



# Goodwin

**200 mm NZE 112kW 50Hz**  
**SUBMERSIBLE SLURRY PUMPS**

**NUMBER ONE FOR RELIABILITY, STRENGTH & ENDURANCE**



**TECHNICAL DATA SHEET**

# 200 mm NZE 112kW 50Hz

## SUBMERSIBLE SLURRY PUMPS

Goodwin submersible pumps have been manufactured since 1982 and are recognised as market leaders in terms of performance and reliability. The pumps have been continually developed over 4 decades resulting in machines that can perform in the most demanding environments.

### Standard Engineering Features

- Single piece cast iron motor housing to enhance rigidity and reduce wear
- 3 phase electric motor runs in oil bath to lubricate and cool the motor parts
- Cooling assisted by the pumped fluid passing through the pump body
- Twin volute casing design to reduce rotational imbalance and increase lifetime of bearings and seals
- Rotating inducer creates hydrodynamic shock waves to re-suspend settled particles beneath the pump inlet
- Carefully chosen wear resistant materials to maximise service lifetime
- Single stage, open vane impeller
- Precision bearings
- Non pressurised mechanical seal

### Applications

- Open pit mine dewatering
- Mine tailings recovery and reprocessing
- Minerals processing - separation, purification, concentration
- Power plant ash removal and cleaning
- Lagoon dredging and silt removal
- River water and dam desilting
- Harbour and dry-dock cleaning
- Steel slag transport
- Rolling mill scale and metal cutting swarf transport
- Sewage and waste transfer

### Pump Performance

|                                     |                        |
|-------------------------------------|------------------------|
| Design fluid handled                | Slurry                 |
| Maximum fluid SG                    | 2.5 kg/l               |
| Maximum fluid solids content        | 65 % by weight         |
| Maximum particle size               | 76 mm                  |
| Maximum fluid temperature           | 90 °C                  |
| Recommended pH range                | 4-10                   |
| Weight (excluding cable)            | 2300 kg                |
| Outlet diameter                     | 200 mm                 |
| Maximum flow                        | 600 m <sup>3</sup> /hr |
| Maximum head                        | 27 m (2.6 bar)         |
| Impeller diameter                   | 410 mm                 |
| Impeller tip speed                  | 21 m/s                 |
| Peak efficiency                     | 52 %                   |
| Maximum submergence depth*          | 28 m                   |
| Shut off head at maximum pump speed | 27 m                   |

\* as standard, can be deeper if required

### Electrical Data

|                                      |                                                                                        |
|--------------------------------------|----------------------------------------------------------------------------------------|
| Motor type                           | Vertical, oil filled, squirrel cage induction                                          |
| Frequency                            | 50Hz                                                                                   |
| Phase                                | 3                                                                                      |
| Motor rating                         | IEC 60034-1                                                                            |
| Protection class                     | IP68                                                                                   |
| Starting method                      | Direct on Line (DOL), Soft Start, Variable Speed Drive. Note: Star Delta not available |
| Power                                | 112 kW                                                                                 |
| Speed                                | 960 rpm - 6 pole                                                                       |
| Number of starts per hour            | 10                                                                                     |
| Voltage variation                    | +/- 6%                                                                                 |
| Voltage imbalance between phases     | Max 2%                                                                                 |
| Insulation class                     | H (180°C)                                                                              |
| Motor overload factor                | 1.87                                                                                   |
| Duty rating                          | S1                                                                                     |
| Efficiency class                     | IE exempt (integral with pump)                                                         |
| Oil type                             | Mineral uninhibited to IEC 60269 (04)                                                  |
| Standards complied with              | IEEE 112-2004, IEC 60034-1-2, AS60034-1, JEC 37                                        |
| Noise level at 1m when not submerged | 78 dB                                                                                  |
| Motor efficiency                     | 90%                                                                                    |

# Goodwin



## Electrical Data

| Voltage | Rated power (kW) | RPM | Rated (full load) Current (A) | Inrush Current Soft Start (A) | No Load Current (A) | Power Factor cos φ (full load) | Power Factor cos φ (75% load) | Power Factor cos φ (50% load) | Recommended Over Current Protection (A) |
|---------|------------------|-----|-------------------------------|-------------------------------|---------------------|--------------------------------|-------------------------------|-------------------------------|-----------------------------------------|
| 380     | 112              | 960 | 210 A                         | 735 A                         | 52 A                | 0.91                           | 0.82                          | 0.81                          | 400 A                                   |
| 415     | 112              | 960 | 190 A                         | 665 A                         | 48 A                | 0.91                           | 0.82                          | 0.81                          | 400 A                                   |
| 525     | 112              | 960 | 150 A                         | 530 A                         | 39 A                | 0.91                           | 0.82                          | 0.81                          | 350 A                                   |
| 660     | 112              | 960 | 120 A                         | 420 A                         | 30 A                | 0.91                           | 0.82                          | 0.81                          | 300 A                                   |
| 1000    | 112              | 960 | 80 A                          | 280 A                         | 23 A                | 0.91                           | 0.82                          | 0.81                          | 300 A                                   |

## Materials

|                    |                                                            |
|--------------------|------------------------------------------------------------|
| Pump body castings | SG Iron                                                    |
| Impeller           | Tungsten carbide coated NiHard                             |
| Casing             | NiHard                                                     |
| Wear plate         | Tungsten carbide coated NiHard                             |
| Inducer            | Tungsten carbide tiled and coated hardened stainless steel |
| Shaft              | Martensitic stainless steel                                |
| Mechanical seal    | Stainless steel and silicon carbide                        |
| O-rings            | Nitrile rubber                                             |
| Fasteners          | Stainless steel                                            |

## Coating System

|                     |                                                                                                 |
|---------------------|-------------------------------------------------------------------------------------------------|
| Surface preparation | Class 2.5                                                                                       |
| Undercoat           | Two component high build epoxy coating. 125µm thickness (typical).                              |
| Top coat            | Acrylic polyurethane high gloss. 50µm thickness (typical). Yellow to RAL 1003 / BS4800 08-E-51. |

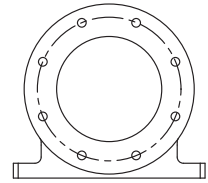
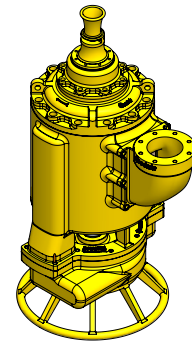
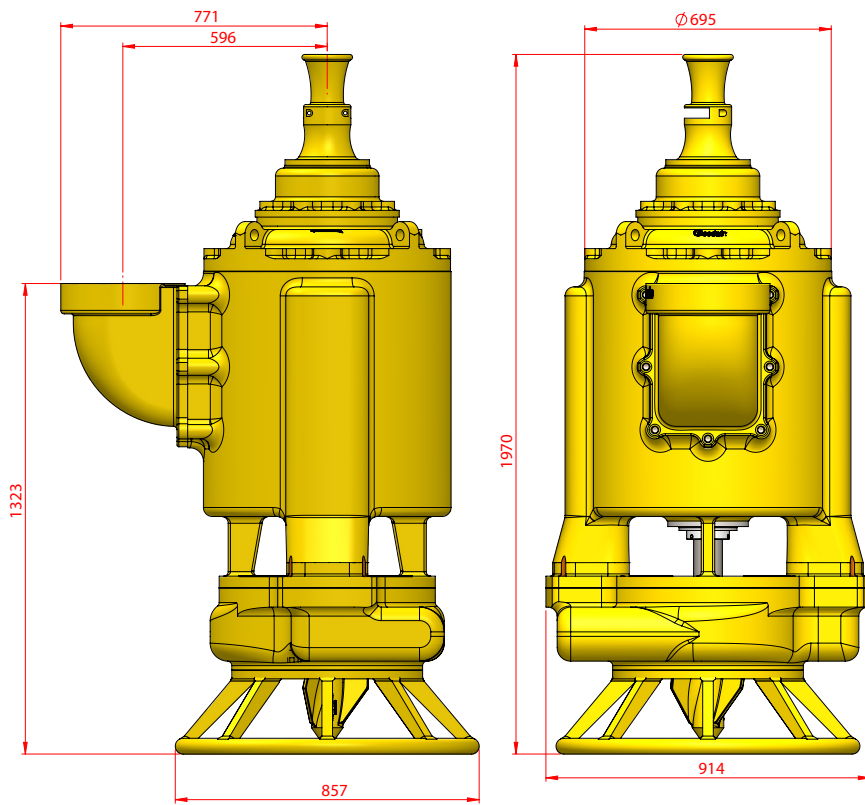
## Other Data

|                            |                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                        |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recommended cable          | Heavy duty 70mm <sup>2</sup> 3 phase + earth copper cored cable with black chlorinated polyethylene (CPE) rubber sheathing. To standard EN 50525-2-21. Voltage rating 750V. Outer sheath is oil resistant to IEC 60811-404, flame resistant to IEC 60332-1-2. Maximum external diameter 46.7mm. Weight 4.2kg/m. |                                                                                                                                                        |
| Recommended lifting chains | Length: 0.6 m                                                                                                                                                                                                                                                                                                   | Material: Steel SWL: 3200 kg                                                                                                                           |
| Hose connection            | Outlet flange configuration                                                                                                                                                                                                                                                                                     | 200mm PN10 M20*2.5P 8 Places ø295mm PCD                                                                                                                |
| Cable gland                | Material                                                                                                                                                                                                                                                                                                        | Nickel plated brass (stainless steel optional)                                                                                                         |
|                            | Specification                                                                                                                                                                                                                                                                                                   | BS6121:Part 1:1989                                                                                                                                     |
| Control panel              | Rating                                                                                                                                                                                                                                                                                                          | IP65                                                                                                                                                   |
|                            | Weight                                                                                                                                                                                                                                                                                                          | 108kg                                                                                                                                                  |
|                            | Description                                                                                                                                                                                                                                                                                                     | Voltage protection, earth leakage protection, phase imbalance, automatic operation with level switch and timer. Soft start as standard (VSD optional). |

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## SUBMERSIBLE SLURRY PUMPS

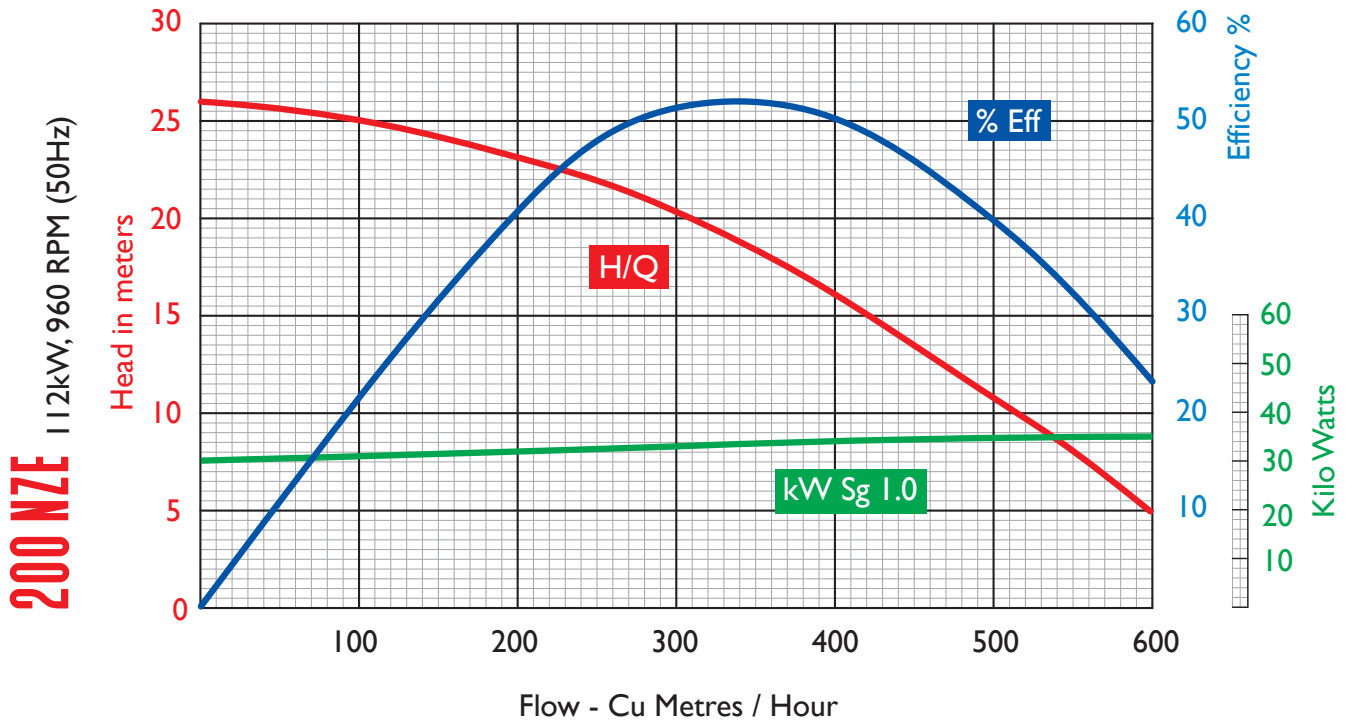
### Weights & Dimensions



**200mm Pump**  
 200mm PN10  
 M20\*2.5P  
 8 Places  
 ø295mm PCD



### Pump Curve



All pump designs and information is subject to upgrade and revision.

Doc.Ref 200NZE 50 ENG V1 10.2020

