TSURUMI PUMP

Submersible Ejector

BER

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BER / TOS-BER SUBMERSIBLE EJECTOR

FEATURES

The powerful single direction jet current is unrivaled in vertical stirring convection. Required shaft power not affected by change in depth.

APPLICATIONS

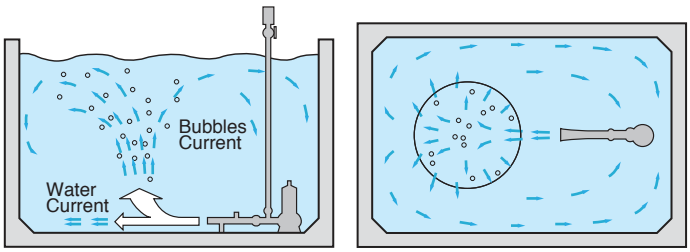
- Pre-aeration and mixing at wastewater treatment plant
- Supplying oxygen to water in aquafarm

MAJOR STANDARD SPECIFICATIONS

Treating Fluid	Type of Fluid		Wastewater and Sewage
	Fluid Temperature		32 to 104˚F
Pump	Structure	Impeller	Channel
		Shaft Seal	Double Mechanical Seal (with Oil Lifter)
		Bearing	Double-shielded Ball Bearing
	Materials	Diffuser *	Structure Steel + Nylon Coated
		Impeller	Gray Cast Iron
		Suction Cover	Gray Cast Iron
		Casing	Gray Cast Iron
		Shaft Seal	Silicon Carbide
Motor	Type, Pole		Dry Type Submersible Induction Motor
			2, 4-pole (3HP and above)
	Insulation		Class E, F (2HP and 7.5HP only)
	Phase		Single Phase and Three Phase
	Protection Device (built-in)		Circle Thermal Protector
	Lubricant		Turbine Oil (ISO VG32)
	Materials	Frame	Gray Cast Iron
		Shaft	Stainless Steel 403, 420 (2HP & above)
		Cable	PVC Chloroprene Rubber (7.5HP only)
Air-inlet Connection			Screwed Flange

*Available in stainless steel 304 upon request

CONVECTION PATTERN



STANDARD SPECIFICATIONS

Air-inlet Bore (inches)	Model		Motor Output HP	Phase	Speed (s.s.) RPM	Starting Method	Air Flow Rate -Water Depth (cfm.) ★1	Mixing Capacity GPM	Max. Tank Dimension			Max. Water Depth ft	Dry Weight, lbs. ★2		Cable Length ft
	Free Standing	Guide Rail Fitting							Length ft	Width ft	Depth ft		Free Standing	Guide Rail Fitting	
1	8-BERS2	TOS-8BERS2	1	Single	3600	Capacitor Start	5.3	92.5	10	7	11.5	11.5	77	66	32
1	8-BER4	TOS-8BER4	1	Three	3600	D.O.L.	5.3	92.5	10	7	11.5	11.5	62	51	32
1 1/4	15-BER3	TOS-15BER3	2	Three	3600	D.O.L.	14.1	176.1	13	11	13.1	13.1	95	75	32
2	22-BER5	TOS-22BER5	3	Three	1800	D.O.L.	22.4	264.2	16	16	14.8	14.8	165	134	32
2	37-BER5	TOS-37BER5	5	Three	1800	D.O.L.	41.2	396.3	20	20	16.4	16.4	201	170	32
2	55-BER7	TOS-55BER7	7.5	Three	1800	D.O.L.	61.8	528.3	23	23	19.7	19.7	328	291	32

★1 The air flow rates are expressed at the standard condition. (10' Submerged depth, 1atm @ 68°F)

★2 All weights excluding cable
Weights of guide rail fitting model excluding duckfoot bend

STANDARD ACCESSORIES

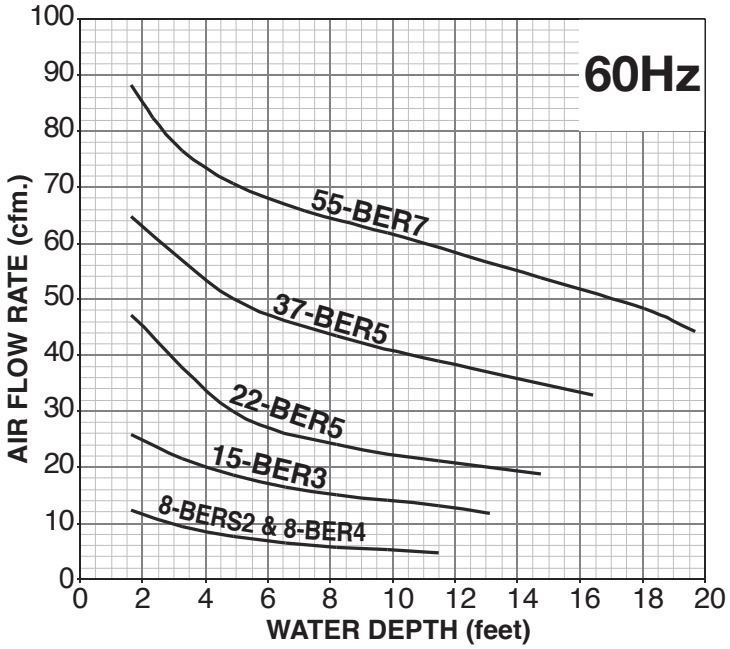
Free Standing

Silencer & Valve Set ---- 1 set
Lifting Chain (16ft / with Shackles) ---- 1 set
Suction Casing (with Nozzle Ring, Packing & Bolts) ---- 1 set
Screwed Flange (with Packing & Bolts) ---- 1 set
Diffuser (with Packing & Bolts) ---- 1 set
Diffuser Base (with Nuts) ---- 1 set

Guide Rail Fitting

Silencer & Valve Set ---- 1 set
Lifting Chain (16ft / with Shackles) ---- 1 set
Guide Support (with Bolts & Nuts) ---- 1 set
Air-inlet Pipe Support (with U-bolt & Nuts) ---- 1 set
Guide Hook (with Bolts) ---- 1 set
Nozzle (with Nozzle Ring, Packing & Bolts) ---- 1 set
Suction Casing ---- 1 set
Guide Connector (with Bolts) ---- 1 set
Screwed Flange (with Packing & Bolts) ---- 1 set
Diffuser (with Packing & Bolts) ---- 1 set
Foundation Bolts (with Nuts) ---- 1 set

AIR FLOW RATE - WATER DEPTH CURVES

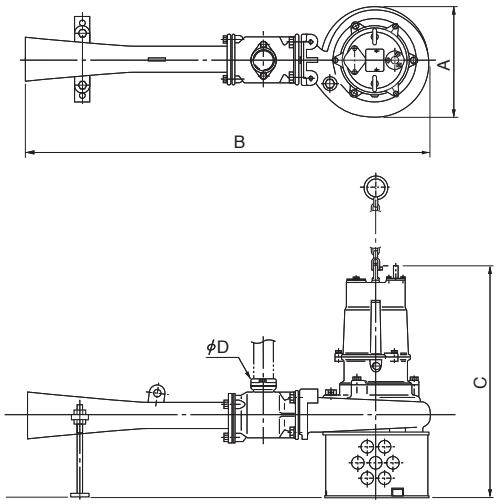


Note:

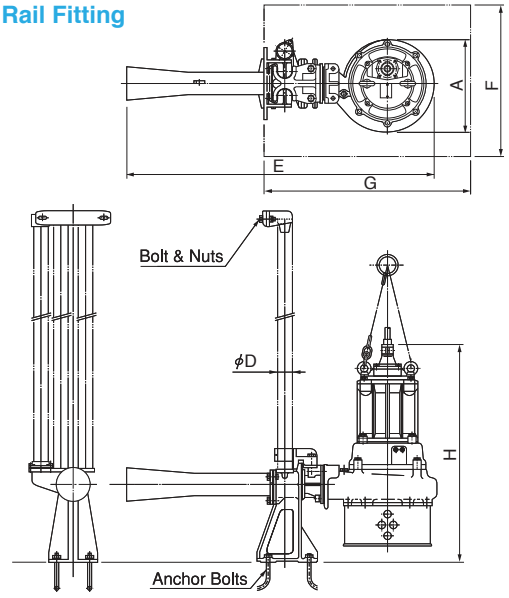
The air flow rates are expressed at the standard condition, i.e. temperature of 68˚F (20˚C), 1 atm. (Result may vary by up to approximately 5%.)

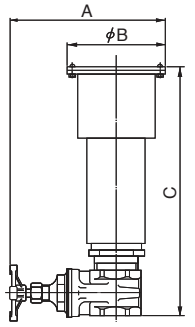
DIMENSIONS

Free Standing



Guide Rail Fitting





Silencer & Valve Set

(Units: inches)

Pipe Bore	A	B	C
ϕ1	5 13/16	3 9/16	8 1/4
ϕ1 1/4	7 1/16	4 9/16	10 13/16
ϕ2	9 1/16	6 1/16	14 9/16

Material of silencer : PVC

(Units: inches)

Free Standing	8-BERS2	8-BER4	15-BER3	22-BER5	37-BER5	55-BER7
Guide Rail Fitting	TOS-8BERS2	TOS-8BER4	TOS-15BER3	TOS-22BER5	TOS-37BER5	TOS-55BER7
A	7 5/8	7 5/8	8 3/4	12 7/16	12 13/16	15 3/8
B	26 9/16	26 9/16	35 1/4	45 9/16	45 13/16	55 11/16
C	22 1/2	18 1/4	22 1/8	26 3/4	29 5/8	37 1/16
D*	1	1	1 1/4	2	2	2
E	26 9/16	26 9/16	35 13/16	45 3/4	45 15/16	56
F	13 3/4	13 3/4	17 11/16	17 11/16	17 11/16	19 11/16
G	21 5/8	21 5/8	25 9/16	27 9/16	27 9/16	29 1/2
H	24 1/2	20 1/4	23 3/4	30 3/16	32 15/16	39 5/8

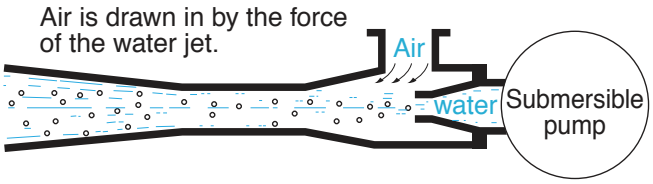
*Nominal size

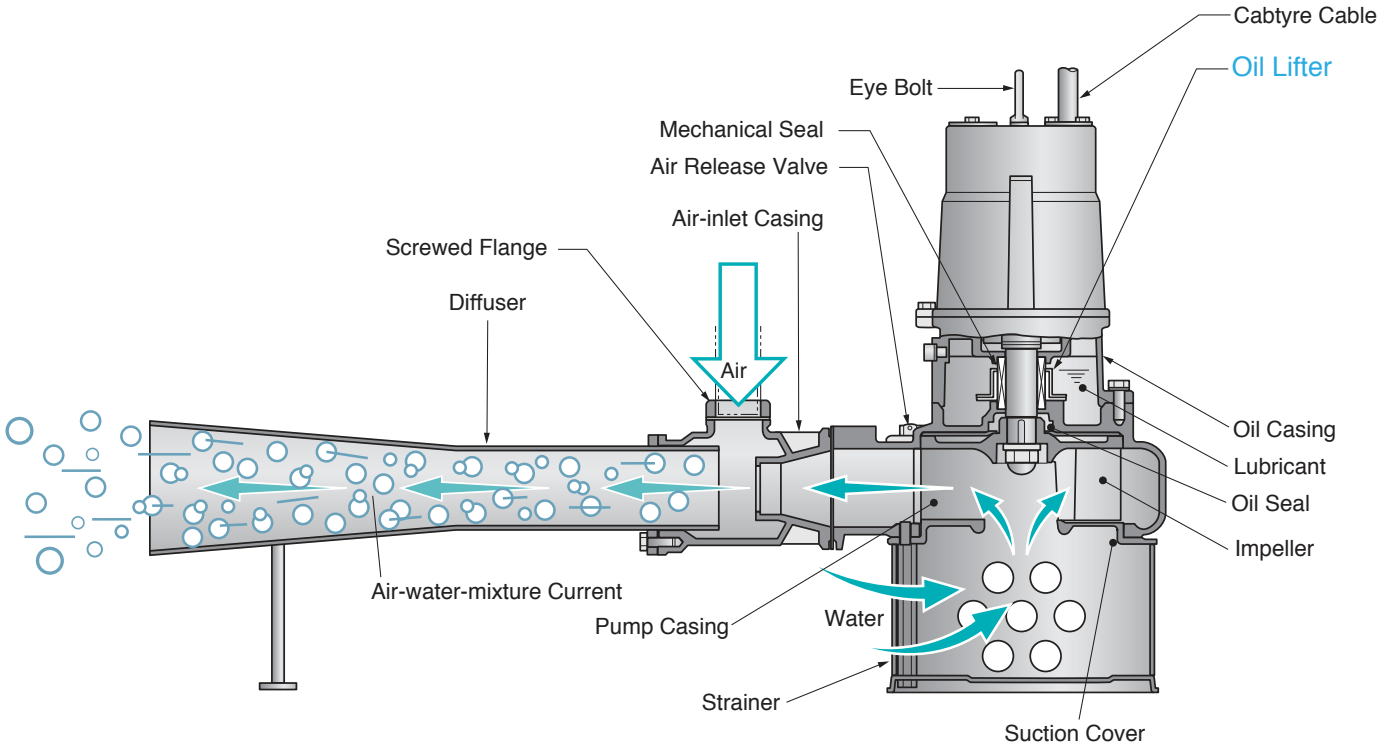
BER / TOS-BER SUBMERSIBLE EJECTOR

The principle of the ejector system

This system is a combination of a submersible pump and a jet pump. By the action of the ejection current of the submersible pump, a self-feeding force is generated, which draws air from the surface of the water through a air-inlet pipe. This air is mixed with the water and the mixture is ejected. The churning force caused by this ejection current is remarkably strong, with the result that exceptionally efficient oxygen dissolution is produced.

The mixture is pressurized to the point (exceeding the water pressure), where it can be ejected. As a result, minute air bubbles and water are ejected in a pressurized state, enabling a large amount of oxygen to be dissolved in the water.





TSURUMI PUMP
1625 Fullerton Court, Glendale Heights, IL 60139
Tel: 1-888-878-7864 • Fax: 1-630-793-0146
www.tsurumipump.com • info@tsurumiamerica.com

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