# DREDGING EQUIPMENT




bell

DREDGING EQUIPMENT

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# BELL®
# PUMPS



## APPLICATIONS & AREAS OF OPERATION

### Typical applications

- Environmental dredging
- Maintenance dredging
- Sand / gravel mining
- Offshore installation / decomissioning
- Mobile booster station
- Mounted on ladder of cutter suction dredger
- Suspension from A-frame
- Beach nourishment / reclamation dredging
- Free hanging on crawler crane

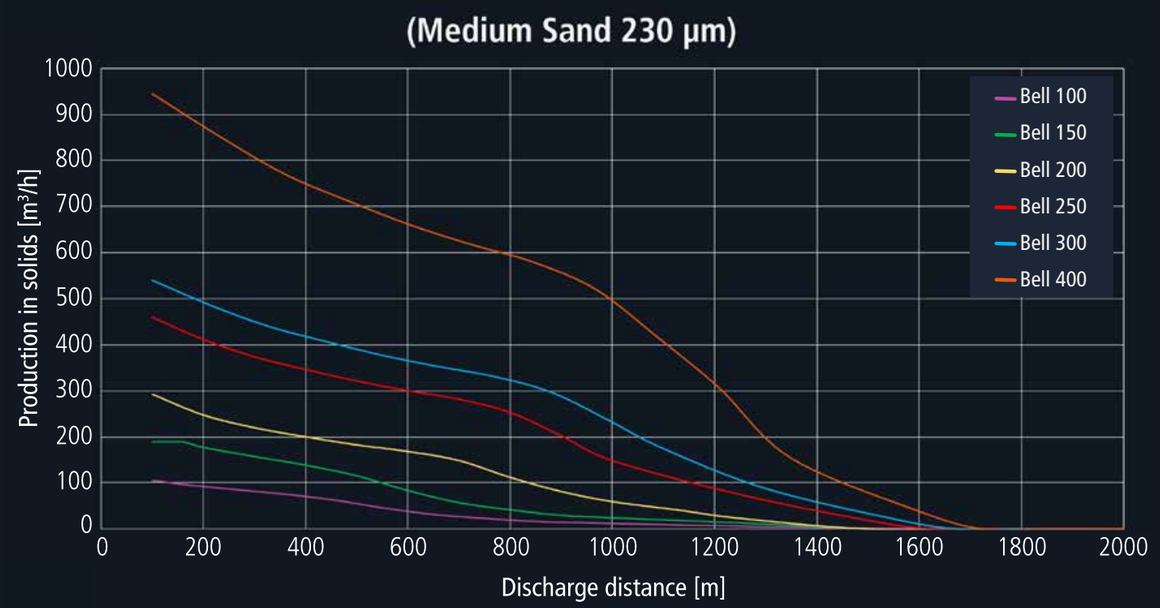
### Typical areas of operation:

- Harbours
- Offshore
- Rivers
- Canals
- Restricted areas
- Hopper barges
- Sewage / power plants
- Emptying foundation piles

## CHARACTERISTICS

| | BELL 100 | BELL 150 | BELL 200 | BELL 250 | BELL 300 | BELL 400 | UNIT |
|---|---|---|---|---|---|---|---|
| Max mixture capacity | 300 | 500 | 800 | 1250 | 2000 | 3500 | $m^3/h$ |
| Max impeller speed | 1350 | 1300 | 1200 | 900 | 750 | 550 | rpm |
| Max power at shaft | 30 | 75 | 110 | 190 | 300 | 500 | kW |
| Suction bore | ø100 | ø150 | ø200 | ø250 | ø300 | ø400 | mm |
| Discharge bore | ø100 | ø150 | ø200 | ø250 | ø300 | ø400 | mm |
| Spherical passage | 50 | 75 | 125 | 130 | 155 | 210 | mm |
| Weight hydraulic (without head) | 550 | 950 | 1200 | 2000 | 3500 | 7750 | kg |
| Weight electric (without head) | 1000 | 1375 | 1900 | 2900 | 4600 | 9150 | kg |
| Max hydraulic pressure* | 250 | 250 | 250 | 250 | 300 | 300 | bar |
| Max hydraulic pump flow* | 85 | 195 | 290 | 475 | 600 | 1000 | L/min |
| Hydraulic cutter head flow | 15-20 | 15-20 | 35-50 | 35-50 | 70-110 | 140-210 | L/min |
| Hydraulic double cutter head /auger head flow | 30-40 | 30-40 | 70-100 | 70-100 | 140-220 | 280-420 | L/min |

## PRODUCTION





## APPLICATIONS & AREAS OF OPERATION

### Typical applications

- Environmental dredging
- Maintenance dredging
- Sand / gravel mining
- Offshore installation / decomissioning
- Mobile booster station
- Mounted on ladder of cutter suction dredger
- Suspension from A-frame
- Beach nourishment / reclamation dredging
- Free hanging on crawler crane

### Typical areas of operation:

- Harbours
- Offshore
- Rivers
- Canals
- Restricted areas
- Hopper barges
- Sewage / power plants
- Emptying foundation piles
- Reservoirs



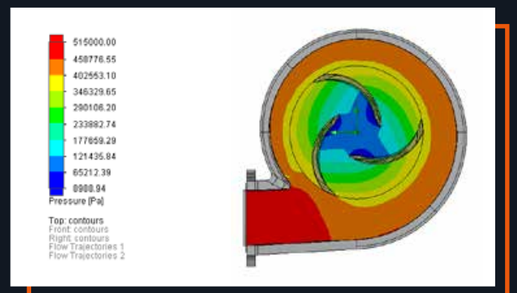



## STRONG POINTS

### BASIC DESIGN

- Delivery from stock
- Heavy duty design
- Low maintenance
- Proven design
- Compact
- Multifunctional
- Low cost
- Large spherical passage
- Various suction heads available
- Changeable wear parts








ADJUSTABLE **NIHARD WEAR PLATES**

ADJUSTABLE **NIHARD IMPELLER**

OPTIONAL **SENSORS**



## DEVELOPMENT

- Continuous improvement of pump design
- Flow simulations for higher efficiency
- Development of new suction heads and tools

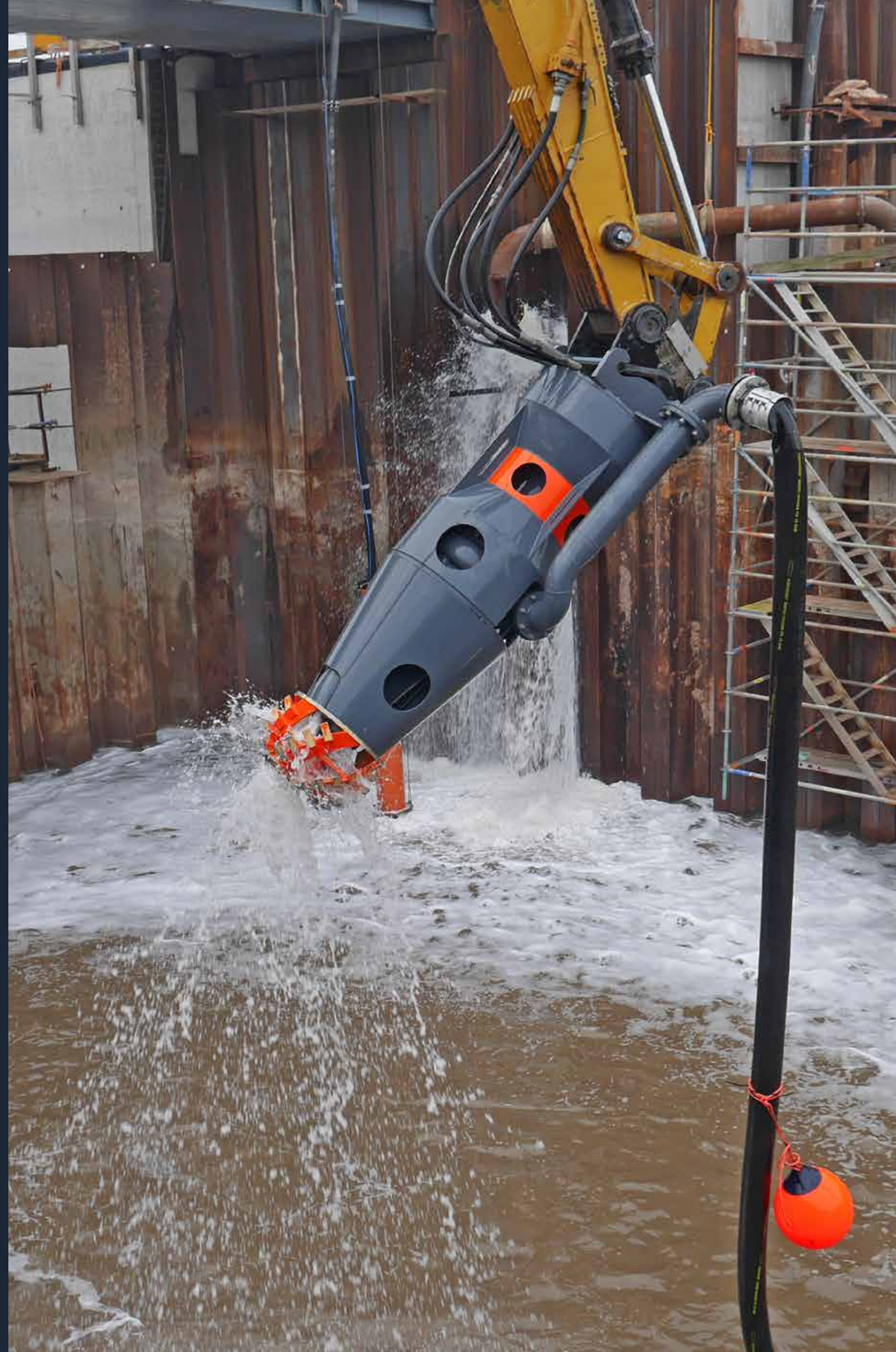
## SPARES AND SERVICES

**After Sales Department:**

- Components with short delivery time
- Complete package of spare parts
- Advice and support
- Experienced and dedicated team

**Bell Field Service:**

- Warranty and after sales services
- Training courses (in house and on site)
- Technical check-ups
- Service in remote areas
- Experienced operators





# BELL®
# HEADS
















1. SAND PRODUCTION HEAD
2. FLAT BARGE HEAD
3. AUGER HEAD
4. CUTTER HEAD
5. DOUBLE CUTTER HEAD

## SAND PRODUCTION HEAD

- Water jet nozzles for best mixture
- Suspension from crane or A-frame
- High production of solid material

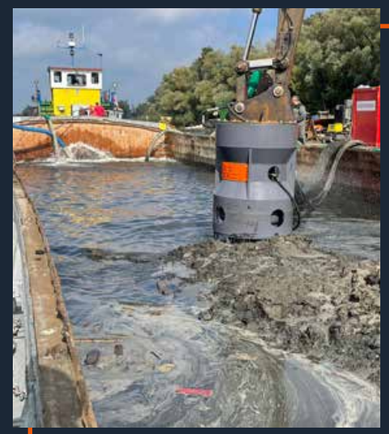












## FLAT BARGE HEAD

- Water jet ring around head
- Suspension from crane or A-frame
- Emptying barges



## CUTTER HEAD

- Separate hydraulic powered cutter
- Fixed suspension on crane or ladder
- Designed for cutting consolidated sand or





## AUGER HEAD

- Dredging with minimal turbidity
- Used in polluted areas
- Less water is taken from the area
- Used for levelling soil under water
- High solids percentage









# DOUBLE CUTTER HEAD

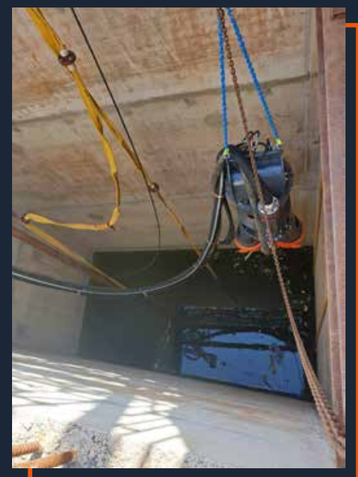
Thanks to the double cutter configuration, the pump can be used free-hanging from a cable, which is impossible with a single cutter.

This set-up is the only free-hanging tool on the market that can both cut and pump simultaneously. In addition, the double cutter is also equipped with water jet nozzles in and around the rotating heads to keep them blockage free.

- Emptying foundation piles
- Suspension from cable/free hanging
- High hydraulic torque
- Cleaning pile wall with jet ring













## SPLITTERBOX

- Manometer on the dredging pump pressure line
- Manometer on the double cutter head pressure line
- Flow control valve and manual lever, all built into one box
- Hydraulic blockage protection & reverse system






# AVAILABLE OPTIONS

## PROCESS INSTRUMENTATION

BELL SENSORS

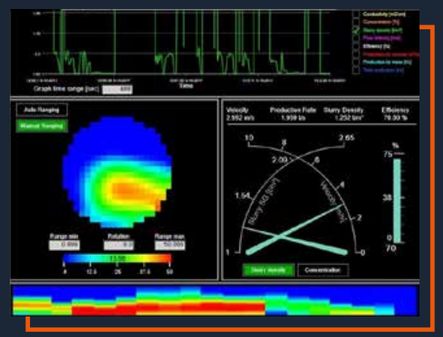
- Water ingress sensor
- Discharge pressure
- Pump speed
- Depth measurement
- Suction pressure



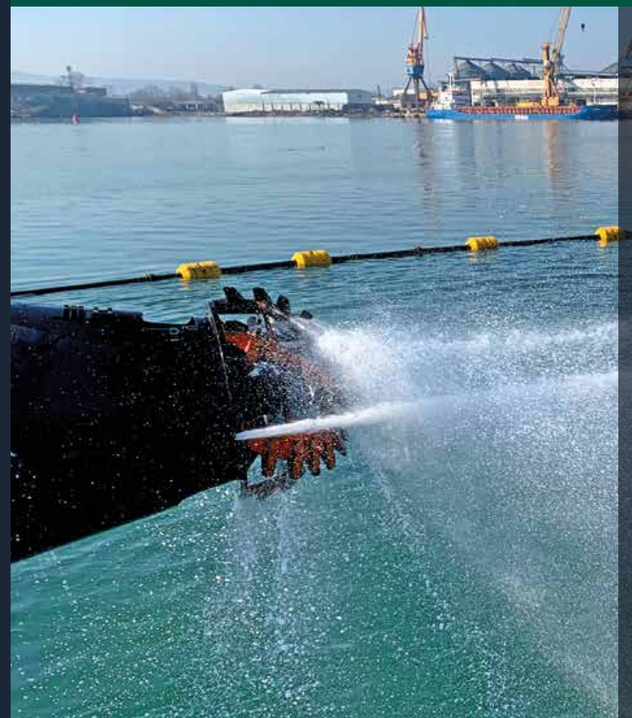
## PRODUCTION INSTRUMENTATION

- Non-nuclear density meter
- Flow meter
- Real time production monitoring and logging









## PIPES, HOSES AND FLOATS

- Discharge hoses including floats
- Discharge over land (Steel / HDPE)
- Self floating hoses
- Hydraulic hoses
- Jet-water hoses
- Geotubes






# BELL®
# POWER PACKS

## BELL® STAND-ALONE & AUXILIARY POWER PACKS

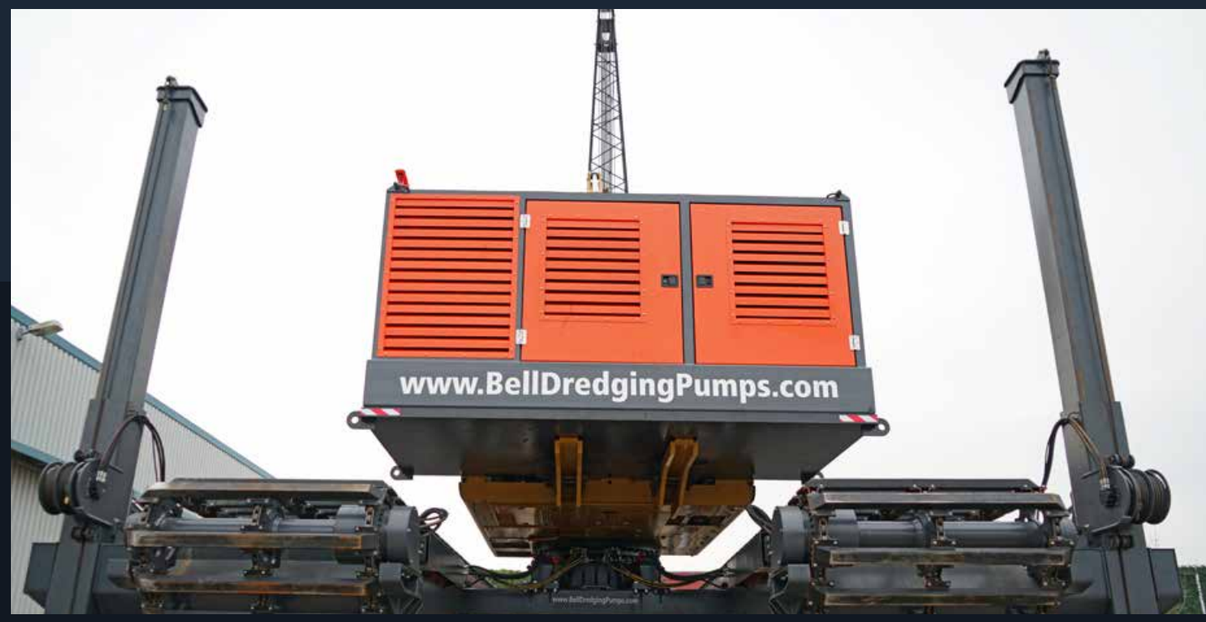
Available for all Bell Dredging pumps and heads

| | STAND-ALONE | AUXILIARY | |
|---|---|---|---|
| | POWER | FLOW 1 | FLOW 2 |
| BELL 100 POWER PACK | 60 kW | 85 L/min. | 20 L/min. |
| BELL 150 POWER PACK | 126 kW | 195 L/min. | 20 L/min. |
| BELL 200 POWER PACK | 194 kW | 290 L/min. | 50 L/min. |
| BELL 250 POWER PACK | 253 kW | 475 L/min. | 50 L/min. |
| BELL 300 POWER PACK | 395 kW | 600 L/min. | 110 L/min. |
| BELL 400 POWER PACK | 653 kW | 1000 L/min. | 110 L/min. |

Auxiliary Power Packs have just one function to power the dredge pump. Stand-alone powerpacks have two functions to power both pump + pump head. Custom power packs with additional functions are also possible.








## BELL® AUXILIARY POWER PACKS

Available for all Bell Dredging pumps

**For BELL 150**

- Power: 100 kW
- Flow: 195 L/min.

**For BELL 200**

- Power: 135 kW
- Flow: 290 L/min.

**For BELL 250**

- Power: 210 kW
- Flow: 475 L/min.




# BELL®
# WATER JET PUMPS

| For BELL 100-200 | For BELL 250-300 | For BELL 400 |
|---|---|---|
| • 120 m³/h | • 270 m³/h | • 480 m³/h |
| • 6-16 bar | • 6-16 bar | • 6-16 bar |



- Diesel, electric or hydraulic driven
- Fast dry priming
- On open skid or in closed sound-attenuated canopy
- Available for all Bell dredge heads









# BELL®
# BOOSTER STATIONS

## BELL® BOOSTER STATIONS RANGE

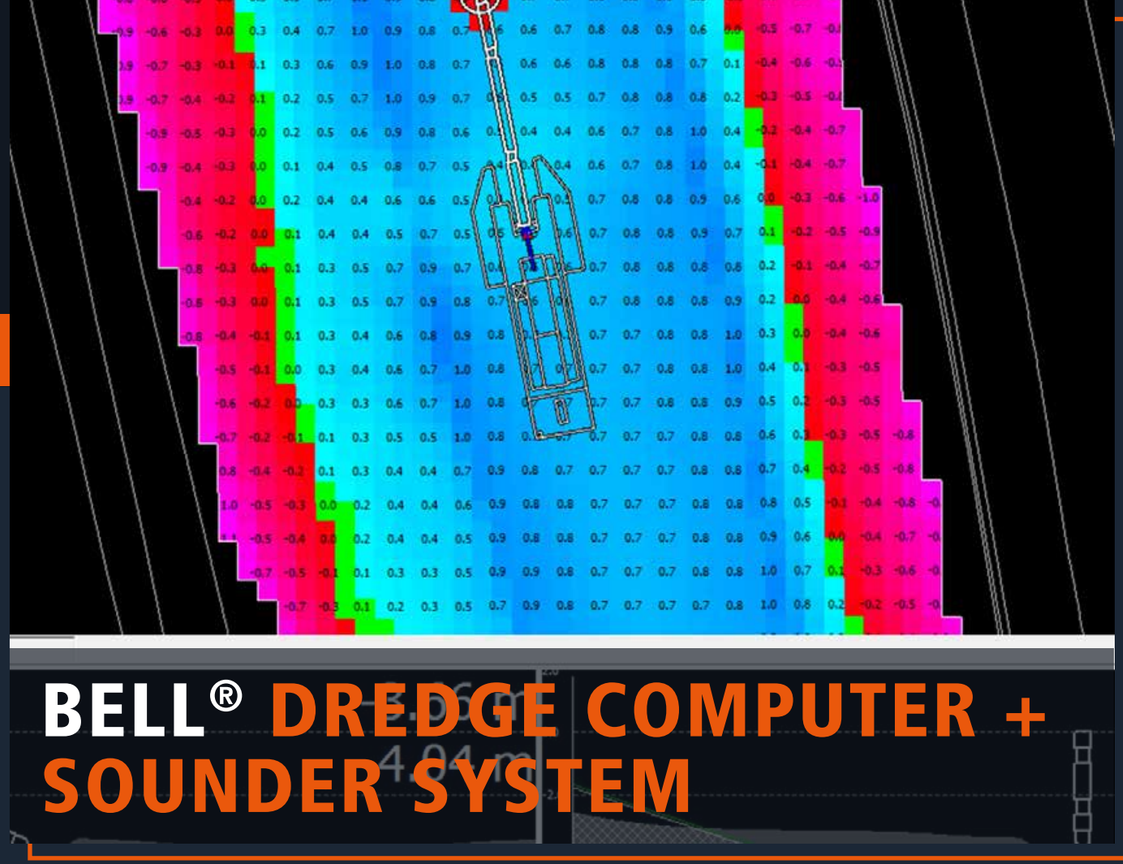
When the discharge length needs to be increased, a Bell stand alone booster station can be added in the discharge line. This will ensure te productivity over the total required discharge length.

The Bell booster station can be either diesel-powered or electrically driven. For the diesel driven version, the pump is positioned on a frame with integrated diesel tank at the bottom. In the upper part of the frame multiple ventilation grids are installed as well as doors for access to the diesel engine. The pump itself is located outside of the canopy for easy access and connection of the discharge hoses.

| BELL BOOSTER STATIONS | POWER |
|---|---|
| 100 | 55 kW |
| 150 | 96 kW |
| 200 | 143 kW |
| 250 | 237 kW |
| 300 | 365 kW |
| 400 | 560 kW |







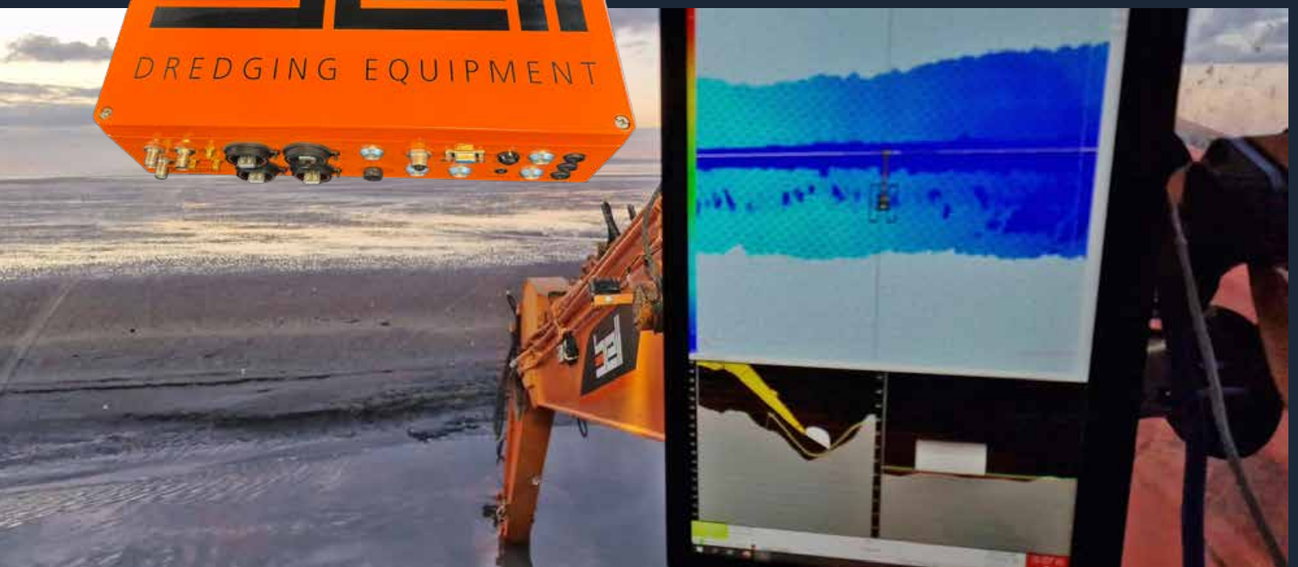
# BELL® DREDGE COMPUTER + SOUNDER SYSTEM

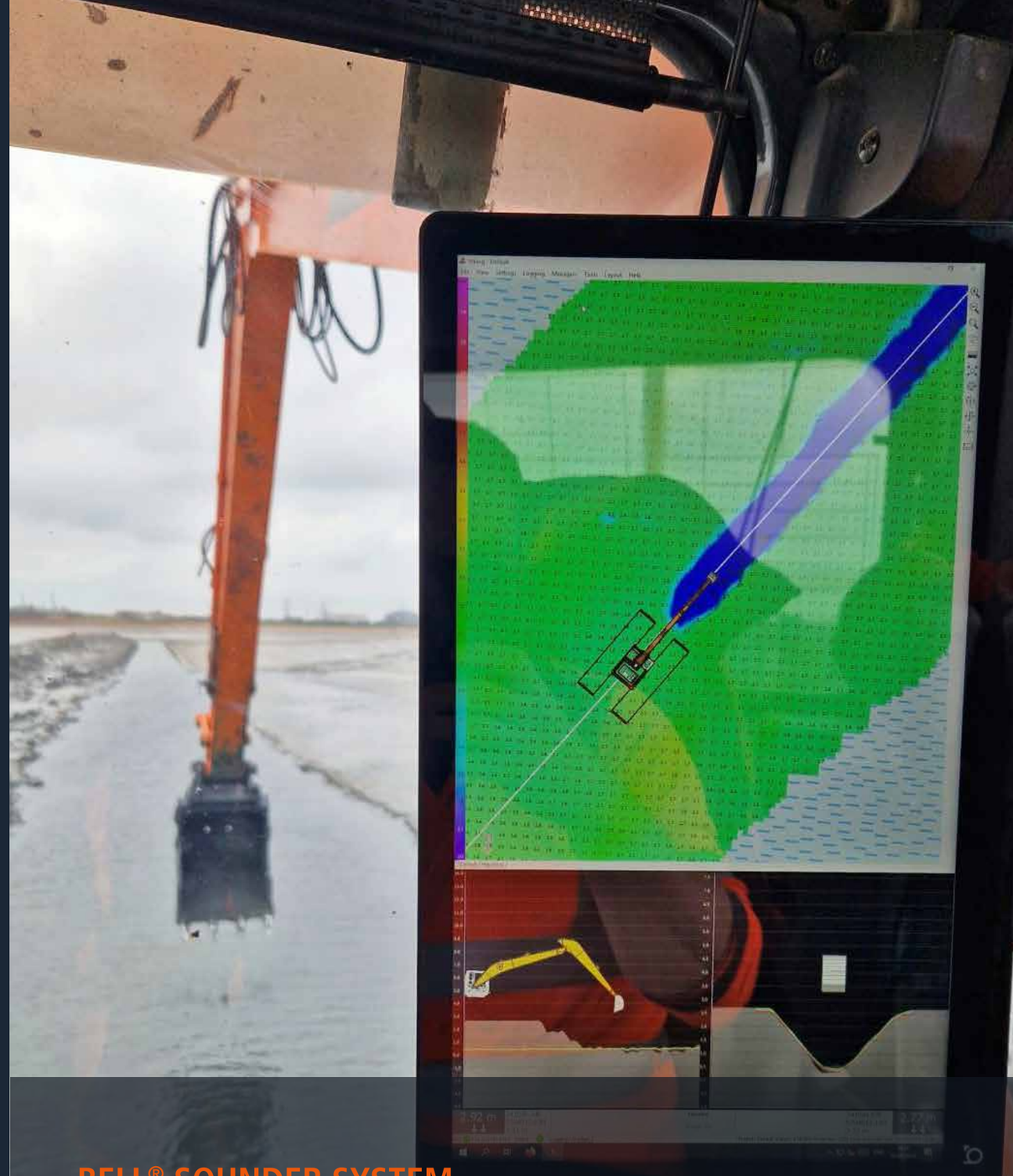
## TYPICAL APPLICATIONS

- Cutter suction dredgers
- Grab dredgers
- (Amphibious) Excavators

## SPECIFICATIONS

- Industrial Intel Computer
- Internal (G)PS/GLONASS (RTK) receiver
- Industrial GSM/GPRS/UMTS Modem
- CAN Sensor Interface
- Wide range of accessories and sensors



## BELL® SOUNDER SYSTEM

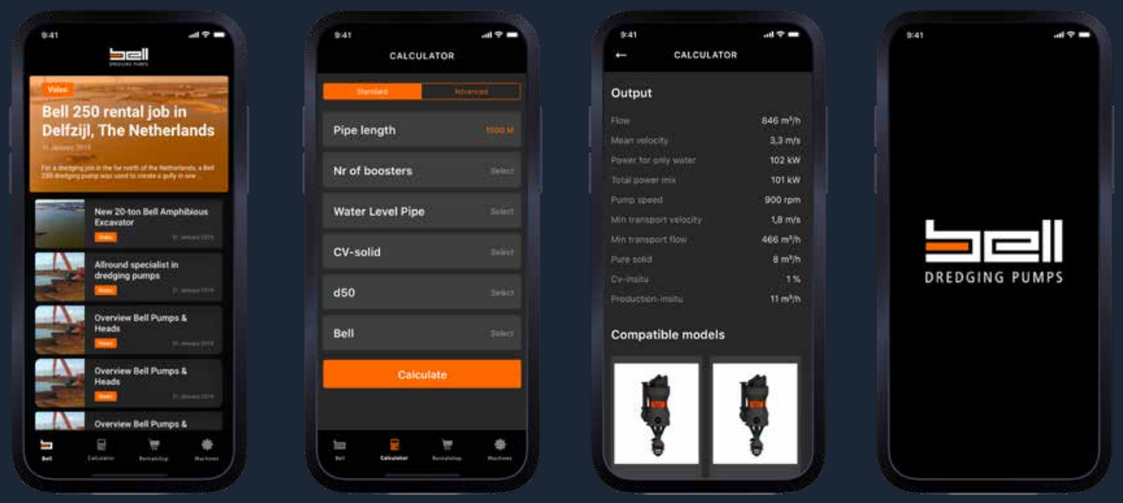
BELLSounder is designed to be a simple and rugged hydrographical survey solution with the basic functions of an echo sounder. Depending on the connected sensors, BELLSounder will function as a dual or a single frequency echo sounder. Powered by either an internal Trimble or a Hemipshere GNSS receiver, it provides the perfect solution for a hydrographic survey solution. The BELLSounder consists of a rugged Peli Case that provides a protected housing for every enviroment.






# BELL®
# DREDGING PUMPS APP

Thanks to our newly developed applicaton, it is now possible to remotely control your booster station, power pack or water jet pump. Imagine you have 3 kilometer long discharge pipe line with multiple booster stations in between. With the Bell app on your phone or tablet you can now start up, monitor and control all the booster stations without leaving the cabin of your excavator or dredger. Any notifications like fuel level or oil pressure will be shown on the screen, so you can take action much sooner when one gets critical.








# BELL®
# A-FRAME DREDGER 250

Bell A-frame dredgers are diesel or electric driven floating platforms that maneuver on 4 point mooring. A Bell pump with interchangeable heads for loose or compact soils is suspended from an A-frame at the front, allowing virtually unlimited dredging depth.

## MAIN SPECIFICATIONS

| | |
|---|---|
| **Length** | 11,5 m |
| **Width** | 7,8 m |
| **Height** | 9,1 m |
| **Design draught** | 0,65 m |
| **Total weight** | ± 35.000 kg |
| **Total installed power** | 516 kW |
| **Max river flow rate** | 3 m/s |

## DREDGING PUMP SPECIFICATIONS

| | |
|---|---|
| **Dredging pump** | BELL 250 |
| **Max mixture capacity** | 1250 $m^3/h$ |
| **Pump speed** | 900 rpm |
| **Max power at shaft** | 190 kW |



*See more in our Bell cutter dredgers brochure*



# BELL® CUTTER DREDGER 250-M (multifunctional)

- Dredge pump: BELL 250
- Dredge capacity (water & solids): 1250 m³/hr
- Dredge capacity in dry volume (max.): 250 m³/hr
- Stone size diameter (max.): 130 mm
- Installed power on the dredge pump: 190 kW
- Power source dredger: Diesel engine
- Positioning entities:
  2x mooring winches & 2x spud poles

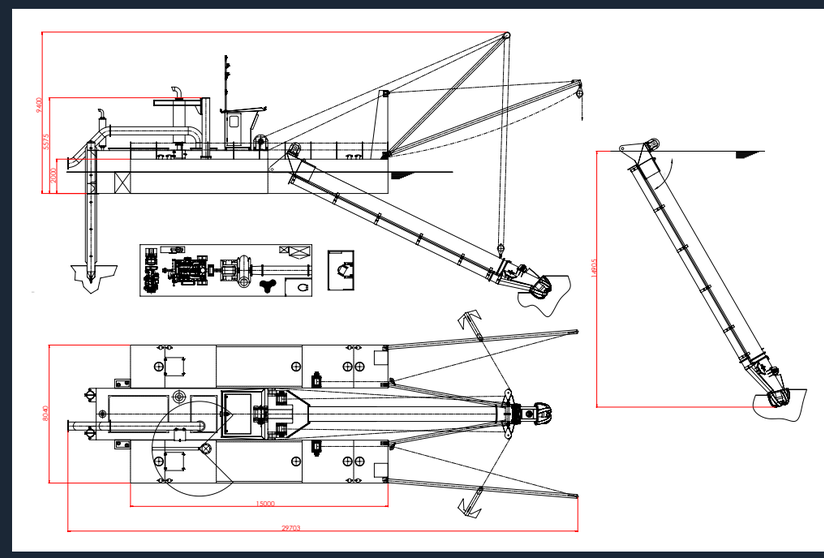








# BELL® CUTTER DREDGER 300 & 400







- Dredge pump: BELL 400
- Dredge capacity (water & solids): 3500 m³/hr
- Stone size diameter (max.): 210 mm
- Installed power on the dredge pump: 500 kW
- Power source dredger: Diesel engine
- Power source dredger: Diesel engines or electric motors



062025

DREDGING EQUIPMENT

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**More information?** Take a look at our other brochures.
Or visit our website:

**BELLDREDGING.COM**