for your job?





### Grindex drainage pumps

Choose when pumping:

- ✓ Water with abrasive solids; up to 12 mm
- ✓ Ground water, raw water, or spillage water
- ✓ Fluids with pH values from 5 to 8

8



### Grindex sludge pumps

Choose when pumping:

- ✓ Water with high content of abrasive solids; up to 80 mm
- ✓ In an environment with different types of mud, sludge, or light slurry
- ✓ Fluids with pH values from 5 to 8

20



### Grindex stainless steel pumps (Inox)

Choose when pumping:

- ✓ Corrosive fluids in harsh environments with solids up to 80 mm
- ✓ Fluids with pH values from 2 to 10

24



### Grindex slurry pumps (Bravo)

Choose when pumping:

- ✓ In abrasive applications requiring pumps with very high durability: quarries, mines, dredging, setting ponds
- ✓ Fluids with pH values from 5.5 to 14
- ✓ Solids handling up to 50 mm

28

**Primo**, highly compact drainage and sludge pumps (up to 0.8 kW)

32

# Drainage pumps



## Grindex drainage pumps are heavy-duty industrial strength, yet light and highly portable

Grindex's drainage pumps are made for professional use in tough applications like mines, construction sites, tunnel sites, rental applications, and other demanding industries. A drainage pump is suitable when you need to pump large quantities of dirty water: head 15–200 meters, flow 6–350 liters / second with abrasive particles in sizes up to 12 mm. The pumps can run dry without problems – thanks to a unique valve that enables air cooling of the motor – no babysitting needed.





**2022 World Cup metro lines / Qatar**

Doha Metro's new lines will link stadiums for the 2022 World Cup soccer tournament. Upon completion, the metro will consist of 211.9 kilometers of route, across four lines, serving 100 stations. All underground constructions demand drainage pumps—primarily submersible pumps. Here, 110 of Grindex's Matador pumps, the largest drainage pump in a series released in 2013, will be used 30 meters underground for preventing leakage into the construction area.

**Move a tunnel / Sweden**

When steel boxes forming the tunnel of Stockholm City Line (Citybanan) were transported from Estonia to Sweden, Grindex's pumps performed some serious pumping. The pumps were fitted on a barge, which was sunk and raised in order to lift the 107 x 20 x 10 meter boxes several meters above sea level, so that they could be transported through the locks at Södertälje canal and on to Stockholm.

**Coastal safety / Turkey**

Turkey's Directorate General of Coastal Safety (DGSC) assists with and improves navigation safety in Turkey's waters. Grindex's Major, Master, and Matador pumps are in its boats – standing by for any pumping requirements.

**Large-scale water transfer / China**

The Yintao project helps to transport some of the water resources in the south to the northern regions. Grindex's Major pumps were selected for the job, because they are extremely tough drainage pumps and include a revolutionary hydraulic design that ensures high-wear resistance.

**Did you know?****Revolutionary lightweight pump**

Grindex was founded in 1940 by engineers Kristensson and Grähs. When Kristensson came across a new product—a submersible drainage pump—he refined the concept and launched a lightweight pump that could run dry—thanks to the patented air valve.

**1960: Standard, the first pump**

During the early 1960s, Grindex's first pump became two, Minor and Major. Soon, the range expanded to five sizes.



# Small drainage pumps

Micro, Milli, Mini

Grindex's range of small, single phase drainage pumps are compact, lightweight and ultra-portable, aimed at construction, tunneling, mining, and clean-up jobs. Micro, with its low power consumption is ideal when running on a generator. Milli resembles Micro, but enables low suction down to only a few millimeters – thanks to the unique non-return valve. All pumps excel when reliability and easy-handling are essential and are built to handle contaminated water, pH 5–8, and water containing relatively abrasive solids.

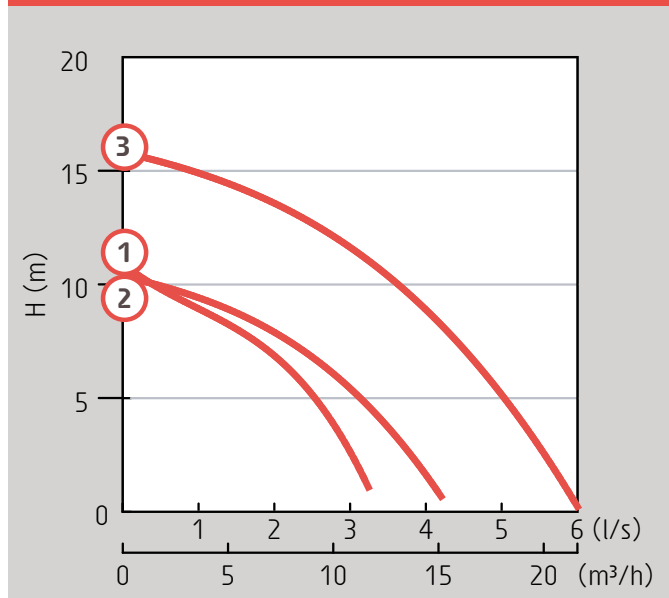


Drainage pumps – Micro, Mini, and Milli

## Technical data – Small drainage pumps 50 Hz

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>1. Micro</b>	2"	1~	0.6	12
<b>2. Milli</b>	2"	1~	0.6	13
<b>3. Mini</b>	2"	1~	1.2	14.5

## Micro – Mini 50 Hz



Solid – sludge pump for larger solids

### Pumping of larger particles

The Solid sludge pump shares functionality with our smaller drainage pumps. For more information about sludge pumps, see page 20.



### AIR VALVE

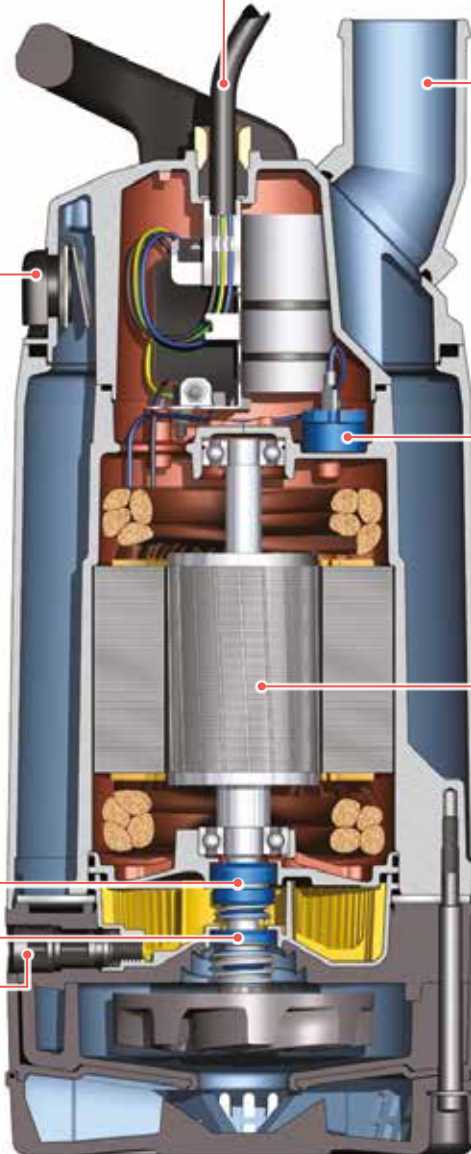
- ✓ Enables the pump to run dry without operation interruptions – thanks to air cooling
- ✓ Grindex invented and patented the world's first air valve in 1960

### DOUBLE MECHANICAL SEAL

- ✓ Lower seal made of silicone carbide
- ✓ Upper seal made of carbon – aluminum oxide

### INSPECTION PLUGS

- ✓ Quick and easy inspection of the seal / oil condition



### 10 METERS OF CABLE

- ✓ H07RN-F, different plugs available, equipped with water cut

### DISCHARGE

- ✓ Easily positioned in both horizontal and vertical position depending on application
- ✓ Threaded or hose connection for outlet

### THERMAL PROTECTION

- ✓ Thermal protection of the motor prevents overheating



### SHAFT UNIT / STATOR

- ✓ Optimized for submersed operations
- ✓ High efficiency thanks to water-cooled design
- ✓ Extended motor lifetime with high-temperature tolerance

## Options



### LEVEL REGULATOR

See page 38.



### LOW SUCTION COLLARS

For temporary low suction applications, Micro and Mini can be equipped with low suction collars allowing down-to-the-floor pumping. For more permanent use, Milli is your choice.

# Medium drainage pumps

Minex, Minette, Minor, Major, Master, Matador

Grindex medium sized drainage pumps are used in applications like tunneling, mining, and construction. The revolutionary hydraulic design ensures high wear resistance and dramatically reduces performance drop due to long time wear.

The internal starter, SMART motor protector, and optional level regulator provide fully automatic protection and control without the need for external starter – plug and pump.



Most Grindex pumps can be converted from N version to H version or vice versa.

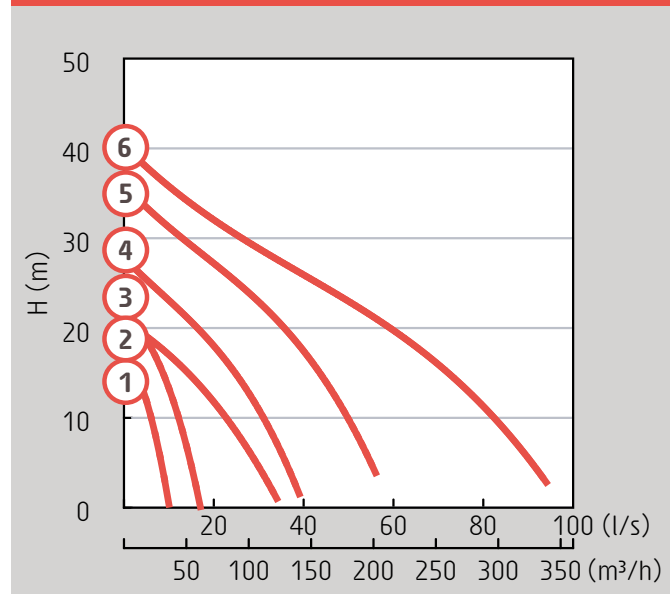
## Technical data – Medium drainage pumps 50 Hz – N versions

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>1. Minex</b>	2"	1~, 3~	1.1–1.6	21.5–25
<b>2. Minette</b>	3"	1~, 3~	1.9–2.7	29
<b>3. Minor N</b>	4"	3~	4.4	50
<b>4. Major N</b>	4"	3~	6.6	50
<b>5. Master N</b>	6"	3~	11.7	80
<b>6. Matador N</b>	6"	3~	20	131

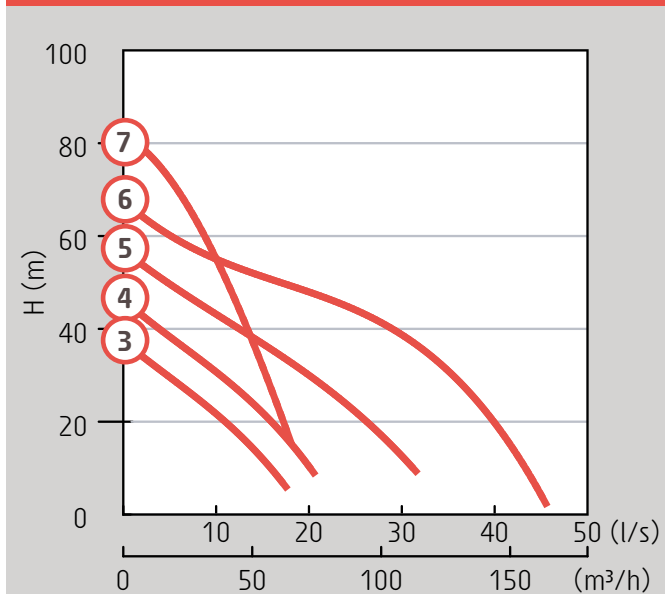
## Technical data – Medium drainage pumps 50 Hz – H versions

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>3. Minor H</b>	3"	3~	4.4	50
<b>4. Major H</b>	3"	3~	6.6	50
<b>5. Master H</b>	4"	3~	11.7	80
<b>6. Matador H</b>	4"	3~	20	131
<b>7. Master SH</b>	3"	3~	11.7	98

### N versions – Minex – Matador – 50 Hz



### H versions – Minor – Matador – 50 Hz





### SOFT STARTER

- ✓ Smoother motor acceleration minimizes current peaks on the power net at start
- ✓ Reduces equipment wear, mechanical stress, and the starting current
- ✓ Optionally replaces the Star / Delta (YD) start and Direct on line (DOL) (Master and Matador)



### AIR VALVE

- ✓ Enables the pump to run dry without operation interruptions – thanks to air cooling
- ✓ Grindex invented and patented the world's first air valve in 1960

### OUTER CASING

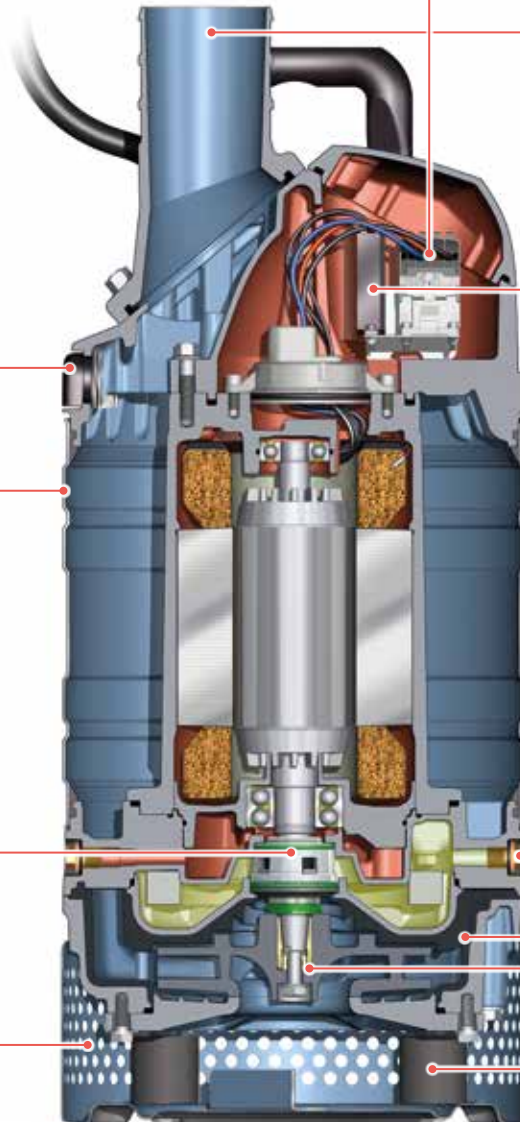
- ✓ Stainless steel
- ✓ Cools the motor, which leads to high efficiency

### CARTRIDGE SEAL

- ✓ Patented, leakage-preventing seal technology (page 39 for details)

### STRAINER

- ✓ Stainless steel
- ✓ Durability – only the size of particles that the pump can handle goes into the strainer



### SMART

- ✓ Grindex's SMART electronic surveillance system (page 5 for details)

### DISCHARGE

- ✓ Easily positioned in both horizontal and vertical position
- ✓ Threaded or hose connection for outlet

### INSPECTION PLUGS

- ✓ Quick and easy inspection of the seal / oil condition

### WEAR PARTS

- ✓ Exceptional wear resistance thanks to closed impeller in Hard Iron™
- ✓ Nitrile or polyurethane (optional)

### SINGLE ADJUSTMENT SLEEVE

- ✓ Quick readjustment to as-new performance (N and H versions)

### SHOCK ABSORBERS

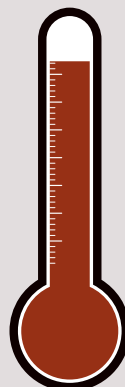
- ✓ Minor to Matador

## Options



### LEVEL REGULATOR

See page 38.



### ZINC ANODES

Our zinc anodes provide protection against galvanic corrosion, mainly in applications involving salt water.

### WARM WATER VERSION

Pumps can be delivered in warm water version 70° C (standard 40° C).



# Large drainage pumps

## Maxi

Over the years, the Maxi pump has proven to be an ideal pump for heavy-duty drainage applications in all kinds of segments. Be it construction, mining or industrial applications, the robust and reliable design combined with ease-of-maintenance make it the pump of choice for hundreds of customers around the world.

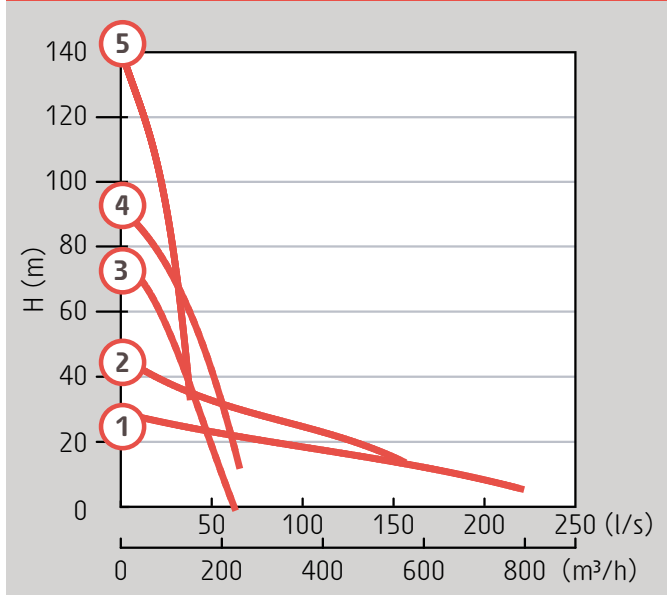


*Maxi H-Lite is built on well-proven hydraulics from Grindex and fills the gap between Matador and popular Maxi.*

### Technical data – Maxi 50 Hz

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>1. Maxi L</b>	8"	3~	33	285
<b>2. Maxi N</b>	8"	3~	41	280
<b>3. Maxi H-Lite</b>	4"	3~	28	210
<b>4. Maxi H</b>	4"	3~	41	240
<b>5. Maxi SH</b>	4"	3~	41	270

### Maxi 50 Hz





**AIR VALVE**

- ✓ Enables the pump to run dry without operation interruptions – thanks to air cooling
- ✓ Grindex invented the world's first air valve in 1960

**THERMAL PROTECTION**

- ✓ Thermal protection of the motor prevents overheating

**INSPECTION PLUGS**

- ✓ Quick and easy inspection of the seal / oil condition

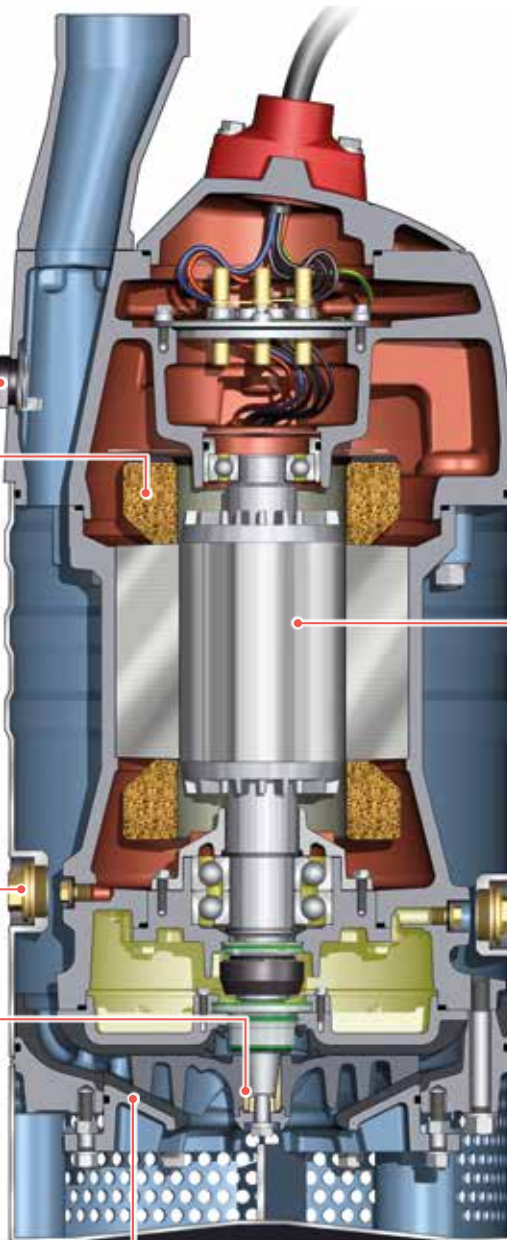


**SINGLE ADJUSTMENT SLEEVE**

- ✓ Quick readjustment to as-new performance (N and H versions)

**WEAR PARTS**

- ✓ Polyurethane or nitrile (optional)



**PUMP STARTER**

- ✓ Series GSP 32-100 is a 3-phase starter panel for manual operation (page 19 for details)



**SHAFT UNIT / STATOR**

- ✓ Optimized for submersed operations
- ✓ High efficiency thanks to water-cooled design
- ✓ Extended motor lifetime with high-temperature tolerance
- ✓ Class H standards; best insulation available – thanks to capillary impregnation

**Options**

**TANDEM CONNECTIONS**

See page 33.



**ZINC ANODES**  
See page 33.



**WEAR PARTS / HYDRAULIC PARTS**  
See page 39.



**LEVEL REGULATOR**  
See page 35.



**PUMP RAFT SYSTEM**  
See page 34.

# Large drainage pumps

## Magnum

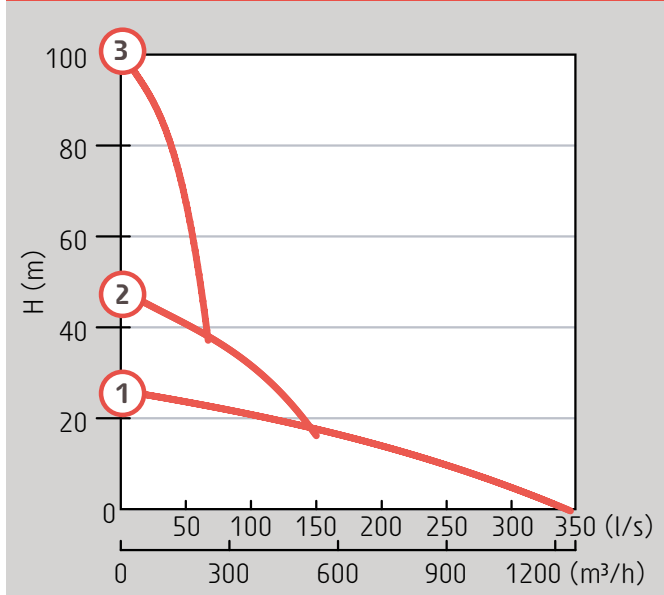
Launched in 2000, the Magnum pump is a durable pump suitable for drainage applications in a variety of segments. No matter if it's within construction, mining or industrial applications, hundreds of customers around the world rely on Magnum to perform the toughest of jobs. Its high-quality, reliable design combined with the ease-of-maintenance make it a great choice.



### Technical data – Magnum 50 Hz

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>1. Magnum L</b>	10"	3~	62	540
<b>2. Magnum N</b>	8"	3~	62	540
<b>3. Magnum H</b>	6"	3~	64	540

### Magnum 50 Hz







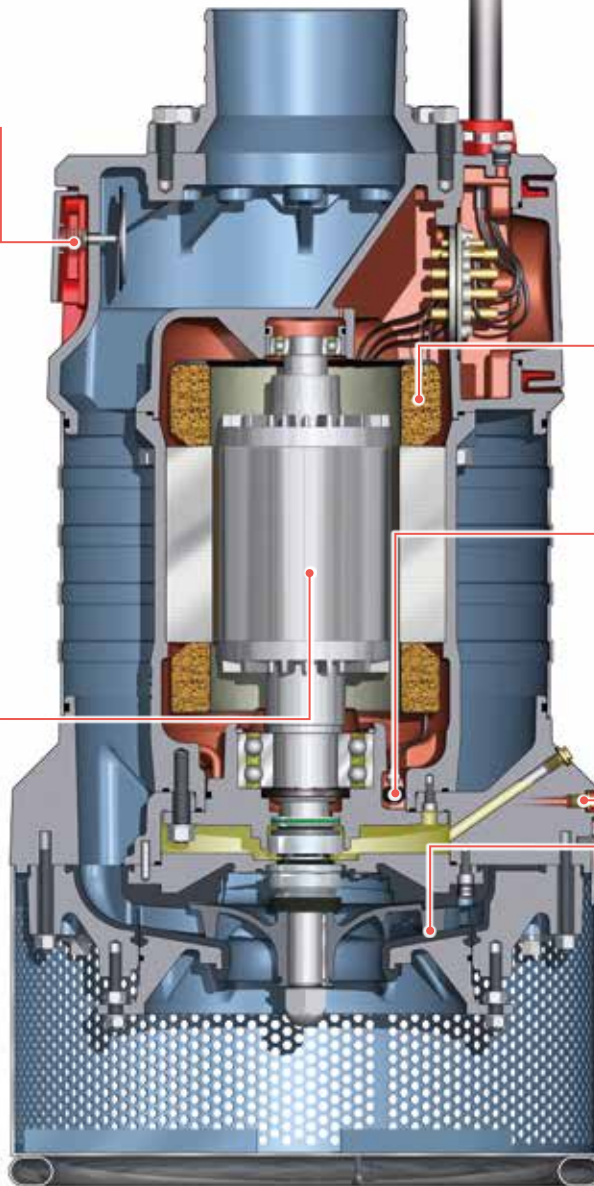
**AIR VALVE**

- ✓ Enables the pump to run dry without operation interruptions – thanks to air cooling
- ✓ Grindex invented and patented the world's first air valve in 1960



**SHAFT UNIT / STATOR**

- ✓ Optimized for submersed operations
- ✓ High efficiency thanks to water-cooled design
- ✓ Extended motor lifetime with high-temperature tolerance
- ✓ Class H standards; best insulation available – thanks to capillary impregnation



**PUMP STARTER**

- ✓ Series GSP 32-170 is a 3-phase starter panel for manual operation (page 19 for details)

**THERMAL PROTECTION**

- ✓ Thermal protection of the motor prevents overheating

**SURVEILLANCE**

- ✓ Leakage sensor

**INSPECTION PLUGS**

- ✓ Quick and easy inspection of the seal / oil condition

**WEAR PARTS**

- ✓ Available in polyurethane

**Options**



**TANDEM CONNECTIONS**  
Available on H version.  
See page 33.



**ZINC ANODES**  
See page 33.



**LEVEL REGULATOR**  
See page 35.



**PUMP RAFT SYSTEM**  
See page 34.

# Large drainage pumps

## Mega

Mega, made of cast iron, is ideal for operations in deep excavations in which very high-head pumping is needed, such as in open pit mines and underground mines. Other typical applications include quarries and tunneling projects. It's designed to handle pH levels 6–13, and zinc anodes are available for extra protection.

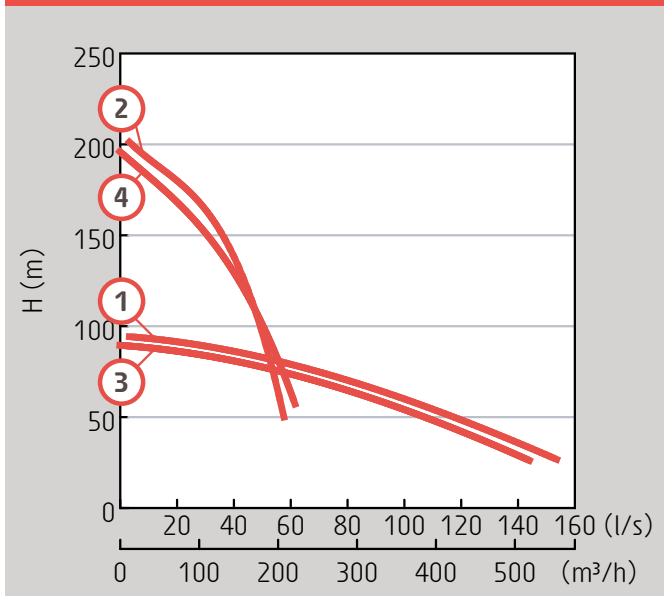


Mega H, high pressure

### Technical data – Mega 50 Hz

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
1. Mega N	6"	3~	95	900
2. Mega H	4"	3~	95	985
3. Mega N Inox	6"	3~	90	925
4. Mega H Inox	4"	3~	90	1015

### Mega 50 Hz



Mega H Inox, high pressure, completely in stainless steel 316, pH 2-10.



### PUMP STARTER

- ✓ Series GSP 32-170 is a 3-phase starter panel for manual operation
- ✓ Automatic duty with level regulators optional
- ✓ Available with DOL or Star / Delta configuration
- ✓ Main supply switch with short circuit and motor overload protection
- ✓ Monitoring of built-in thermal contacts with manual reset
- ✓ Phase guard indicating correct rotation / phase failure
- ✓ Supervision relay for PT 100

### WEAR PARTS

- ✓ Polyurethane or nitrile (option)

### THERMAL PROTECTION

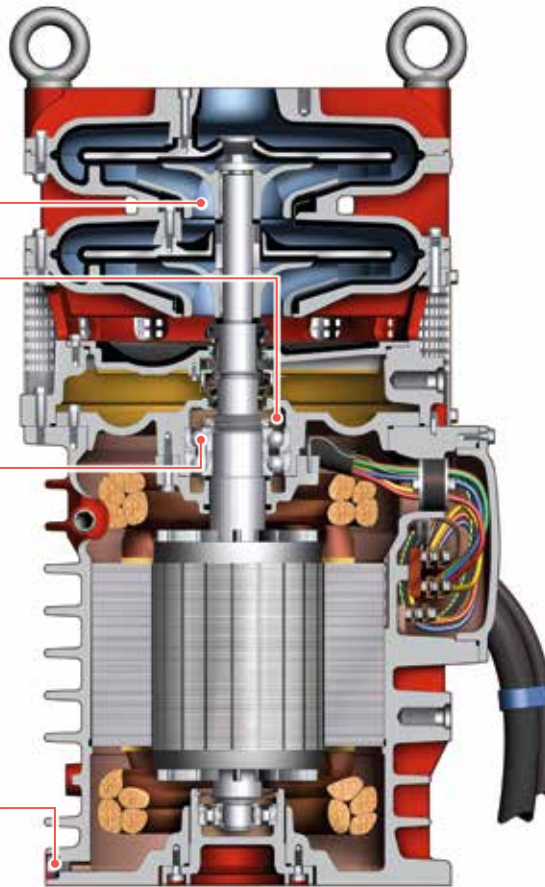
- ✓ Thermal protection of the motor prevents overheating

### BEARINGS

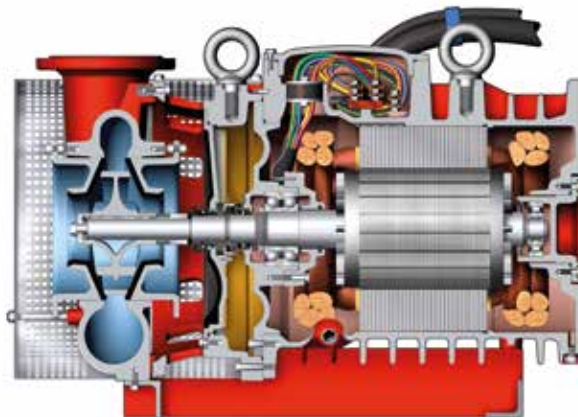
- ✓ Carefully selected from well-known suppliers for Grindex-specific clearances and tolerances
- ✓ Pre-greasing ensures correct high quality lubrication
- ✓ PT 100 sensor (optional)

### INSPECTION PLUGS

- ✓ Quick and easy inspection of the seal / oil condition



Mega H, high pressure



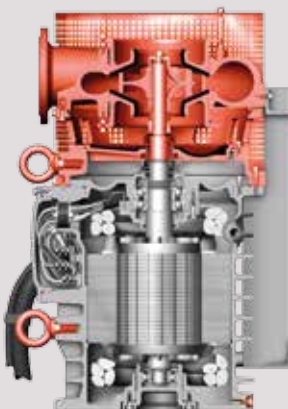
Mega N, normal pressure

## Options

### DIFFERENT STAINLESS STEEL AND COATING OPTIONS

Ask your representative for more details.

### STAND



ZINC ANODES  
See page 33.



PUMP RAFT SYSTEM  
See page 34.

# Sludge pumps



## Grindex sludge pumps prove their non-stop reliability in countless demanding areas

Grindex sludge pumps are designed for professional use in tough applications like mines, construction sites, tunnel sites, and other demanding industries. Made for continuous, unattended operation, the pumps have proven their reliability and dependable performance in demanding applications around the world. With industrial strength, they are a perfect choice when pumping water with a high solids content up to 80 mm such as many types of mud and sludge plus light slurry.



**Trollhätte canal emptied / Sweden**

When the Trollhätte canal was closed for requisite repairs, 26 Grindex pumps – 3 slurry, 22 drainage, and 1 sludge – pumped 37 million liters of water out of the locks and kept them dry throughout the process. With more than 300 contractors on site and tight deadlines to meet, staying on schedule was a critical success factor. After only 25 days, the locks were reopened to shipping.

**Clean limestone quarry / Sweden**

Gåsgruvan started already in 1850, and the limestone that comes from the mine is extracted and manufactured as one of the cleanest in the world. Grindex has Sandy pumps that are pumping iron oxide in the mine.



**Did you know?**

**First sludge pumps**

Several drainage pump models were introduced in the 1970s, along with the first sludge pumps.

**Successful product line**

In 1990, Grindex introduced The New Line and was once again established as a world leader in electrical submersible drainage and sludge pumps.



# Sludge pumps

Solid, Salvador, Senior, Sandy

Based on the same design as our drainage pumps, sludge pumps come into action when the liquid gets dirtier and can't be handled by the drainage pumps. The design even permits converting between drainage and sludge models, allowing you to adapt the pump according to varying conditions. All sludge pumps excel in applications in which reliability and easy handling are essential.

The internal starter, SMART motor protector, and optional level regulator provide fully automatic protection and control without the need for external starter – plug and pump.

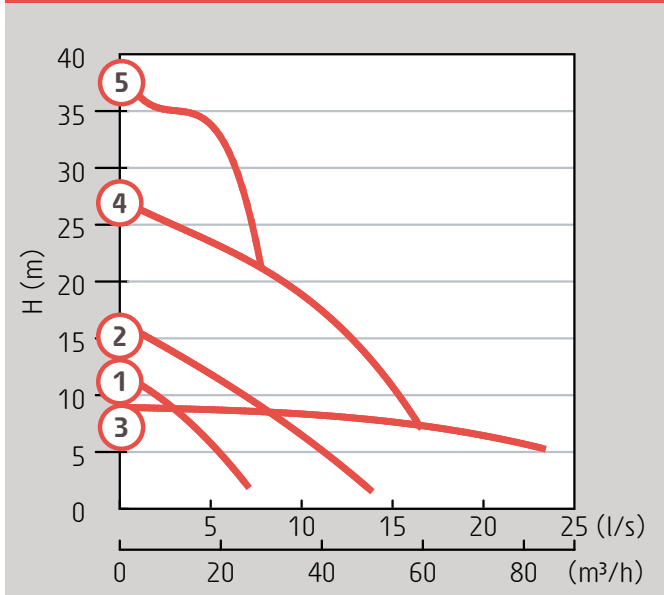


*The sludge pumps are built to handle contaminated water, pH 5-8, and water containing relatively abrasive solids up to the size of 80 mm.*

## Technical data – Sludge pumps 50 Hz

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>1. Solid</b>	2"	1~	1.2	17
<b>2. Salvador</b>	3"	1~,3~	1.9-2.7	33
<b>3. Senior</b>	4"	3~	4.2	56
<b>4. Sandy N</b>	3"	3~	6.6	56
<b>5. Sandy H</b>	3"	3~	6.6	56

## Solid – Sandy 50 Hz





**AIR VALVE**

- ✓ Enables the pump to run dry without operation interruptions – thanks to air cooling
- ✓ Grindex invented and patented the world's first air valve in 1960



**CARTRIDGE SEAL**

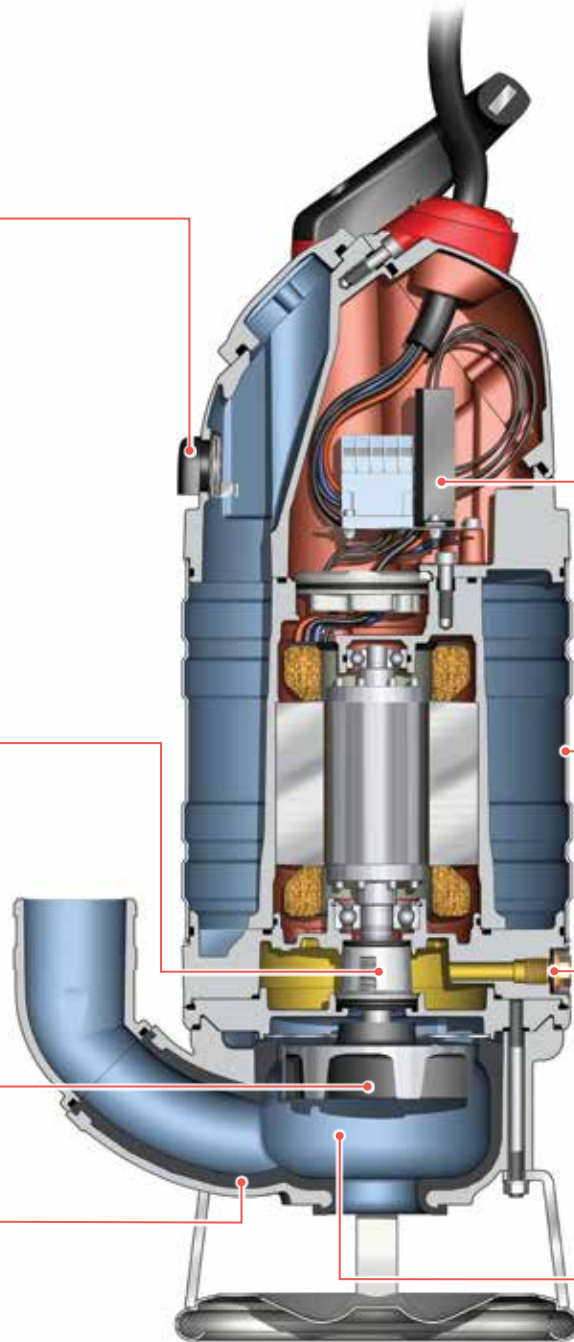
- ✓ Patented, leakage-preventing seal technology (page 34 for details)

**VORTEX IMPELLER**

- ✓ Ideal for applications in which the water or liquid contains concentrations of abrasives to avoid clogging problems

**POLYURETHANE LINED VOLUTE**

- ✓ Available as spare parts



**SMART**

- ✓ Built-in plug and pump; no need for external start boxes
- ✓ Phase-failure guard protects against phase loss
- ✓ Temperature guard stops the pump if it reaches high temperature
- ✓ Automatic restart after stop
- ✓ Phase-sequence control ensures that impellers turn in right direction

**OUTER CASING**

- ✓ Stainless steel
- ✓ Cools the motor which leads to high efficiency

**INSPECTION PLUGS**

- ✓ Quick and easy inspection of the seal / oil condition

**LARGE THROUGHLET**

**Options**



**LEVEL REGULATOR**

See page 38.

**ZINC ANODES**

Our zinc anodes provide protection against galvanic corrosion, mainly in applications involving salt water.



# Inox stainless steel pumps



## It's hard to find an application that can't be handled by Inox drainage and sludge pumps

Inox is a range of submersible drainage and sludge pumps constructed from stainless steel, pumps that prove their reliability 24/7 in tough applications in which other pumps fall short. Capable of handling extremely corrosive fluids with pH 2-10, Inox pumps are intended for use in demanding applications that normally risk to destroy conventional pumps, such as mines and process industries.



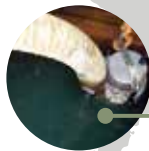


**Test mine / Sweden**

In our test mine, we try out Inox pumps to make sure that they can handle low pH levels.

**Crucial corrosion resistance / United States**

Waste Management CID, a recycling and disposal facility in Illinois, covers 450 acres of land. For collection and transport of leachate, Grindex's stainless steel Inox pumps provide the volume needed where pneumatic pumps and other submersibles pumps fall short.

**World's largest underground copper mine / Chile**

Two Grindex Major N Inox pumps replaced conventional end-suction pumps that were pumping only 15 liters/second and had spare part availability problems. The new setup pumps about 50 liters/second, something that cuts maintenance cost. The Grindex pumps paid for themselves in a few months.

## Did you know?

**First SMART release in 1990**

The SMART electronic surveillance system introduced pumping methods of the 21st century. With its three-fold motor protection, SMART still stands for the reliability of Grindex pumps.

**Made in Sweden**

Grindex's headquarter and production plant are in Sweden. Here, the entire production is managed: from molten metal to finished products. Rigorous quality and safety controls are standard.



# Inox stainless steel pumps

Minette, Major, Master, Mega, Salvador, Senior, Sandy

With an impressive allowed pH range, from 2–10, it's hard to find an application that can't be handled by the Inox pumps. The modular design minimizes service costs while offering the flexibility to change from a normal pressure pump (N) to a high pressure pump (H). All materials in contact with the liquid are made out of AISI 316 stainless steel or better. The Inox version of the sludge pumps is capable of reliable handling of all kinds of sludges – thanks to the vortex recessed-impeller design.



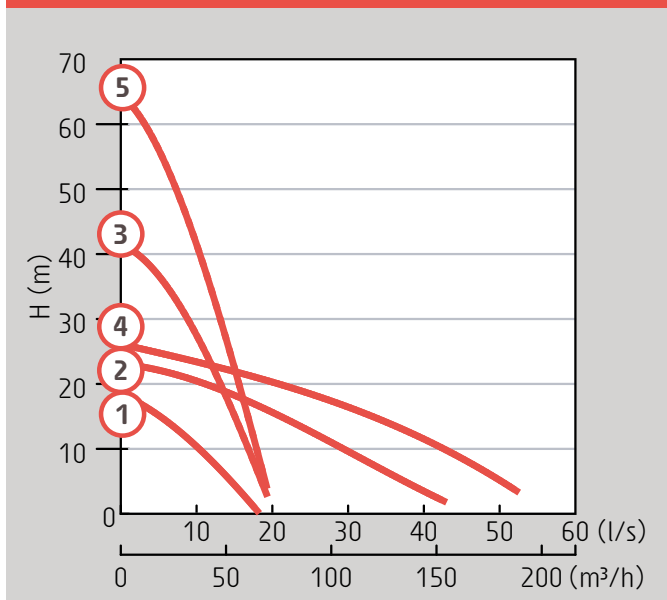
## Technical data – Inox drainage 50 Hz

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>1. Minette Inox</b>	3"	3~	2.6	44
<b>2. Major Inox N</b>	4"	3~	7.3	65
<b>3. Major Inox H</b>	3"	3~	7.3	65
<b>4. Master Inox N</b>	4"	3~	9.2	77
<b>5. Master Inox H</b>	3"	3~	9.2	81

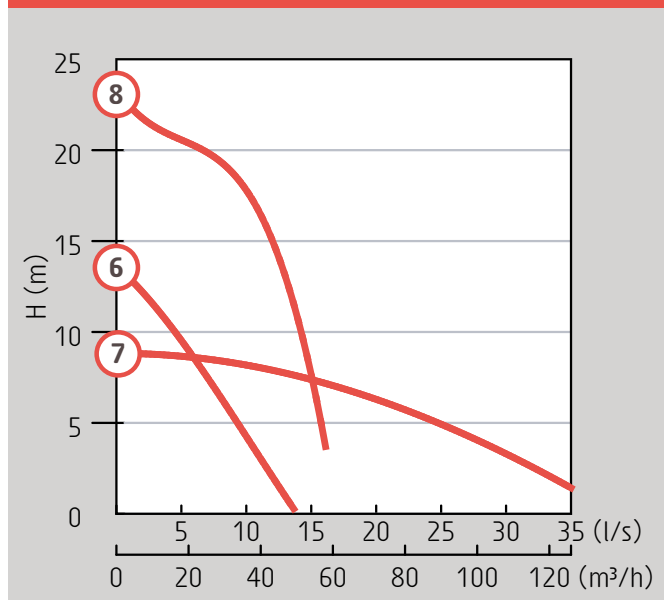
## Technical data – Inox sludge 50 Hz

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>6. Salvador Inox</b>	3"	3~	2.7	47
<b>7. Senior Inox</b>	4"	3~	5.2	86
<b>8. Sandy Inox</b>	3"	3~	7.3	86

## Inox drainage – 50 Hz

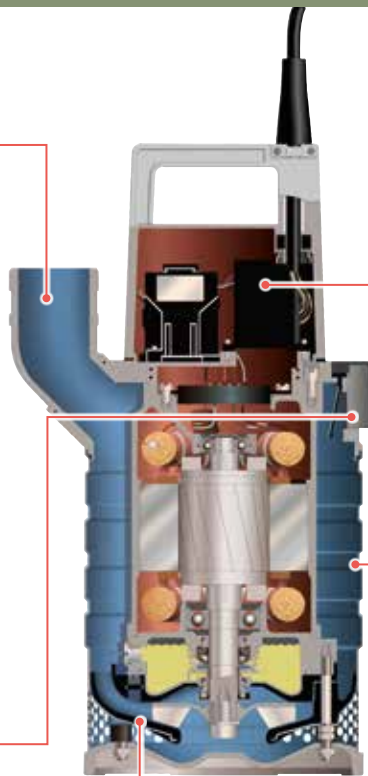


## Inox sludge – 50 Hz



### DISCHARGE

- ✓ Easily positioned in both horizontal and vertical position
- ✓ Threaded or hose connection for outlet



### SMART

- ✓ Grindex's SMART electronic surveillance system (page 5 for details)

### OUTER CASING

- ✓ Stainless steel
- ✓ Pumped liquid cools the motor, which leads to high efficiency

### AIR VALVE

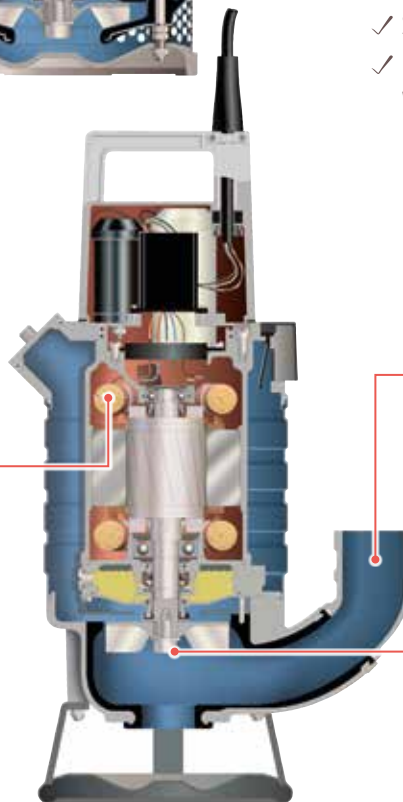
- ✓ Enables the pump to run dry without operation interruptions – thanks to air cooling
- ✓ Grindex invented and patented the world's first air valve in 1960

### WEAR PARTS

- ✓ Available in nitrile rubber

### THERMAL PROTECTION

- ✓ Thermal protection of the motor prevents overheating



### Additional sludge features:

#### LARGE THROUGHLET

- ✓ Threaded or hose connection for outlet

#### VORTEX IMPELLER

- ✓ Ideal for applications in which the water or liquid contains concentrations of abrasives to avoid clogging problems

## Options

### ZINC ANODES

Our zinc anodes provide protection against galvanic corrosion, mainly in applications involving salt water.



# Bravo slurry pumps



## Submersible slurry pumps for pumping fluids with abrasive solids – when others fall short

Pumping slurry is one of the most demanding applications for any pump; parts wear out, maintenance and repair costs are high, frequent pump failures lead to costly production downtime, and excess sediment build-up causes trouble. Grindex slurry pumps provide an effective solution to all that, and offers an excellent value in terms of initial investment. They are designed for use in quarries, mines, dredging, cleaning of settling ponds, and other applications and industries that require pumps with very high durability. Consequently, each part of the Bravo pump is made for maximum endurance and reliability.



**Long distance pumping / Sweden**

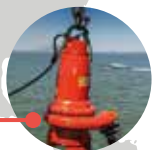
When a new, more environmentally friendly method of port construction was carried out in the port of Gävle in Sweden, it involved pumping hard wearing material over a long distance. Grindex Hard Iron™ Bravo 700 pumps were connected in series and worked 24/7 for about 80 days pumping the mixture 1,200 meters to the construction site.

**Harbor slurry pumping / El Salvador**

A Bravo 700 pump, extremely wear-resistant and specialized in pumping fluids with abrasive solids, helped to increase depth at the harbor in Puerto Corsain.

**Sump cleaning / Brazil**

An open pit mining company chose a Grindex Bravo 600 pump for a slurry application in a sedimentation sump. The pump replaced a conventional dredging installation and held several advantages; ease of installation, excellent performance, and superior abrasion resistance.

**Did you know?****First slurry pump in 2005**

Grindex's slurry pumps in the Bravo family are designed for pumping fluids with high concentrations of abrasives, like sand and stones. Hydraulic components in Hard Iron™, one of the hardest materials available, solve the wear problem.

**Pump no. 400,000**

In 2014, Grindex celebrated the production of pump no. 400,000. Over the years, the pumps have been sold to a variety of industries in 100 countries.



# Bravo slurry pumps

200, 300, 400, 500, 600, 700, 800, 900

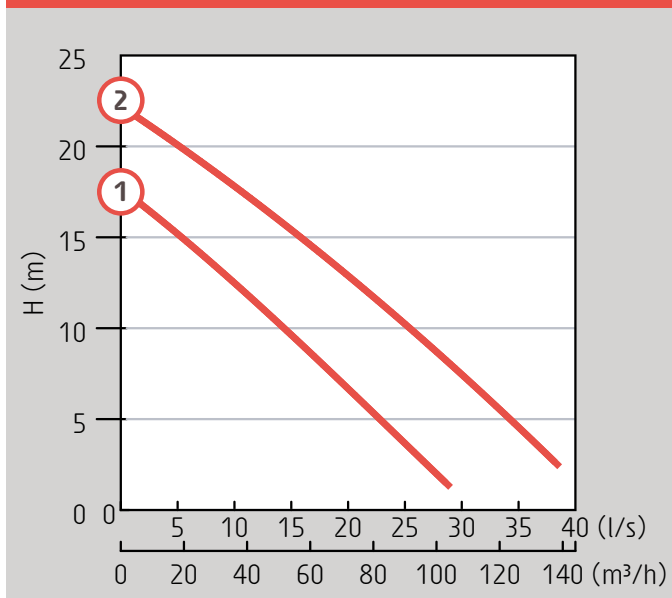
All Bravo pumps can handle liquids with pH 5.5–14 and are extremely wear-resistant – thanks to the use of Hard Iron™ and the low shaft speed. They are designed for pumping slurry and fluids with a high content of very abrasive solids in sizes up to 50 mm. Bravo 400–900 are equipped with agitator to stir up settled material toward the pump intake. Bravo 400–900 can also be fitted with an optional cooling jacket for use in dry pit applications. Bravo 200 and Bravo 300 are intended for applications with lower demands that need no agitator.



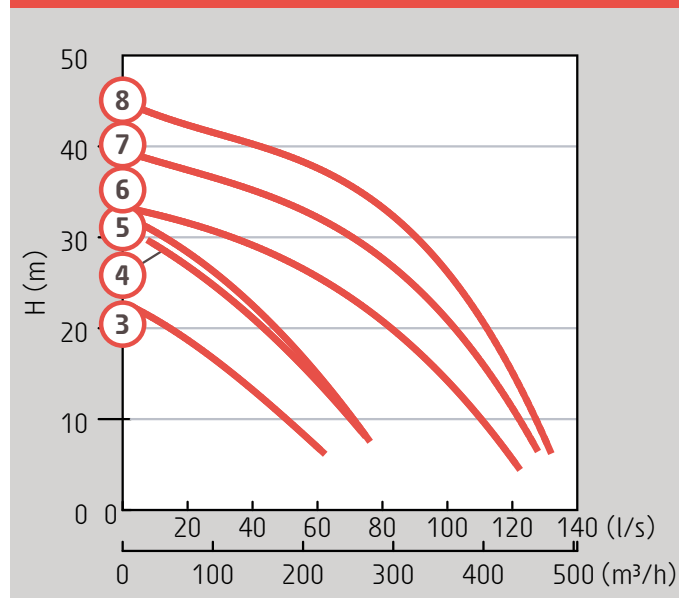
## Technical data – slurry pumps 50 Hz

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>1. Bravo 200</b>	4"	3~	5.7	157
<b>2. Bravo 300</b>	4"	3~	7.1	157
<b>3. Bravo 400</b>	4"	3~	16	231
<b>4. Bravo 500</b>	4"	3~	21	293
<b>5. Bravo 600</b>	4"	3~	25	293
<b>6. Bravo 700</b>	6"	3~	40	613
<b>7. Bravo 800</b>	6"	3~	49	613
<b>8. Bravo 900</b>	6"	3~	75	845

## Bravo 200 – 300 – 50 Hz



## Bravo 400 – 900 – 50 Hz





### EXTERNAL CONTROL PANEL

- ✓ Phase sequence supervision
- ✓ Phase failure guard, overload protection
- ✓ Leakage detection

### SURVEILLANCE

- ✓ Sensor in the inspection chamber
- ✓ Sensor for the detection of water in oil housing (Bravo 200 and 300)

### PUMP HOUSING

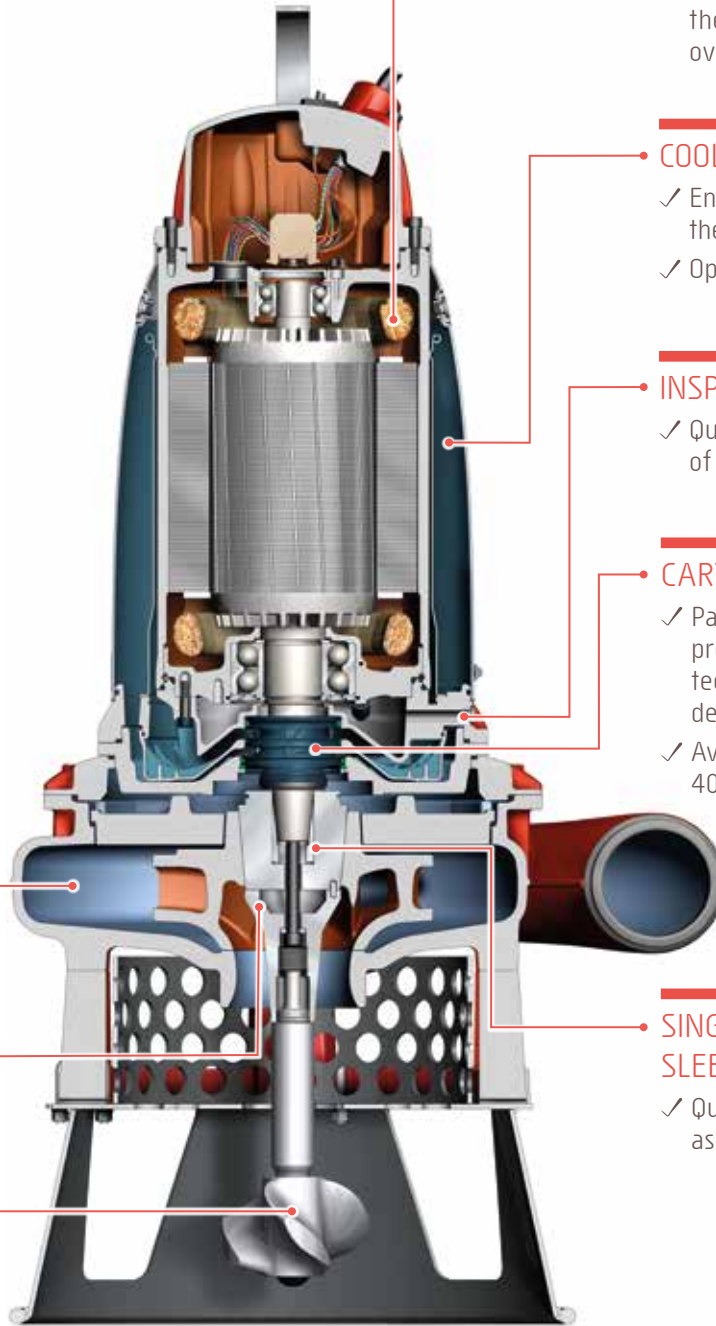
- ✓ Cast iron (Bravo 200 and 300)
- ✓ Hard Iron™ (Bravo 400–900)

### CLOSED IMPELLER

- ✓ In Hard Iron™ for maximum wear resistance

### AGITATOR

- ✓ More solids into suspension
- ✓ Integrated agitator removal function
- ✓ Available on Bravo 400–900



### THERMAL PROTECTION

- ✓ Thermal protection of the motor prevents overheating

### COOLING JACKET

- ✓ Enables pumping down to the strainer
- ✓ Optional (Bravo 400–900)

### INSPECTION PLUGS

- ✓ Quick and easy inspection of the seal / oil condition

### CARTRIDGE SEAL

- ✓ Patented, leakage-preventing seal technology (page 34 for details)
- ✓ Available on Bravo 400–900

### SINGLE ADJUSTMENT SLEEVE

- ✓ Quick readjustment to as-new performance

## Options

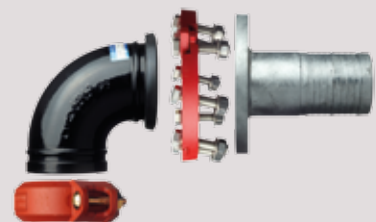
**EXPLOSION PROOF**  
All Bravo pumps are available in an explosion-proof version and are ATEX and FM approved.



**COOLING JACKET**  
Bravo 400–900



**LEVEL REGULATOR**  
See page 35.



**VICTAULIC COUPLING**  
Bravo 400–900  
See page 34.

# Primo pumps

## Handy drainage and sludge pumps for dewatering applications where small sizes matter

Grindex Primo is a range of small, handy, affordable pumps, including two drainage and two sludge pumps. Primo pumps are ideal for construction, industrial, and municipal jobs. The highly compact design allows Primo pumps to operate in dewatering applications where other pumps don't fit.



### 10 METER CABLE

- ✓ H07RN-F with plug

### IMPELLER

- ✓ Polyurethane (drainage)
- ✓ Cast iron (sludge)

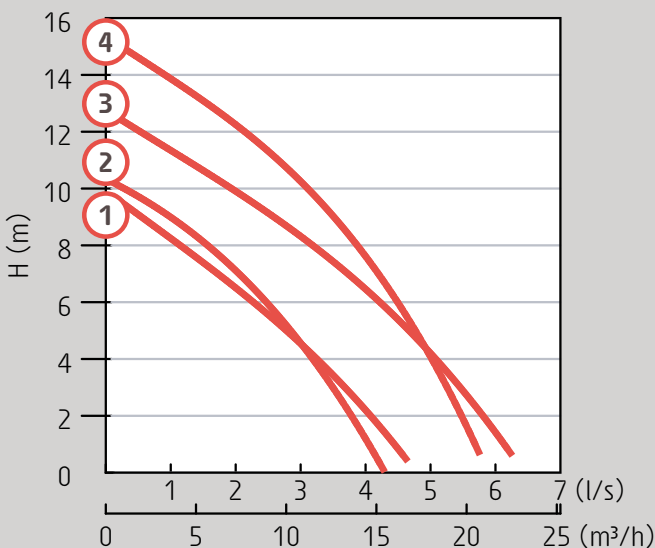
### DOUBLE MECHANICAL SEAL

- ✓ Silicone carbide

### THERMAL PROTECTION

- ✓ Thermal protection of the motor prevents overheating

### Primo pumps – 50 Hz



### Technical data – Primo pumps 50 Hz

	discharge connection	phase (ph)	max power consumption (kW)	weight (kg)
<b>1. Primo S4</b>	2"	1~	0.65	10
<b>2. Primo D4</b>	2"	1~	0.65	9
<b>3. Primo S8</b>	2"	1~	1.2	13
<b>4. Primo D8</b>	2"	1~	1.2	13



# Accessories

For some applications, even the best pump needs complementary equipment. Grindex's unique accessories are designed and manufactured specifically to fit our pumps, enhancing their efficiency and flexibility even more.



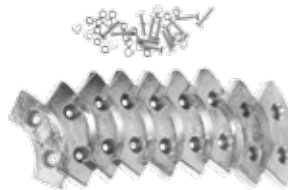
## Hydraulic accessories

Enhance the usability and flexibility of our pumps with the help of our hydraulic accessories. They make it possible to perform jobs at more applications and provides wear protection for extra tough conditions.



### TANDEM CONNECTIONS

With our tandem connections, you can easily increase the discharge head by connecting pumps in series.



### ZINC ANODES

Our zinc anodes provide protection against galvanic corrosion, mainly in applications involving salt water.



### LOW SUCTION COLLARS

Our low suction collars are an efficient solution in applications in which all water must be removed, for example when clearing a flooded basement.



### POLYURETHANE DIFFUSORS

For extra demanding applications, we offer durable polyurethane protective coating as a hydraulic end option – especially advantageous when pumping abrasive liquids with small particles.

## Pump rafts

The Grindex pump raft keeps the pump at surface level, eliminating problems of deep submerged operation; problems with long cables and hoses, and the complications of lifting a pump from great depths are avoided. Furthermore, unnecessary wear from pumping sand and mud are minimized. The rafts are made of oil-resistant polyethylene filled with expanding polystyrene, and the complete range of Grindex pumps are covered through four different raft models.



## Couplings

Take advantage of our complementary products – from hoses and flanges to bends and quick coupling – for connecting our pumps and other gear.

### VICTAULIC EQUIPMENT

Grindex offers a range of victaulic connections for different needs.



### CHECK VALVES

Check valves prevent water from running back when the pump stops.



### FLANGES AND PIPES

Grindex has a wide range of discharge connections for all pumps and applications.



### QUICK COUPLINGS (STORZ)

Our quick couplings permit fast, easy connection of hoses to pumps.



### HOSES AND HOSE CLAMPS

Our hoses and hose clamps are easy to fit and fasten onto any Grindex pump.

## Start equipment, regulators, and cables

Our electronic devices and durable, leak-free cables enable smarter, smoother, safer operation and supervision of the pumps and their performance.



### EXTERNAL LEVEL CONTROL

Our external box is a level control unit enabling automatic operation of 3-phase pumps 230–660V. The level control unit is used in combination with manual starters.

### PHASE SHIFTERS

Phase shifters permit the phase sequence to be changed easily. The pump is also easily restarted if the motor protector has tripped.



### STARTER BOX

Grindex pump starter series GSP 32–185 is a 3-phase starter panel for manual operation of one pump with optional automatic duty with level regulators. The starter series is available with DOL or Star / Delta configuration and includes several smart features such as phase guard and supervision relay for detection of leakage.



### CABLES

Our broad range of motor cables gives you reliable, leak-free cabling for varying applications.

### LEVEL REGULATORS

The external or built-in level regulators start and stop the pump – depending on the water level.



## Did you know?

### Environmental responsibility

Many Grindex features contribute to our commitment to the environment. Sustained performance, longer service intervals, less maintenance, fewer spare parts, and versatility lead to less impact on our environment.

### Rockmaster legacy

Some of the Grindex pump names (Minor, Major) originate from before the submersible pump era when they were used on the Rockmaster range of rock-drill grinding machines.



# Grindex spare parts – made to last

With more than 55 years of experience supplying drainage and sludge pumps for some of the world's most demanding sites, Grindex takes pride in developing reliable pumps for the harshest conditions. Our renowned, time-tested Swedish engineering permeates everything we do – down to every single screw. That's why all our pumps' components are available as high-quality spare parts. We develop and carefully select all components to match our product range, and strive to offer every spare part – long after a specific pump model is phased out.



## KITS: GOOD THINGS COME IN PACKAGES



To make your repair work easier, we offer distinctive spare part kits that contain all the most frequently requested pieces. Using Grindex kits saves time and lowers the cost, compared to when you buy spare parts separately. With

Grindex kits, you also ensure that you restore the genuine pump quality and performance.

## When all parts matter

Do you really need original spare parts? Yes, you do because a chain is only as strong as its weakest link. By sticking to Grindex original spare parts, where every part fulfills its specific function, you can feel confident that your equipment chain stays strong. There is simply no better way to ensure a trouble-free, cost-effective life-cycle operation.



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### RESET THE CAPACITY

Feel like the pump is losing performance? Using this innovative and value-adding part—a Grindex adjustment sleeve unit—you adjust the pump to its original performance.

# Essential parts for optimized operations

Designed to prevent wear, with optimal durability in all parts and built-in overheating protection, Grindex pumps simply last longer.



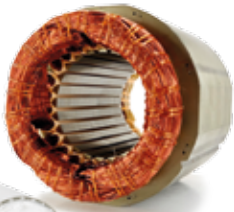
## SUBCAB® CABLE

- ✓ Optimized for submersible long-life duty
- ✓ Superior mechanical strength
- ✓ Resistant to high temperatures and chemicals
- ✓ Narrow tolerances for our cables ensure perfect sealing



## AIR VALVE

- ✓ Enables the pump to run dry without operation interruptions – thanks to air cooling
- ✓ Grindex invented and patented the world's first air valve in 1960



## SHAFT UNIT / STATOR

- ✓ Optimized for submersed operations
- ✓ High efficiency thanks to water-cooled design
- ✓ Extended motor lifetime with high-temperature tolerance
- ✓ Class H standards; best insulation available – thanks to capillary impregnation



## INSPECTION PLUGS

- ✓ Quick and easy inspection of the seal / oil condition



## BASIC REPAIR KIT / O-RING KIT

- ✓ Provides all necessary parts: bearings, seals and O-rings made to exact tolerances
- ✓ Restores optimal pump performance at lower cost
- ✓ Simplifies spare parts management



## LEVEL REGULATOR SPARE PARTS / KIT

- ✓ Provide all parts for easy level regulator installation
- ✓ Micro to Matador pumps can be delivered and refitted with level regulator
- ✓ Available as 24 V – low voltage level regulator – for 3-phase 380–600 supply voltage





### ALL PARTS MATTER: SMART

Here's just one example that illustrates the importance of an individual piece: Grindex SMART electronic surveillance system. Its three-fold motor protection keeps the pump safe from electrical problems: phase guards protect the motor against single phasing; temperature switching protects it from overheating, and phase sequence control ensures that impellers run in the right direction.

### SMART (surveillance of the motor and rotation)

- ✓ Built-in plug and play; no need for external start boxes
- ✓ Phase-failure guard protects against phase loss
- ✓ Temperature guard stops the pump if it reaches high temperature
- ✓ Automatic restart after stop
- ✓ Phase-sequence control ensures that impellers turn in right direction
- ✓ First developed by Grindex in 1990

### SOFT STARTER

- ✓ Smoother motor acceleration minimizes current peaks on the power net at start
- ✓ Reduces equipment wear, mechanical stress, and the starting current
- ✓ Optionally replaces the Star / Delta (YD) start and Direct on line (DOL)



### BEARINGS

- ✓ Carefully selected from well-known suppliers for Grindex-specific clearances and tolerances
- ✓ Pre-greasing ensures correct high quality lubrication



### CARTRIDGE SEAL

- ✓ Ready-to-install unit – no special tools needed
- ✓ Protects sensitive surfaces and springs from impurities
- ✓ Patented, leakage-preventing seal technology
- ✓ Intelligent design simplifies inspections and ensures longer life-cycle
- ✓ Every single seal is tested for leakage before delivery



### WEAR PARTS / HYDRAULIC PARTS

- ✓ Long life performance due to exceptional wear resistance
- ✓ Minimize the performance drop due to innovative design
- ✓ Improve operation and performance in harsh conditions
- ✓ Optimized design and materials for specific applications, e.g. drainage, sludge and slurry



# Sustainability, center of activities

Grindex designs and manufactures pumps so that they require minimal supervision, have extended life-cycles, and are cost-effective to maintain. Selecting quality down to each spare part benefits business and our natural environment.

Sustainability is at the very center of who we are and what we do at Grindex. We're dedicated to meeting the highest environmental standards – including ISO certification, a key element in our ongoing commitment to making sustainability a day-to-day priority.

Grindex AB is certified as per the ISO 14001 environmental management standard. ISO 14001 assures that a product has the least possible impact on the environment during production or disposal. Consequently, the entire process (from designing to manufacturing and testing) is continuously evaluated and improved in terms of environmental impact. Grindex was certified in May 1999 and has complied with the standard ever since.





# Easy spare parts selection

Did you know that you can find the exact bill of material for a pump by entering its serial number in our online spare parts selection tool?

[www.grindex.com/grindex\\_toolbox/spare\\_part\\_selection](http://www.grindex.com/grindex_toolbox/spare_part_selection)



Don't forget to check out [www.grindex.com](http://www.grindex.com) for more useful information and online tools.

# Notes

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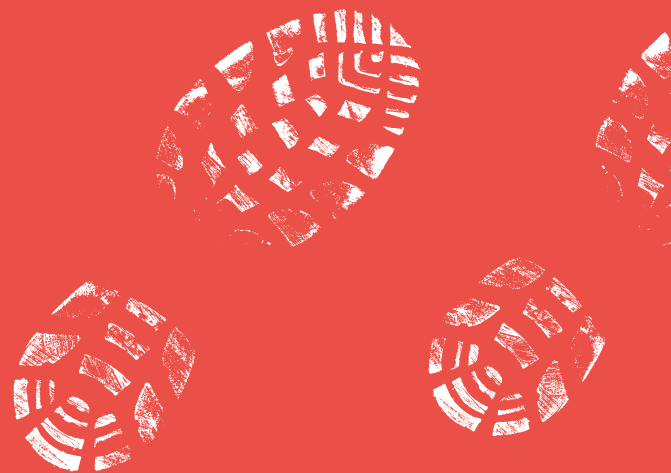
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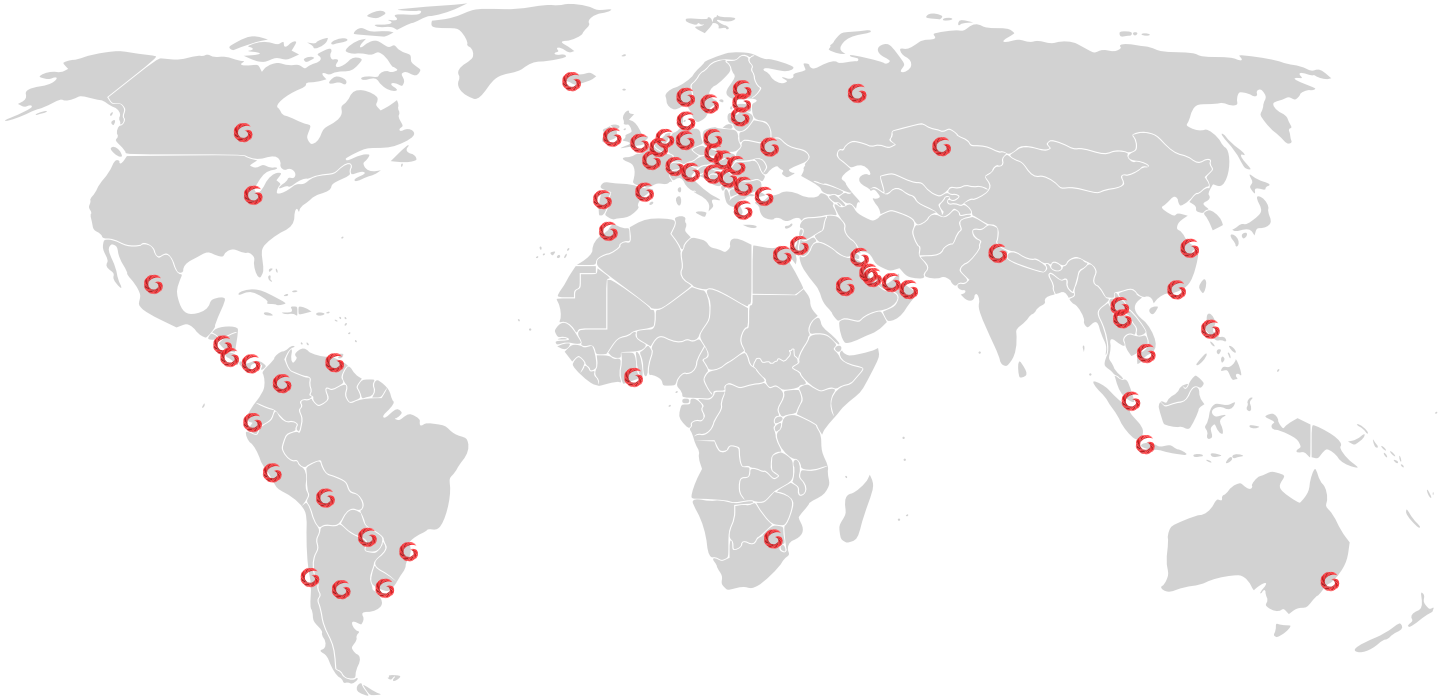
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*75 years of engineering experience coupled with endless efforts to help our customers get the job done – despite the toughest conditions.*





## Get the job done. Grindex.

Grindex is specialized in designing and manufacturing electrical submersible pumps for professionals. Since the start in 1940, we have delivered more than 400,000 pumps to more than 100 countries. Our products have continually proven their reliability and demonstrated dependable performance in demanding areas such as building and construction, mining, tunneling, quarries, industries, and rental applications.

When you're running a Grindex pump, you can rest assured that a dedicated team is watching your back. Through our global network of sales and service centers, we provide the best level of support possible – 24/7. It's all part of the service.

Find out more at [www.grindex.com](http://www.grindex.com)



[www.grindex.com](http://www.grindex.com)