



EBARA

CH2302EC

VERTICAL MIXED FLOW VOLUTE PUMPS

Model VLZ

Bore 200 ~ 1000mm (8 ~ 40in)



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Features

- Product's quality and performance are superior to others due to standardized production.
- Low price and fast delivery are assured by standardization.
- Free from clogging in sewage treatment.
- Applicable to any construction such as one floor or two floor system.
- Large hand hole facilitates inside inspection.
- Simplified and durable construction enable smooth operation and easy maintenance.
- Compact and light weight construction saves installation space.
- Each part is interchangeable and makes supply of parts easy.

Applications

- Transfer for sewerage works
- River water drainage
- Transfer for general industrial use
- Water intake

Application Range

- Capacity: 2.5 ~ 150m³/min (660 ~ 40000USGPM)
- Total head: 4 ~ 20m (13 ~ 65ft)
- Liquid: Sewage, River water, Fresh water
- Liquid temperature: Below 80°C (176°F)

Specifications

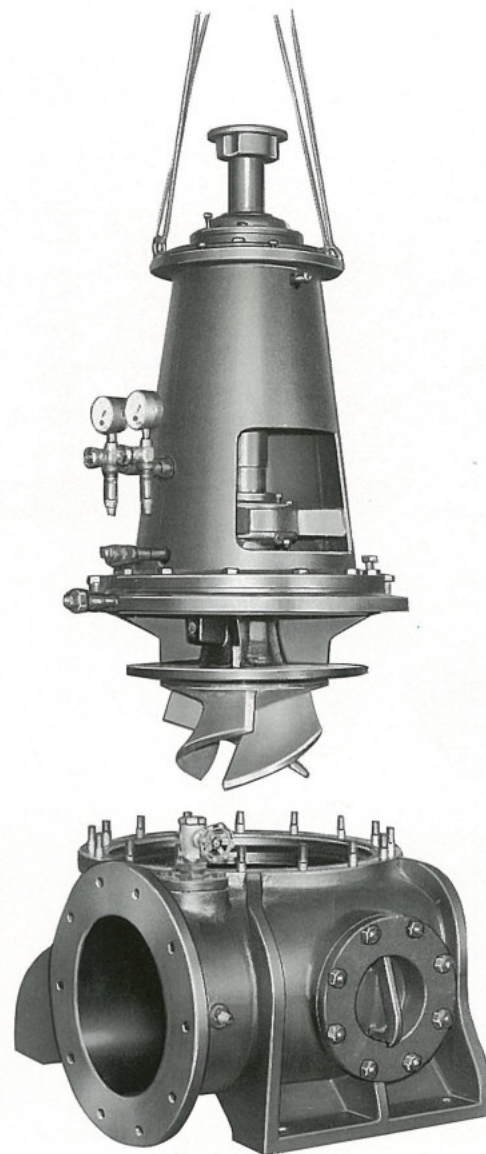
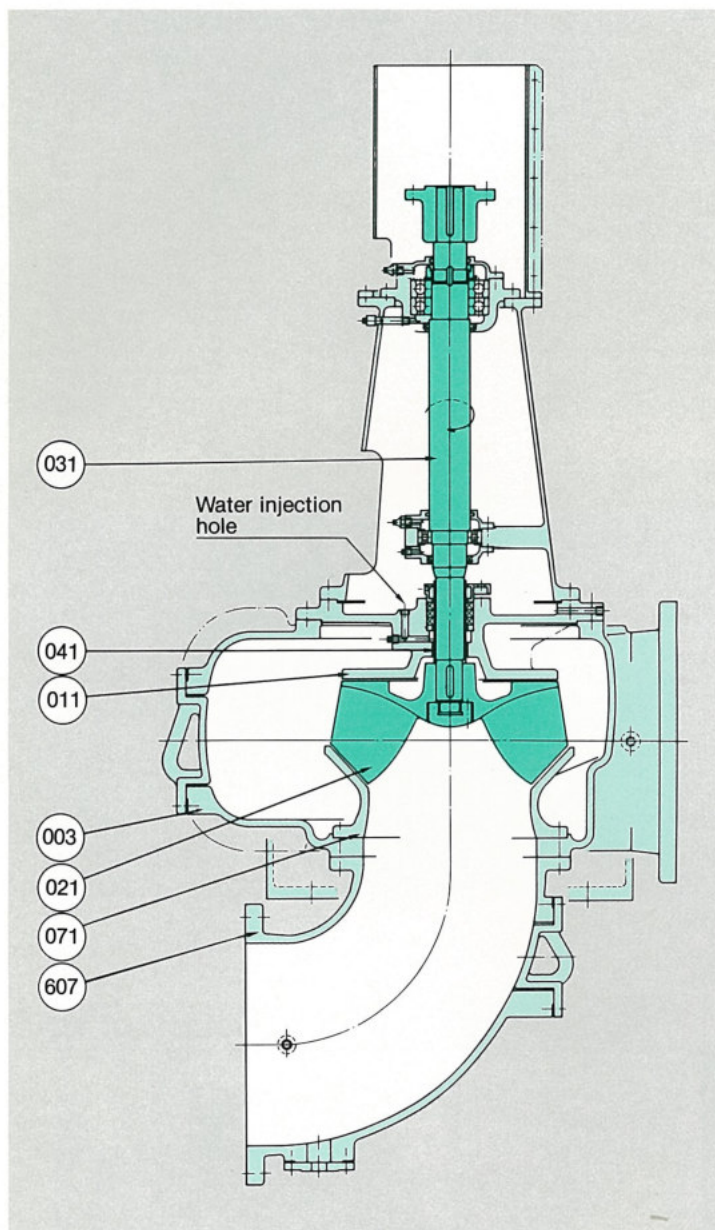
	STANDARD	OPTIONAL
Shaft seal	Gland packing	Mech. seal
Direction of rotation	CW (viewed from driver)	CCW
Flange	JIS 10K	Any standard
Suction elbow	90° bend	Any type
Drive method	Motor direct drive	Diesel engine drive through gear
Accessories	Foundation bolts, shaft coupling, self sealing water piping, drain piping	Gauge, pressure switch, bearing thermometer, tools, companion flange, etc.

(NOTE) Other specifications can be available, if required.

Standard Accessories

- In the case of 1 floor system
 - Coupling 1 set
 - Motor pedestal 1 pc
 - Anchor bolts 1 set
- In the case of 2 floor system
 - intermediate coupling 1 set
 - Motor base frame (with sole plate) 1 set
 - Anchor bolts 1 set
 - Checkered plate 1 set
 - Coupling guard 1 set
- In the case of Intermediate bearing is attached (for more than 3 floor system)
 - Motor base frame (with sole plate) 1 set
 - Intermediate bearing (Including bearing case, Ball bearing, Intermediate bearing pedestal, Intermediate shaft, etc.) 1 set
 - Intermediate bearing base frame (with sole plate) 1 set
 - Intermediate coupling 1 set
 - Checkered plate 1 set
 - Anchor bolts 1 set
 - Coupling guard 1 set

Construction



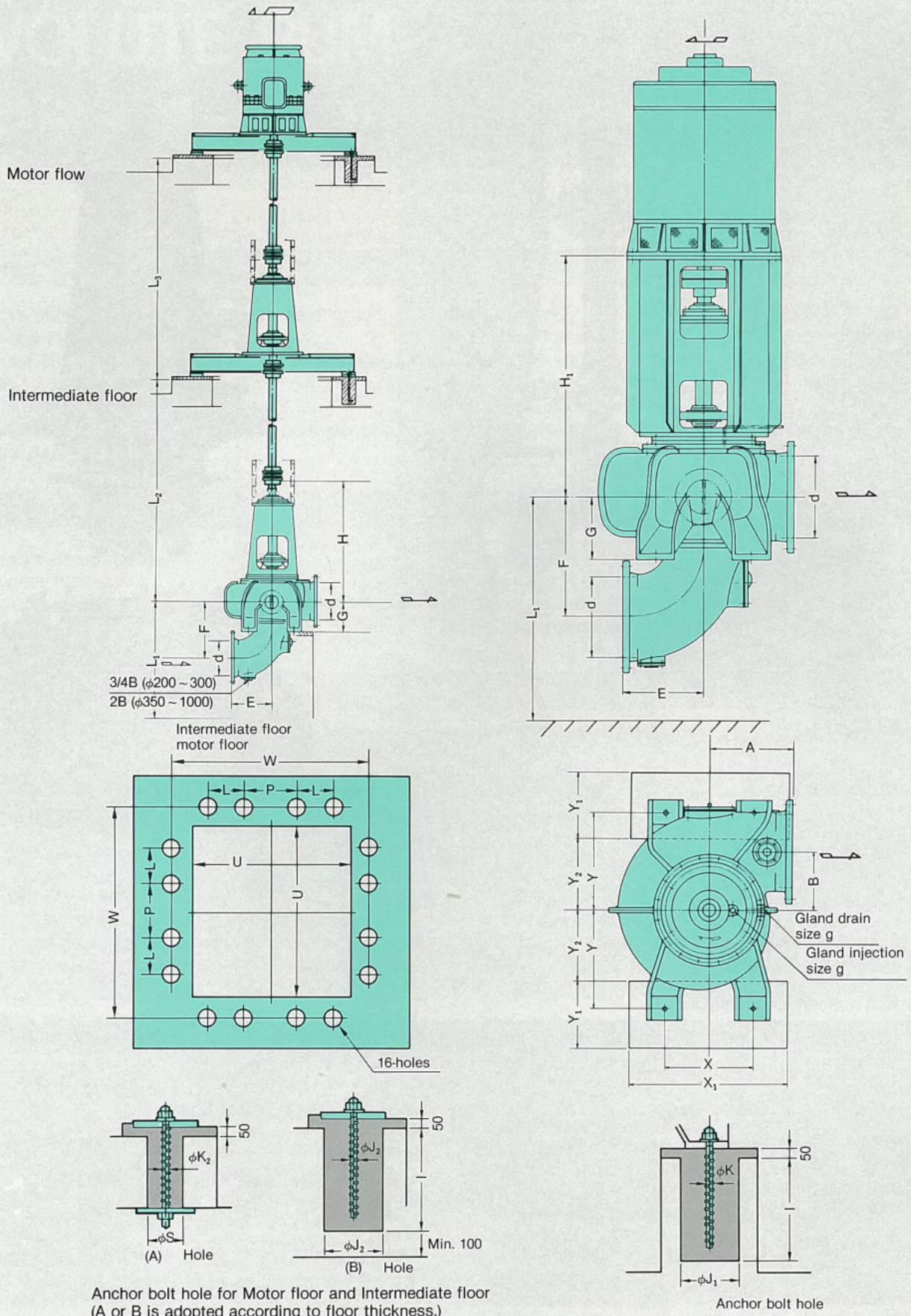
Materials

(Typical material combinations)

Part No.	Part name	$\phi 200 \sim 300$ (8 ~ 12in)	$\phi 350 \sim 1000$ (14 ~ 40in)
003	Discharge casing	Cast Iron	
011	Casing cover	Cast Iron	
021	Impeller	403 S.S.	304 S.S.
031	Shaft	420 S.S.	403 S.S.
041	Packing sleeve	420 S.S.	304 S.S.
071	Casing liner	403 S.S.	304 S.S.
607	Suction elbow	Cast Iron	

(NOTE) Selection of material requires careful study of the properties of the liquid handled and of the operating conditions, etc. For specific details, please consult our factory.

Outline Dimensions



Outline Dimensions

(Unit: mm)

Model	Dimensions of Pumps									Dimensions For Foundations				
	d	A	B	E	F	G	H	H _s	g	X	Y	X ₁	Y ₁	Y ₂
200VLZ	200	310	240	330	440	185	871	1025	10	320	300	540	300	200
250VLZ	250	330	260	405	535	210	881	1055	10	320	350	540	350	240
300VLZ	300	355	290	480	560	235	876	1040	10	360	380	580	400	270
350VLZ	340	470	290	400	600	270	1215	1415	15	400	450	800	600	300
400VLZ	400	470	330	420	640	300	1235	1435	15	450	500	850	600	350
450VLZ	450	500	360	450	670	350	1255	1455	15	500	550	900	600	400
500VLZ	500	620	480	550	750	380	1610	1810	20	580	590	1000	650	420
600VLZ	600	650	510	650	900	420	1630	1830	20	680	660	1200	650	490
700VLZ	700	700	600	750	1000	470	1670	1870	20	820	750	1400	650	550
800VLZ	800	750	700	850	1350	570	2015	—	20	900	870	1500	700	650
900VLZ	900	850	800	950	1550	600	2150	—	20	1000	1020	1600	700	800
1000VLZ	1000	950	900	1100	1750	680	2300	—	20	1100	1120	1700	700	900

Model	Dimensions for Foundations												
	U	W	P	L	I			S			L ₁ min.	L ₂ max.	L ₃ max.
						J ₁	J ₂		K ₁	K ₂			
200VLZ	1100	1450	300	250	400	100	100	100	20	20	700	3000	3000
250VLZ	1100	1450	300	250	430	150	100	100	22	20	850	3000	3000
300VLZ	1200	1550	400	250	430	150	100	100	22	20	950	3000	3000
350VLZ	1300	1650	370	280	430	150		150	22		950	3000	3000
400VLZ	1400	1750	420	280	430	150		150	22		1000	3500	3500
450VLZ	1500	1850	470	280	430	150		150	22		1050	3500	3500
500VLZ	1700	2050	550	300	500	150		150	24		1150	4000	4000
600VLZ	1900	2250	650	300	500	150		150	24		1350	4500	4500
700VLZ	2100	2450	700	350	500	150		150	24		1500	5000	5000
800VLZ	2400	2800	800	400	630	200		200	30		1950	5500	5500
900VLZ	2600	3100	1100	400	630	200		200	30		2200	6000	6000
1000VLZ	2900	3400	1300	400	630	200		200	30		2450	6000	6000

How to Determine Motor Output

The motor output is to be determined by the following formula:

$$M(kW) = K \times \rho \times Q \times H$$

where, Q: Capacity (m³/min) H: Total head (m)

ρ : Density (kg/l)

(fresh water = 1.0 sewage = 1.0

sea water = 1.025)

K: Coefficient (as per the list below)

Bore mm	K value
200 ~ 300	0.245
350 ~ 450	0.236
500 ~ 700	0.23
800 ~ 1000	0.225

(Calculation Example)

In case of sewage, Q = 30m³/min. H = 20m, 50Hz

(Bore 450),

$$M(kW) = 0.236 \times 1.0 \times 30 \times 20 = 142kW$$

*Related motor output is determined as 145kW.

Gland Sealing Water

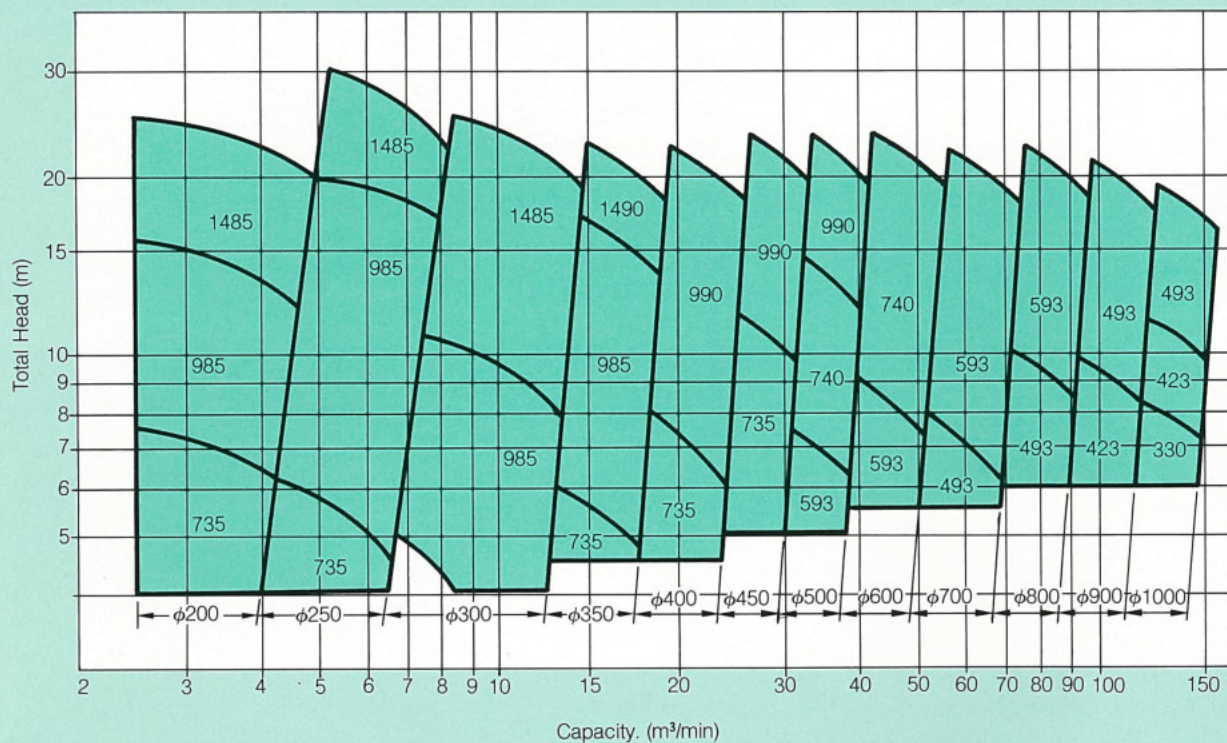
Fresh water of normal temperature having following water capacity and pressure is required per unit of pump:

Bore mm	Capacity l/min	Pressure
200 ~ 300	10	normal press.
350 ~ 450	20	+ 1.0kgf/cm ²
500 ~ 700	25	{ 0.0981MPa }
800 ~ 1000	30	or more

Selection Chart

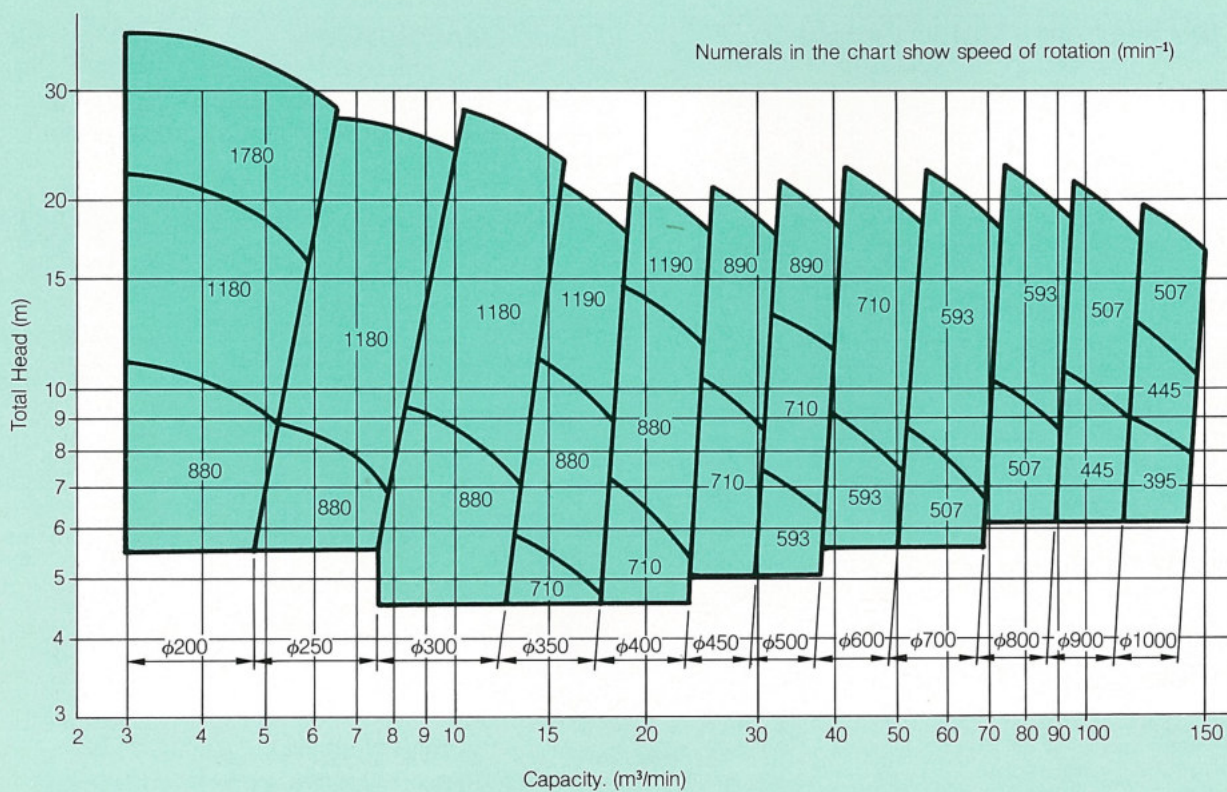
50Hz

Numerals in the chart show speed of rotation (min^{-1})

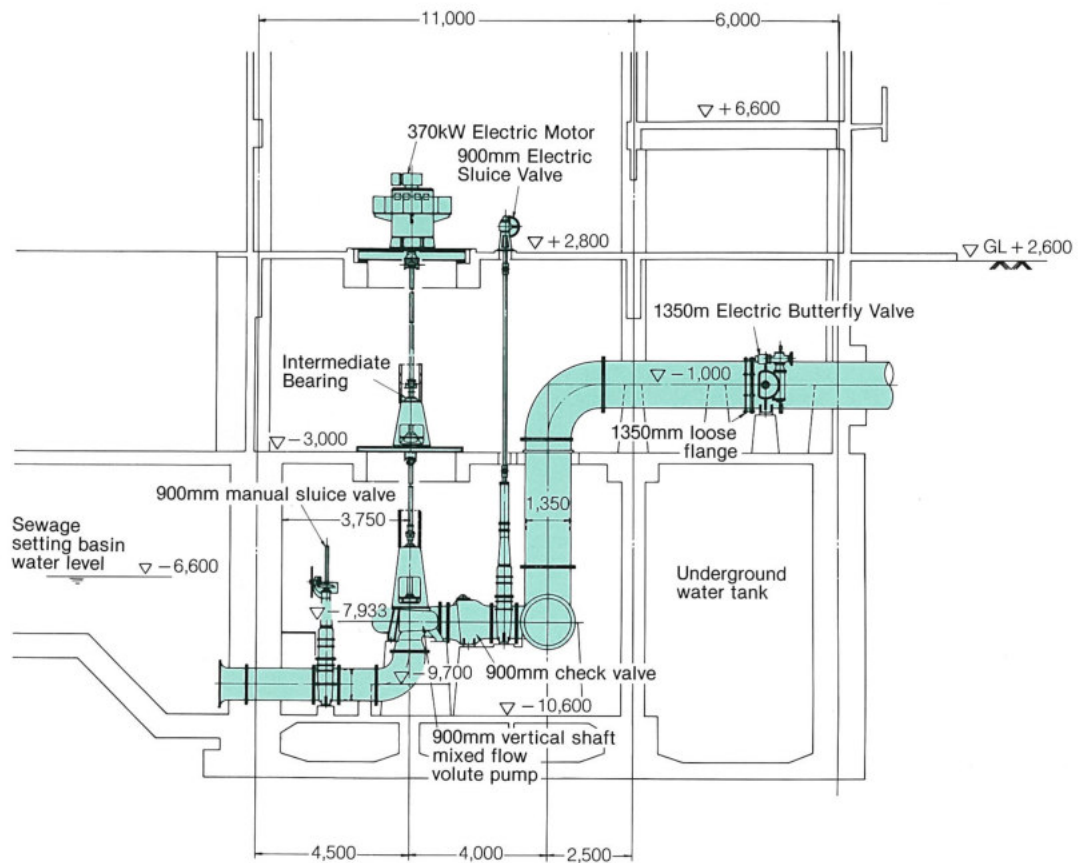


60Hz

Numerals in the chart show speed of rotation (min^{-1})



An Example for Installation



900 VLZM Vertical Mixed Flow Volute Pump
 $115 \text{ m}^3/\text{min} \times 14\text{m} \times 490 \text{ min}^{-1}$ 370kW
 $(30400 \text{ USGPM} \times 46 \text{ ft} \times 490 \text{ min}^{-1} \times 496 \text{ HP})$



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