



Submersible Pumps Z8, Z10 & Z12 Series

IN STAINLESS STEEL

Technical Data

Performance Range:

- Capacity up to 520m³/h (2300 USgpm)
- Head up to 500m (1600 feet)
- Speed 2900/3500 min-1 (2900/3500 rpm)
- Motor power up to 400kW (540 HP)

Pump Sizes:

8"-12" pump end for wells 8-12" depending on motor size

- | | 50Hz | 60Hz |
|-------------------|----------------------------|----------------------------|
| ○ Z855 - Z8125 | 50 - 125m ³ /h | 65 - 150m ³ /h |
| ○ Z10150 - Z10275 | 150 - 280m ³ /h | 180 - 320m ³ /h |
| ○ Z12340 - Z12420 | 340 - 420m ³ /h | 410m ³ /h |

Water Temperature:

- Standard 25/35°C (77/95°F)
- Versions up to 60°C (140°F) optional available

Pumped Fluids:

- Potable water
- Natural water
- Seawater (material code Duplex ZR required)
- Thermal water
- Mineral water
- Mine water
- Sand content max. 50g/m³

Applications:

- Water supply and distribution in cities
- Wells in water plants and agriculture
- Water supply in breweries, food and beverage industries
- Cooling water in industry
- Irrigation in agriculture and sport facilities
- Water level control and dewatering in mines and construction sites
- Fountains and water parks

Materials:

Basic type in austenitic stainless steel (Z):

- Impellers and casings 1.4308
- Shaft 1.4057, coupling 1.4462

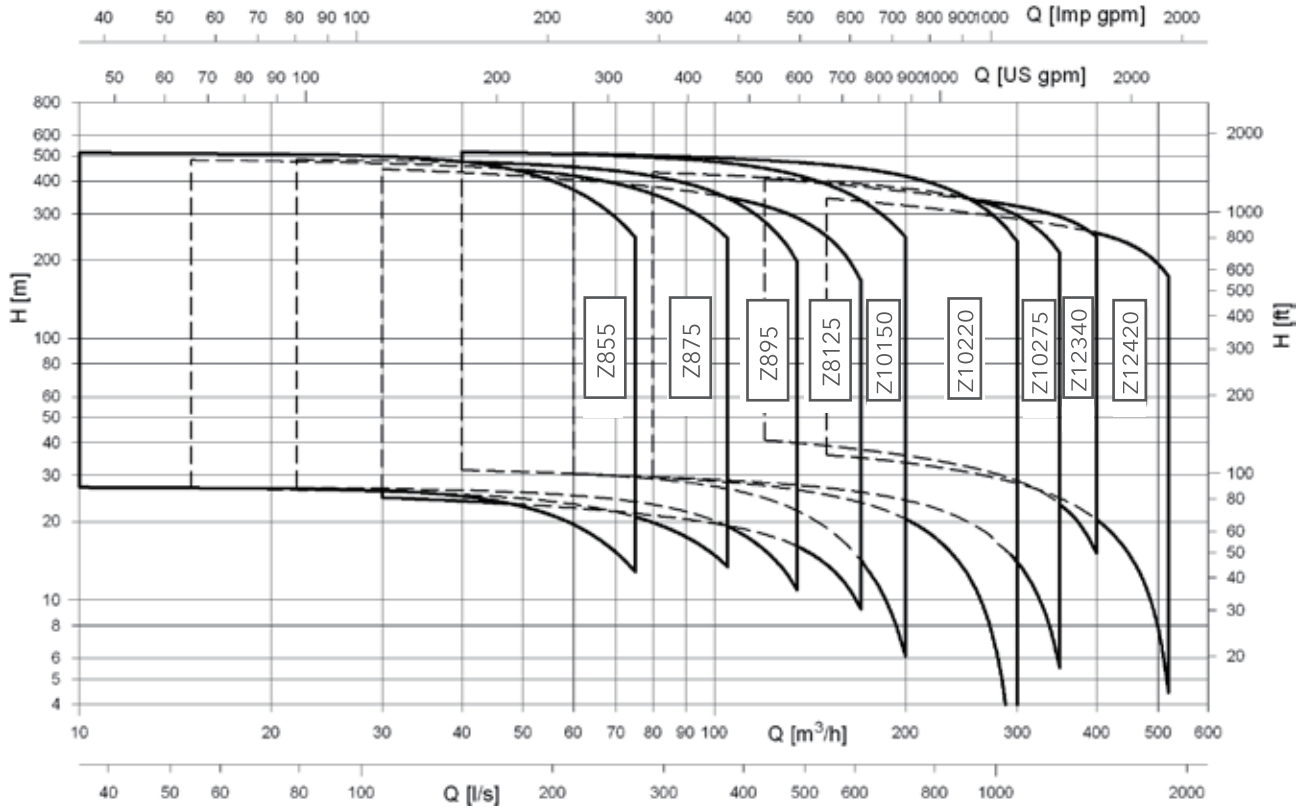
Optional type Duplex (ZR):

- Impellers and casings 1.4517
- Shaft and coupling 1.4462

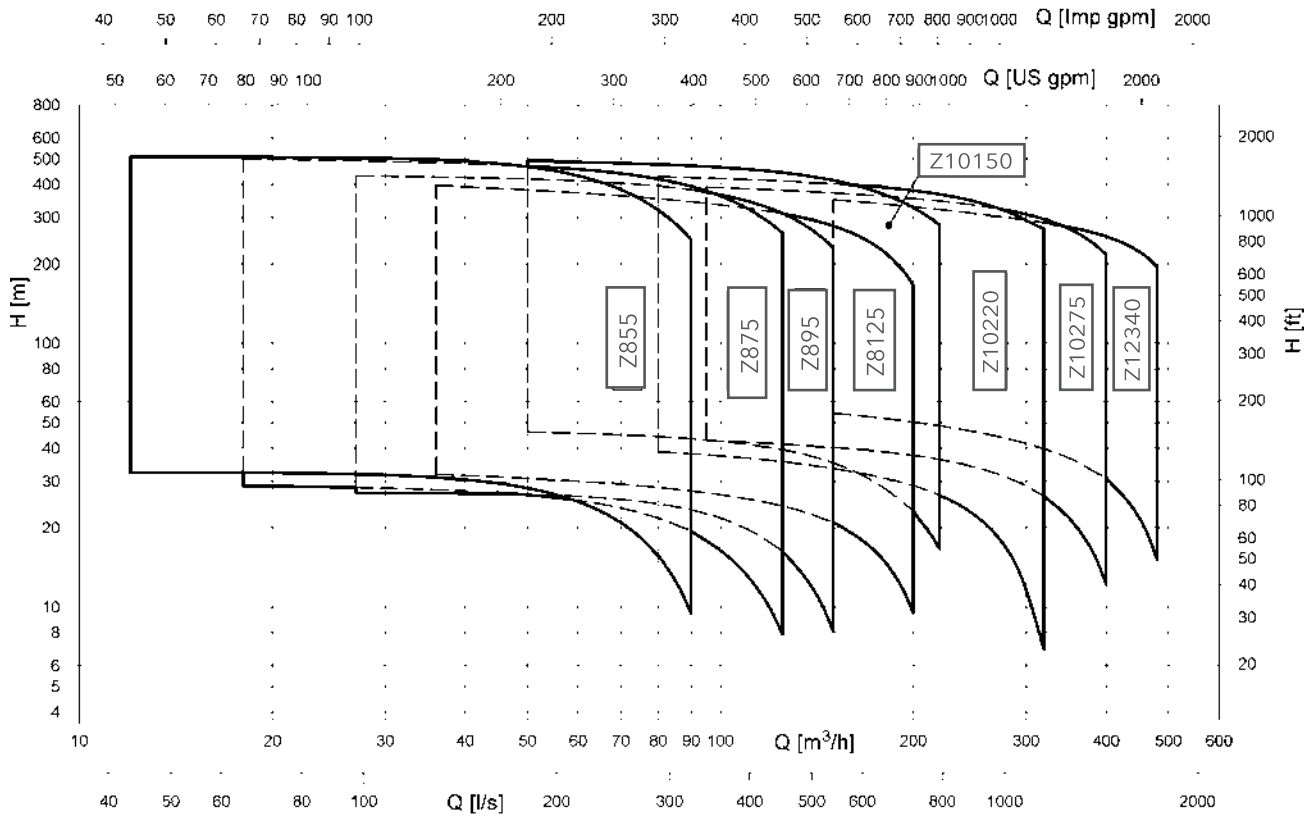
- Bearing rubber EPDM
- Wear rings POM Polyacetal Polymere



Performance Range 2900 min⁻¹



Performance Range 3500 min⁻¹



Pump Technology

Submersible borehole pumps in austenitic CrNi stainless steel, investment cast.

*Optional type
ZR Duplex 1.4517*

- New optimized hydraulics
- Improved efficiency
- Reduced life cycle costs

Enclosed impellers in CrNi stainless steel, investment cast.

*Type Duplex:
Enclosed impellers and bowls in Duplex stainless steel investment cast.*

Bowls with optimized hydraulic and mechanical design with integrated diffusers in CrNi stainless steel investment cast.

Suction casing in CrNi stainless steel, investment cast, optimized low loss flow into first stage impeller. Entrance protected by strainer in stainless steel.

*Type Duplex:
Suction casing in Duplex stainless steel, investment cast, suction strainer in Duplex.*



Discharge casing with incorporated non return valve, spring loaded, soft gasket, double guidance in rubber bushes applicable for vertical and horizontal installation.

Optional version without valve available.

Slide bearings in each stage for optimal shaft guidance.
Rubber (EPDM) / stainless steel 1.4057.

*Type Duplex:
Rubber (EPDM) / Duplex 1.4462.*

Impellers fixed by conical locking sleeves made of Duplex 1.4462.

Dynamic wear ring made of POM (Polyacetal Polymer) for reduced internal losses and reduced wear.

Basic type:
Shaft made of 1.4057, coupling made of 1.4462.

*Type Duplex:
shaft and coupling made of 1.4462.*

Motor connection for 6" and 8" motors according to Nema with splined shaft and up thrust bearing in suction casing. For 10" and 12" motors with cylindrical shaft end with key.

Design features for improved reliability

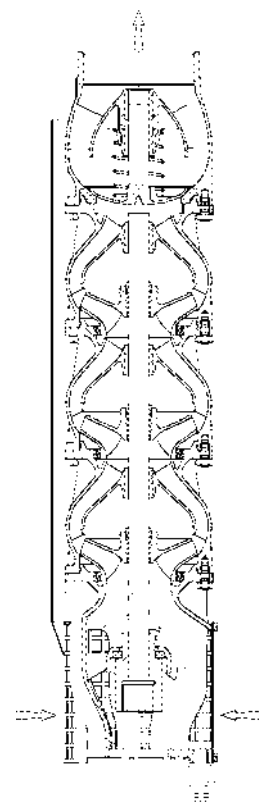
- Completely made of investment cast stainless steel for
 - increased corrosion resistance
 - improved wear resistance
 - high efficiency
- Dynamic wear rings
 - minimized internal losses
 - reduced wear in the clearance between impeller and casing
- Conical locking sleeves and pump coupling Duplex as standard
 - reduced corrosion
 - improved operational safety
 - simplifies maintenance
- Slide bearings in each stage - rubber bearing bush
 - improve smooth operation
 - lubrication grooves for improved lubrication
 - extended life time also at tough operating conditions
- Pumps with HYDROVAR (optional)
 - optimized performance
 - protect against unwanted operating conditions
 - avoid need for trimmed impellers
 - improve life time due to operating conditions according to demand at reduced speed

Design features for reduced operating costs

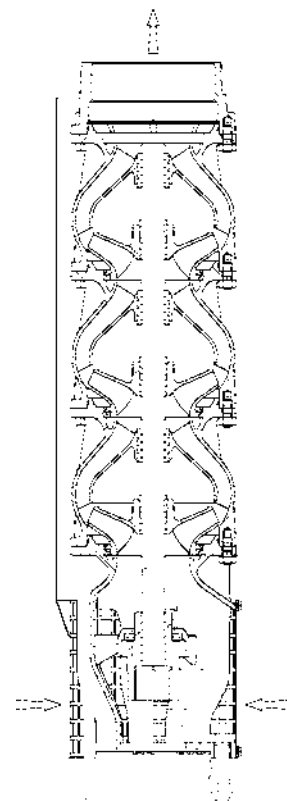
- High efficiency
 - newly developed optimized hydraulics
 - investment castings with high quality of surface finish and minimal tolerances
 - dynamic wear rings minimize internal losses
- HYDROVAR (optional)
 - optimized pump performance (adjustment according to effective demand)
 - provides high potential for energy savings

Design features for reduced installation costs

- Pumps with integrated non-return valve
 - reduce installation costs
- Pumps for vertical and horizontal installation
 - easy adjustment to individual conditions at site
- HYDROVAR (optional)
 - eliminates expensive bypass arrangements or control valves



with
non return valve



without
non return valve

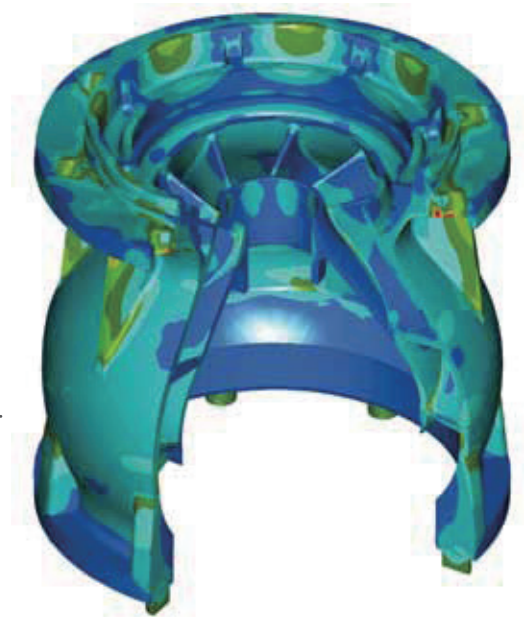
Submersible pump models Z Series provide long-time value, long-time reliability and durability.

Pump Technology

Pump components geometry by FEA analysis (Finite Element Analysis) and extensive testing strictly optimized.

Resulting in a new design concept with minimized weight and machining.

By this design concept even in case of using stainless steel material with excellent corrosion and wear resistance it is possible to provide a good price performance ratio with improved customer value.



“Dynamic” wear ring design

This wear ring design provides the following advantages:

Design advantages for ease of start up

- large clearance at stand by (pressureless)
- POM (Polyacetal Polymer) avoids corrosion in the clearance area and blocking at stand by of the pump

Design advantages for reduction of the internal losses

- wear ring clearance during operation is dynamically reduced controlled by the pressure (head) generated by each stage, resulting in reduced internal losses at operation
- minimized internal losses improve hydraulic efficiency of the pump

Design advantages for reduction of wear

- operation with hydrodynamic lubrication
- by minimizing the internal losses (internal flow through wear ring clearance) automatically less solids (sand) contained in the fluid are carried into the wear ring area - resulting in reduced wear
- conical wear ring gap at operation (enlarged in the direction of the flow) allowing easier flush out of particles from the clearance



Wear ring pressureless



Wear ring in operation

Submersible Motors Technology:

Wet type motors - rewindable

Performance Range:

Motor Power:

6" design L6W:	4 - 37kW (5,5 - 50HP)
8" design L8W:	30 - 93kW (40 - 125HP)
10" design L10W:	93 - 150kW (125 - 200HP)
12" design L12W:	185 - 300kW (250 - 400HP)
12" design PFR:	220 - 400kW (300 - 540HP)

Speed:

2900/3500 min⁻¹ (2900/3500 rpm)

Voltage:

380V - 415V, 50Hz / 460V, 60Hz

Other voltages upon request

Temperature:

25°C (77°F) up to max: 60°C (140°F)

Product Features:

- Rewindable design
- Cable material according to drinking water regulations (WRAS approved)
- Sand slinger and shaft seal for high performance in fluid containing sand
- High efficiency electrical design for low operation costs
- All motors prefilled and 100% tested
- Non contaminating water filled design

Materials:

Motorversion	Standard	316 S	904 L
Motorshell	1.4306	1.4404	1.4539
Bearing casings	Cast iron	1.4408	1.4517
Thrust casing	Cast iron	1.4408	1.4517
Mechanical seal	Carbon/Ceramic/NBR	Carbon/Ceramic/NBR	Carbon/Ceramic/NBR
Seal cover	1.4308	1.4404	1.4462
Shaft end	1.4021 - 6" and 1.4462 - 8" and 12"	1.4462	1.4462
Diaphragm	EPDM	EPDM	EPDM
Cable	EPR	EPR	EPR
Other gaskets	NBR	NBR	NBR



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- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

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