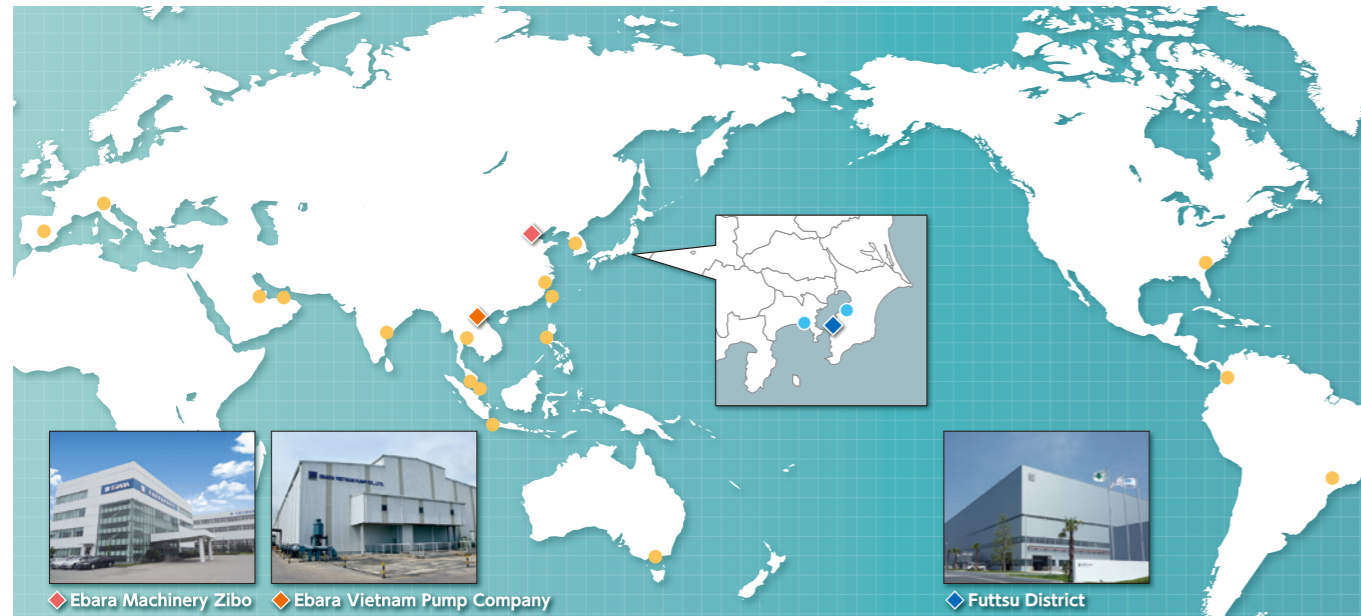


## GLOBAL MANUFACTURING FACILITIES FOR PUMP BUSINESS



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Before use this product and technology, the contents should be confirmed, complied and revised in accordance with the laws and regulations of the country. (i.e. export control laws and regulations etc.)

※1 "Model VY, Model VZ" in this catalog is our model code ※2 All specifications subject to change without notice.



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Contact to



The product(s) described herein fall under "the goods listed in row 16 of the appended table 1 of the Export Trade Control Order of Japan", so in cases of export of such Products, you need to confirm "use" and "purchaser and/or end-user" and, as case may be, obtain the approval of the Minister of Economy, Trade and Industry. (Please confirm these conditions on your own.) For more information, please contact our sales office located near you.

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**EBARA**

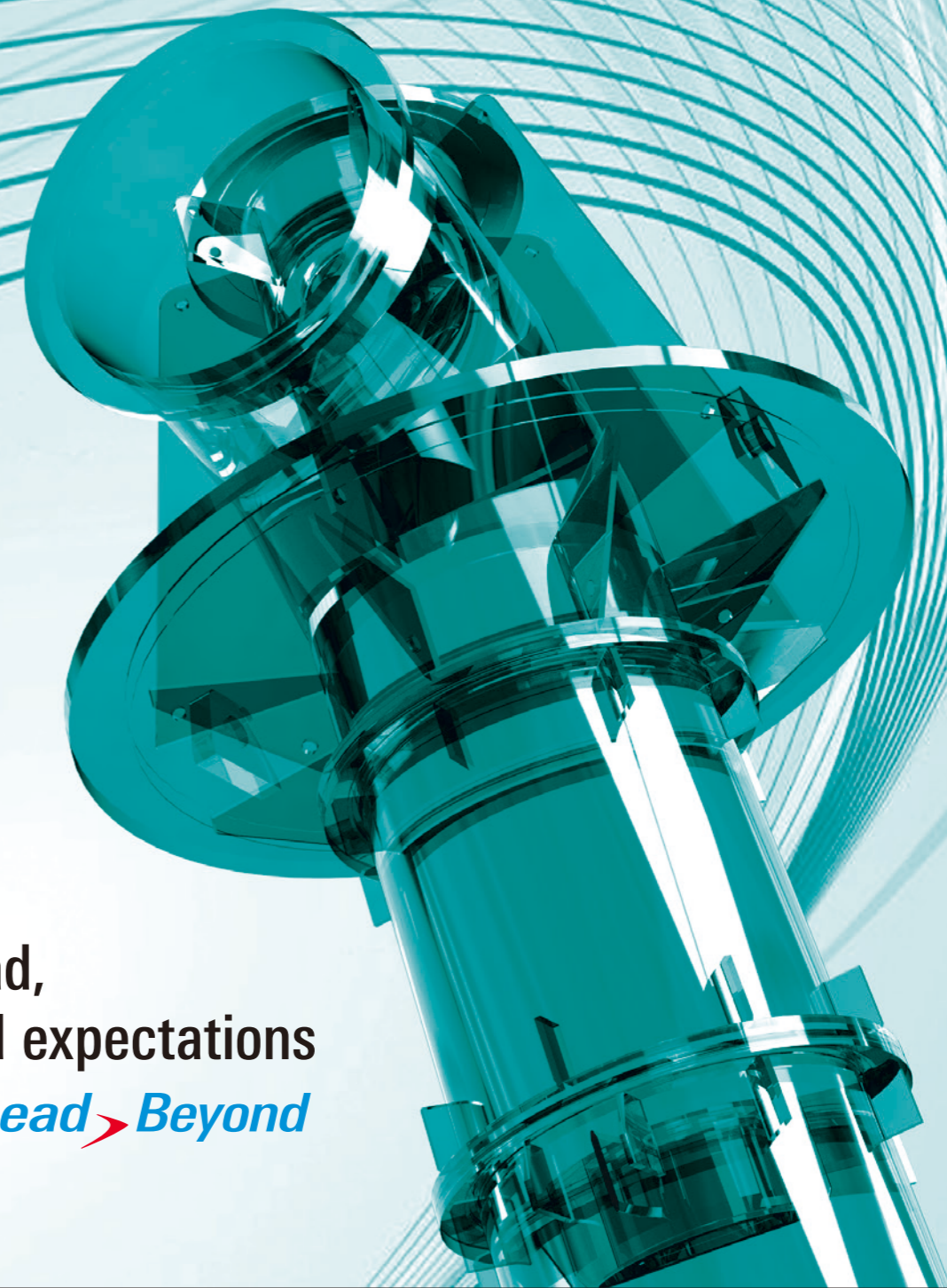
# VERTICAL MIXED FLOW PUMPS

## M1.0 Series / Model VY, Model VZ

\*"Model VY, Model VZ" in this catalogue is our model code.

Looking ahead,  
going beyond expectations

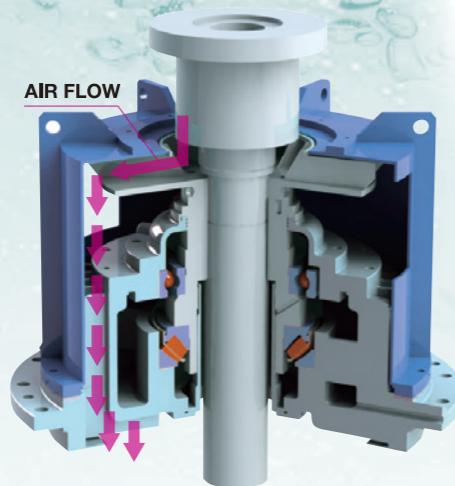
*Ahead Beyond*



# VERTICAL MIXED FLOW PUMPS M1.0 SERIES

## UTILITY FREE DESIGN

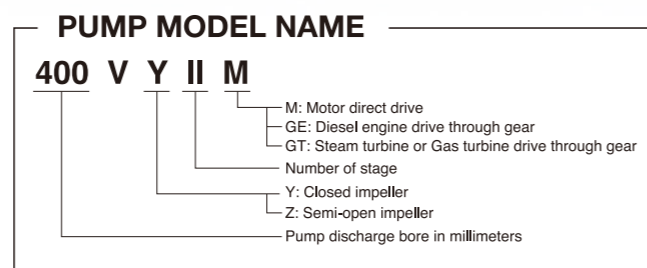
Standard M1.0 series has forced air-cooled thrust bearing units that simplify the utility system. Pumps can operate without heavy utility preparation.



## COMPACT & LIGHT WEIGHT DESIGN

Advanced design technologies have enabled compact designs that are lightweight. This is very effective for simplifying the frame.

OLD SERIES M1.0 SERIES



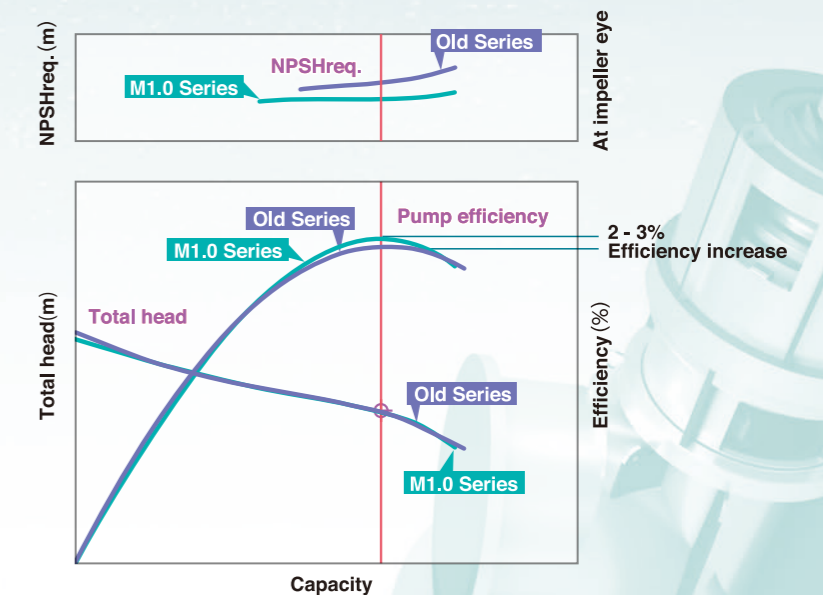
## PREFACE

M1.0 series is a result of a standardization process based on international market research coupled with a rich experience in pumping technology. Advanced design concepts have enabled new hydraulic designs that will help in the improvement of existing pumping process as well as compaction of new pumping systems.



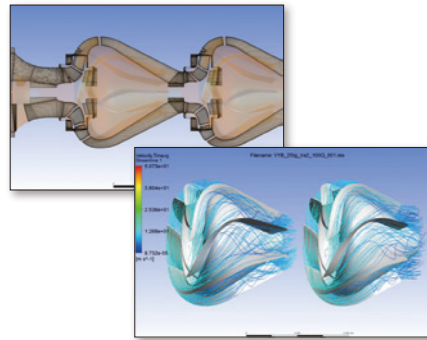
## STATE-OF-ART HYDRAULIC DESIGN

New hydraulic design is a result of improvements in various pump parts. This led to the realization of high pump efficiency and high suction performance that benefit in the form of compact design and energy savings.

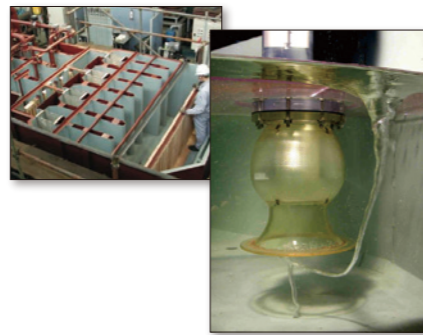


# TOTAL SERVICE FOR PUMPING PROCESS BY EBARA

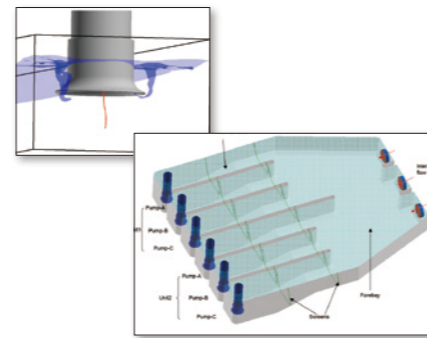
## EBARA's technology 1



CFD analysis to achieve design optimization of new and existing pumps.

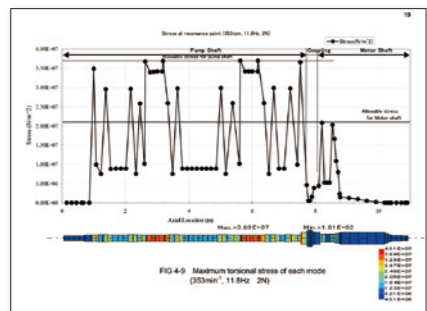


Model testing to propose the best sump pit design.

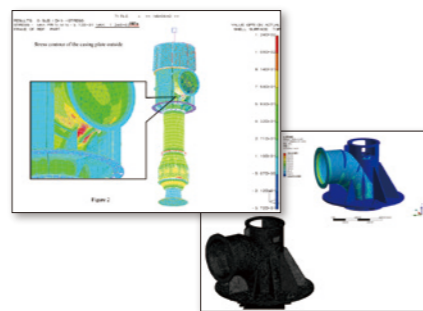


CFD analysis to predict the hydraulic flow in sump.

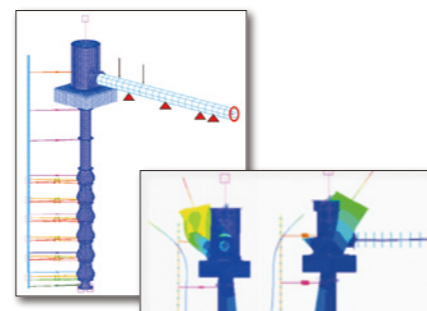
## EBARA's technology 2



Torsional & Lateral vibration analysis for pump rotor.



Structural stress analysis for best pump design.



Structural vibration analysis for detecting vibration problem.

## EBARA's technology 3



Pattern Making

Casting

Steel fabrication

Assembly and testing

Delivery packing

Ebara's factory is equipped with the necessary equipment, personnel and technology to perform all the main production processes in-house. This allows efficient control of production schedule and quality system to satisfy a wide range of Customer requirements and international standards.

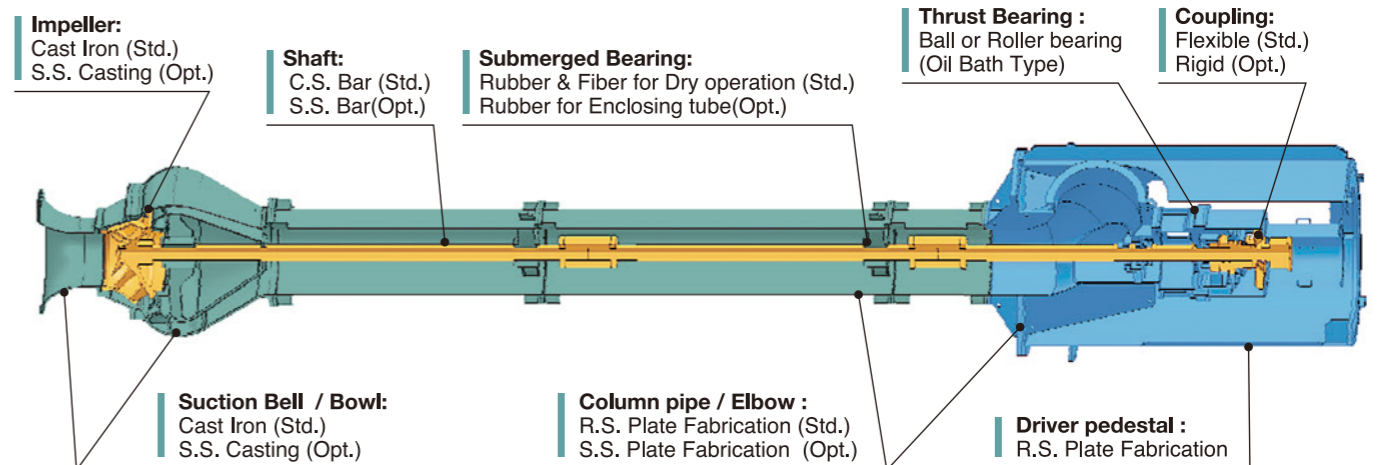
## Standard service

Items	Target market		Capability
	Standard	Option	
Service	South east Asia infrastructure (Waterworks, irrigation and drainage)	industry, power plant, Desalination (intake), Sewage	Oil and gas, Desalination(MSF) Geothermal Plant
Liquid	Fresh water, river water	Brackish water, seawater, sewage water	Brine water
Liquid Temperature	0 ~ 60°C		
Application range	Capacity : 15 m <sup>3</sup> /min ~ 190 m <sup>3</sup> /min Total head : 10m ~ 70m		Note: if total head is not within 10m - 70m, please consult our factory
Applied std. for vibration	ISO 10816-7 Category II		

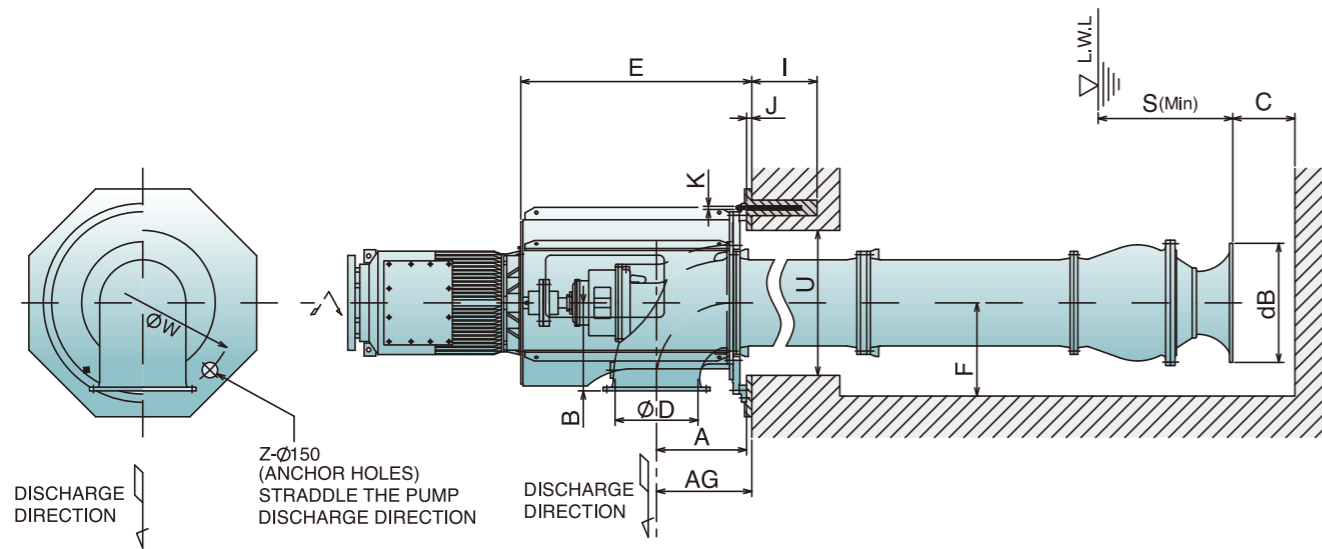
## Standard structure

Items	Standard	Option	Capability
Pump(installation) type	One floor, Surface discharge type	Two-floor	Underground discharge type, pull-out type, pit-barrel type
Direction of rotation	CW (viewed from driver)		
Discharge flange	ANSI / ASME	JIS, ISO, AWWA, others	—
Thrust bearing	Oil-bath anti-friction bearing Located in pump	— Located in motor for large horse power	Oil-bath Tilting Pad bearing —
Submerged bearing	Rubber bearing + Thordon	Rubber bearing with enclosing tube	Ceramic Bearing, AR1 etc.
Shaft seal	Gland packing	Mechanical seal	Labyrinth seal
Scope of supply	Bare pump, base plate, coupling, auxiliary piping, foundation bolts, special tool	Driver, suction strainer, automatic air release vent valve, general tools	Instrumentation is accordance with customer's requirement

## Standard material for main parts



Std.: Standard  
 Opt.: Option  
 C.S.: Carbon Steel  
 R.S.: Rolled Steel  
 S.S.: Stainless Steel

**Pump Outline Dimensions**


UNIT: mm

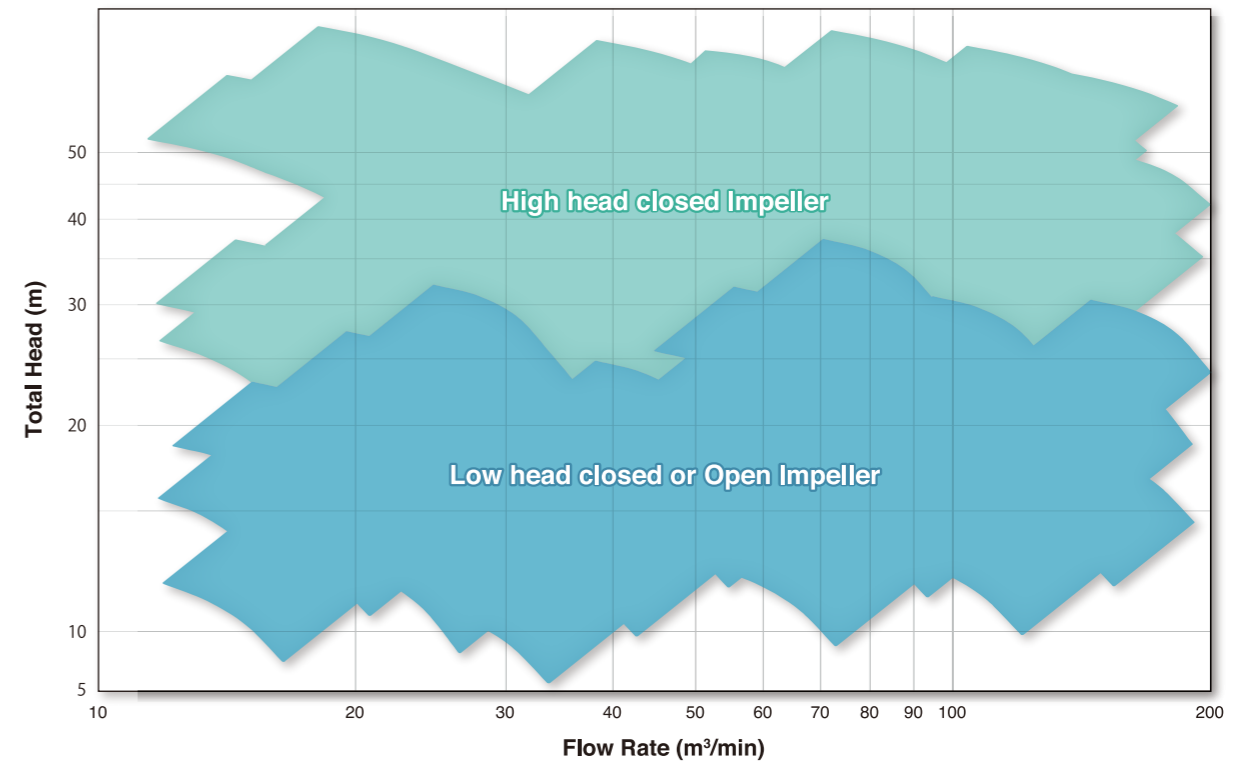
Discharge Bore D (in)	A	B	C	dB	F	J	Smin	AG	U (1)	W	Z	I	K
									U (2)				
350 (14)	450	470	300	550	400	50	825	500	820	1220	6	500	24
									650				
400 (16)	500	500	350	650	450	50	975	550	1050	1450	6	500	24
									750				
450 (18)	560	550	400	720	550	50	1080	610	1200	1600	8	630	30
									820				
500 (20)	610	600	450	820	600	50	1230	660	1250	1650	8	630	30
									950				
600 (24)	670	700	500	920	700	50	1380	720	1400	1850	8	630	30
									1050				
700 (28)	770	750	550	1020	800	50	1530	820	1550	2000	8	630	30
									1150				
800 (32)	870	850	600	1150	900	50	1725	920	1700	2150	8	630	30
									1250				
900 (36)	960	950	700	1300	1000	50	1950	1010	1900	2350	12	630	30
									1400				
1000 (40)	1150	1050	750	1450	1100	50	2175	1200	2150	2600	12	630	30
									1550				

(NOTES)

U (1) : For high head closed impeller service / U (2) : For open impeller service &amp; Low head closed impeller service

Dimensions may differ depending on service conditions.

For over 70m (230ft) rated head, please consult our factory

**Selection Chart (50Hz)**

**Selection Chart (60Hz)**
