



# JPR

## Submersible aerator

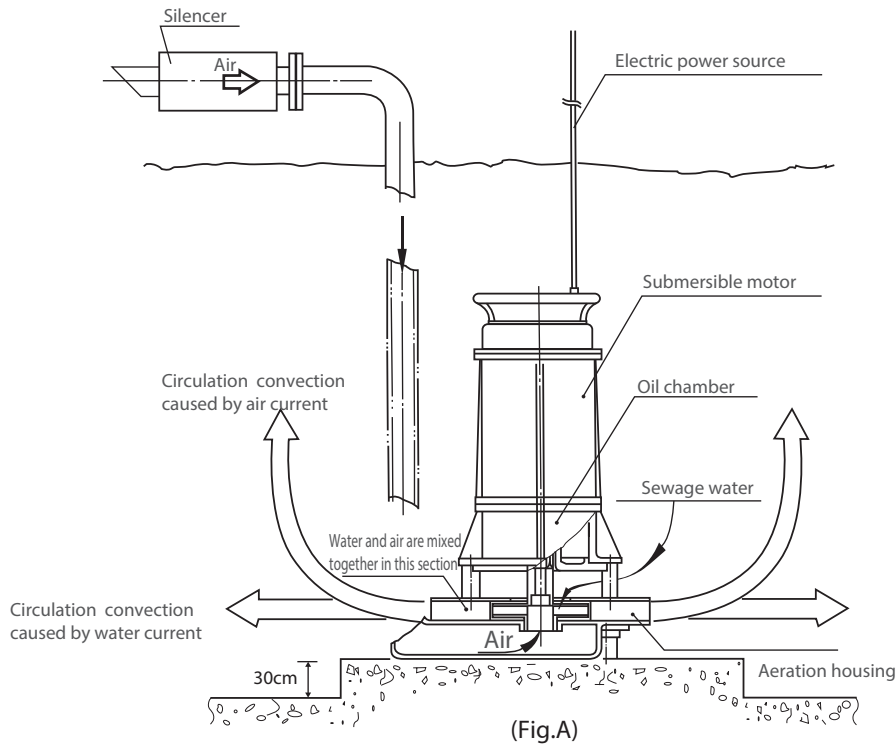
### General

With fast industrial developments, human life became more materially civilized. On the contrary, gigantic quantities of waste-water were brought by the industrial manufacturing. In the meantime, large quantities of household waste water were also resulted from our daily life. All these have affected the living quality and damaged the environmental ecology. Simavis has been making every endeavour in developing the waste water treatment equipment. In addition to waste water pumps, sewage pumps, sludge dehydration system, the company also developed submersible aerator and surface aerators for higher treatment rate of BOD and COD in the treatment of waste water. These aerators have been widely used in domestic and overseas waste water treatment plants.

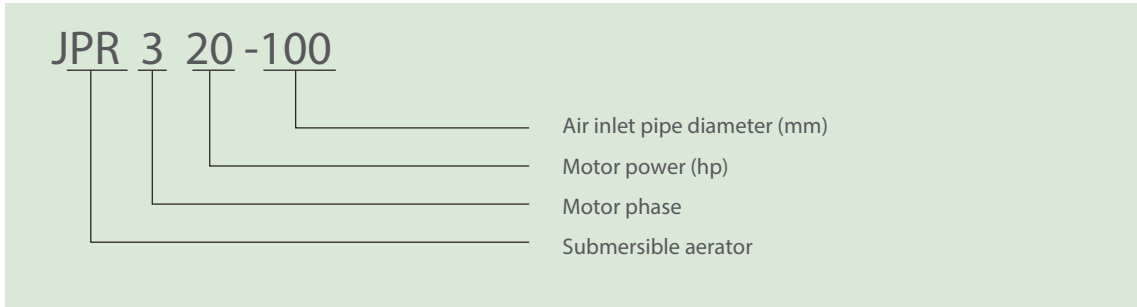
### Characteristics (refer to fig.A)

Submersible aerator-JPR utilizes the rotation of the impeller coupled directly to the motor to create a centrifugal force, which makes local low pressure suck in water. Meanwhile the entrance of the Impeller results in vacuum to draw air from atmosphere. Water and air mix in the channel of aeration housing. The air-water-mixture current is discharged speedily by the centrifugal force.

Due to the water spurting extremely strong, make the fluid create convection and circulation effectively. Moreover the air becomes tiny bubbles. On the one hand the bubbles rise slowly, on the other hand the atmosphere oxygen is dissolved in water. Because the bubbles are tiny and numberless, their surface area is large, it makes the oxygen transfer rate per unit BHP higher than other types of aerator.

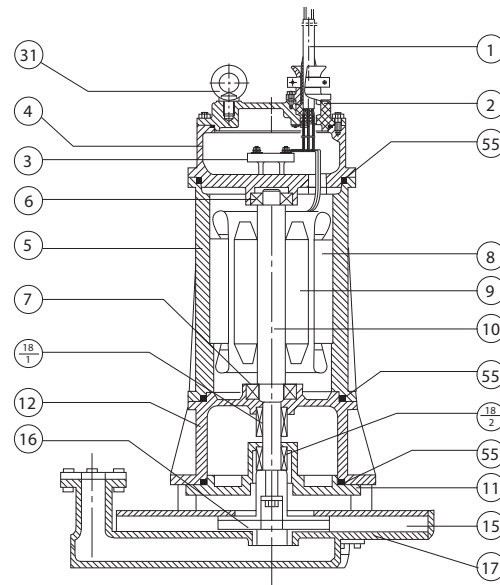


## Type description



## Construction

1	Cable	2RNCT	2RNCT
2	Cable hood	NBR	NBR
3	Patch panel	Electrotechnical bakelite	Electrotechnical bakelite
4	Motor cover	HT200	FC200
5	Motor casing	HT200	FC200
6	Ball bearing	-	-
7	Ball bearing	-	-
8	Stator	-	-
9	Rotor	-	-
10	Shaft	2Cr13	SUS 420J1
11	Oil cover	HT200	FC200
12	Bracket	HT200	FC200
15	Aeration housing	HT200	FC200
16	Impeller	ZG0Cr18Ni9	SCS13
17	Bottom cover of aeration housing	HT200	FC200
18-1	Mechanical seal	C-Al <sub>2</sub> O <sub>3</sub>	C-Al <sub>2</sub> O <sub>3</sub>
18-2	Mechanical seal	SiC-SiC	SiC-SiC
31	Lifting ring	0Cr18Ni9	SUS 304
55	O-ring	NBR	NBR

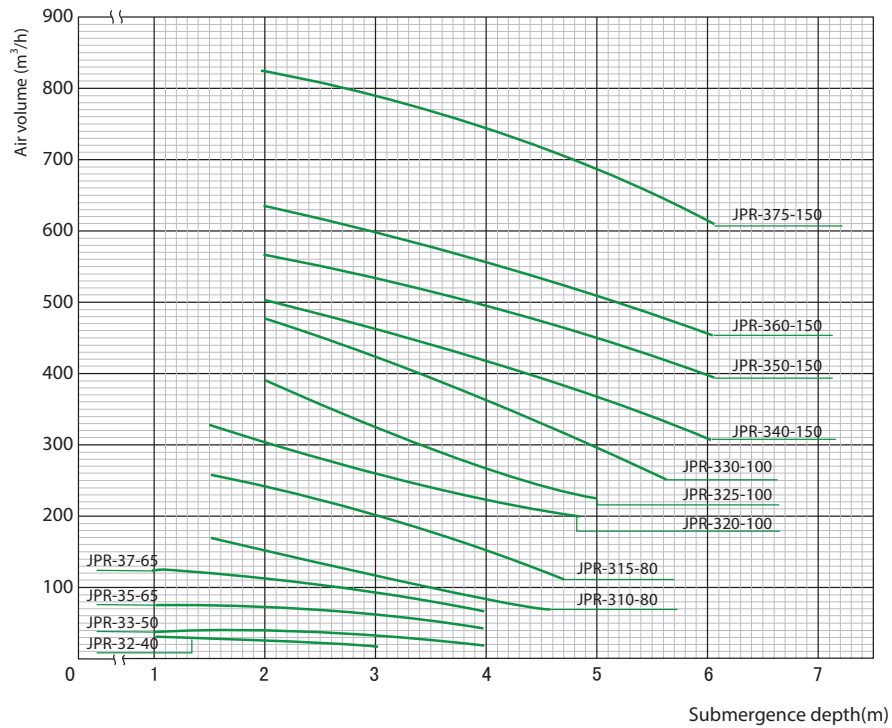


## Features

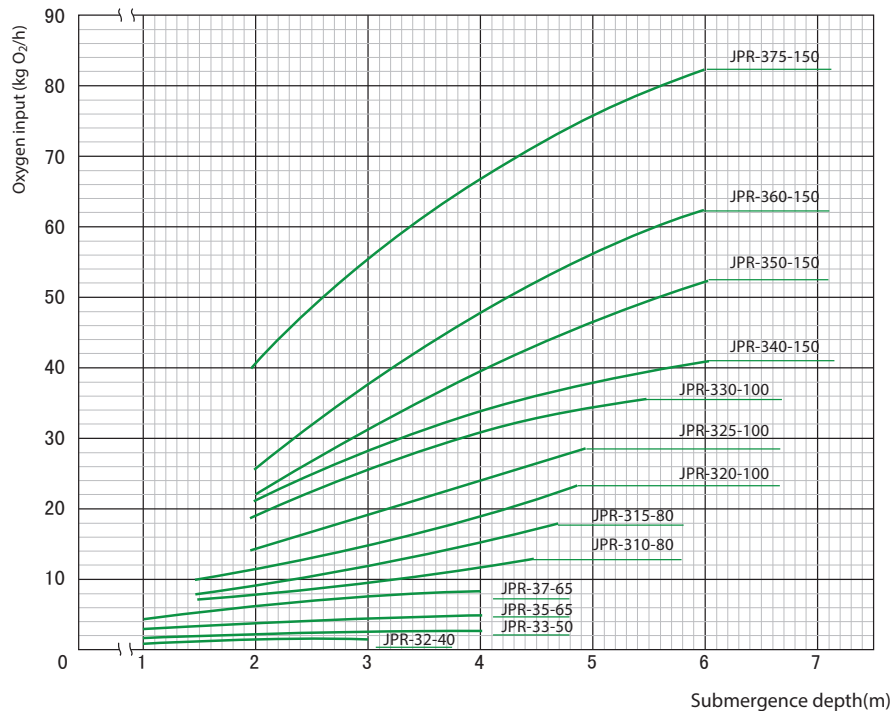
- Submersible motor directly drive, low noise, high efficiency.
- It has unique design for gas mixing chamber whose air intake quantity is big. Air can be mixed well with water. It also has mixing function while aerating.
- Adopt double mechanical seal, can extend useful life of motor.
- Twelve~twenty radiated outlets, can bring a mass of bubbles.
- Netty inlet, can avoid impeller being blocked by foreign material.
- Use guide rail to allow pump for easy installation, maintenance & repairation.

## Performance curves

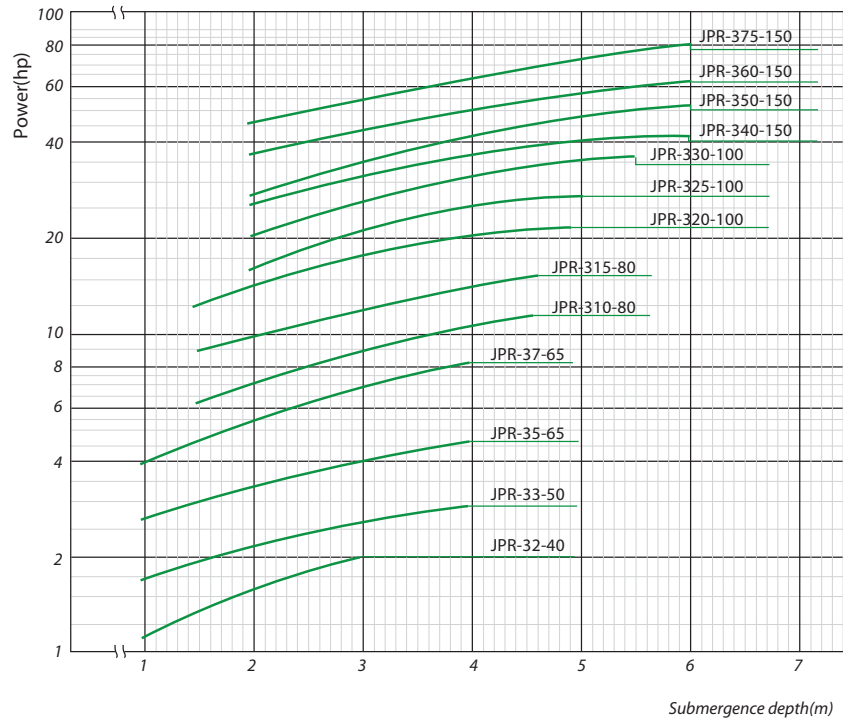
Air specific curve



Oxygen transfer specific curve



Power specific curve

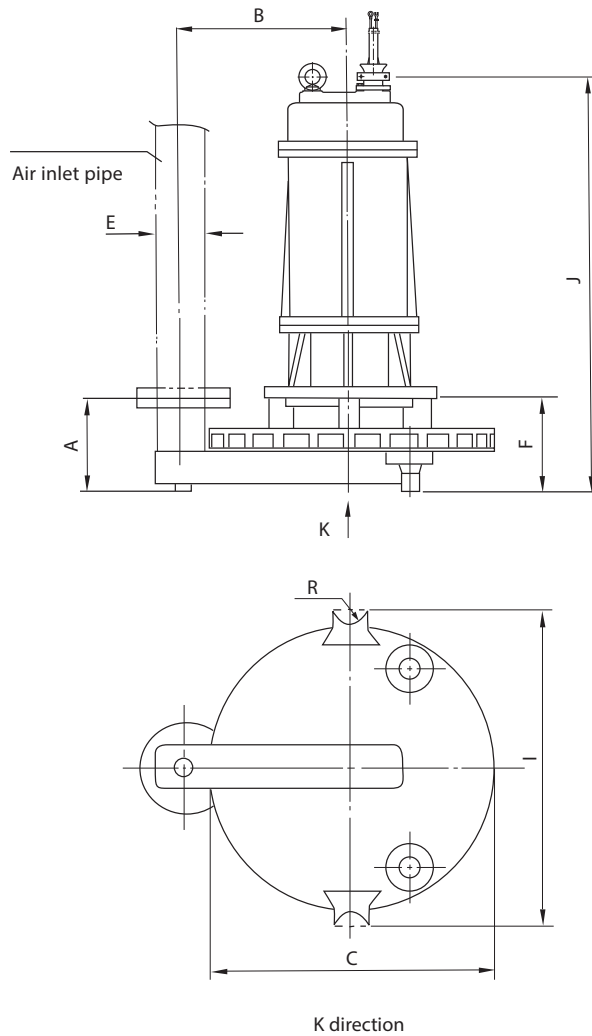


Performance parameters

Type	Power		Operation range (m)	Min-max water depth (m)	Air inlet pipe diameter (mm)	The maximum intake of air (m³/h)	Oxygen transfer capacity (kgO₂/h)	Weight (kg)
	hp	kW						
JPR-32-40	2	1.5	1.0-2.0	1-3.0	40	30	2-1	104
JPR-33-50	3	2.2	2.5-5.0	1-4.0	50	40	3-2	117
JPR-35-65	5	3.7	3.0-6.0	1-4.0	65	80	5-3	132
JPR-37-65	7.5	5.5	3.5-7.0	1-4.0	65	128	9-5	279
JPR-310-80	10	7.5	4.5-9.0	1.5-4.5	80	170	13-7	286
JPR-315-80	15	11	5.0-10.0	1.5-4.6	80	265	18-8	340
JPR-320-100	20	15	5.8-11.5	1.5-4.8	100	330	23-10	355
JPR-325-100	25	18.5	5.9-11.8	2.0-5.0	100	385	29-14	405
JPR-330-100	30	22	6.0-12.0	2.0-5.5	100	470	36-19	420
JPR-340-150	40	30	7.3-14.5	2.0-6.0	150	510	41-21	1000
JPR-350-150	50	37	7.5-15.0	2.0-6.0	150	570	52-22	1080
JPR-360-150	60	45	7.8-15.5	2.0-6.0	150	630	62-25	1150
JPR-375-150	75	55	8.0-16.0	2.0-6.0	150	825	82-40	1200



## Installation dimensions



Type	Dimensions(mm)							
	A	B	C	E	F	I	J	R
JPR-32-40	155	300	505	40	152	565	597	30
JPR-33-50	155	300	505	50	154	565	677	30
JPR-35-65	155	300	505	65	156	565	694	30
JPR-37-65	203	410	685	65	218	745	871	30
JPR-310-80	203	410	685	80	221	745	874	30
JPR-315-80	203	410	685	80	223	745	931	30
JPR-320-100	203	410	685	100	225	745	973	30
JPR-325-100	203	410	685	100	228	745	1097	30
JPR-330-100	203	410	685	100	228	745	1097	30
JPR-340-150	338	600	950	150	384	1028	1474	39
JPR-350-150	338	600	950	150	384	1028	1474	39
JPR-360-150	338	600	950	150	384	1028	1474	39
JPR-375-150	338	600	950	150	384	1028	1474	39

## Basin dimensions

Type	Max water depth	Shape and dimensions		
		Round(Diameter)	Square	Rectangular
JPR-32-40	3	3.5	3.1x3.1	2.5x3.8
JPR-33-50	4	4.8	4.2x4.2	3.4x5.2
JPR-35-65	4	6.6	5.8x5.8	4.8x7.1
JPR-37-65	4	8.0	7.1x7.1	5.8x8.7
JPR-310-80	4.5	9.8	8.7x8.7	7.1x10.6
JPR-315-80	4.6	12.5	11.1x 11.1	9.1x13.6
JPR-320-100	4.8	12.5	11.5x 11.5	9.1x13.6
JPR-325-100	5	12.5	11.8x 11.8	9.7x 14.5
JPR-330-100	5.5	12.5	12.0x 12.0	9.7x 14.5
JPR-340-150	6	16	14.5x 14.5	12.5x 17.0
JPR-350-150	6	16	15x 15	13.0x 17.5
JPR-360-150	6	16	15.5x 15.5	13.0x 17.5
JPR-375-150	6	16	16x 16	13.5x 18.0

## Installation

For better and easier maintenance of the aerator, following instructions shall be noticed:

- The setter should be fixed on concrete base of the aeration basin (Before the aeration basin was filled with waste water).
- When designing the strength of the bridge (As shown in below Fig.) construction, the warping and the lifting equipment should be considered.
- The guide tubes should be prepared in advance and it is advisable to use stainless steel tubes.
- The air pipes should be fixed if necessary depending upon the actual condition.

