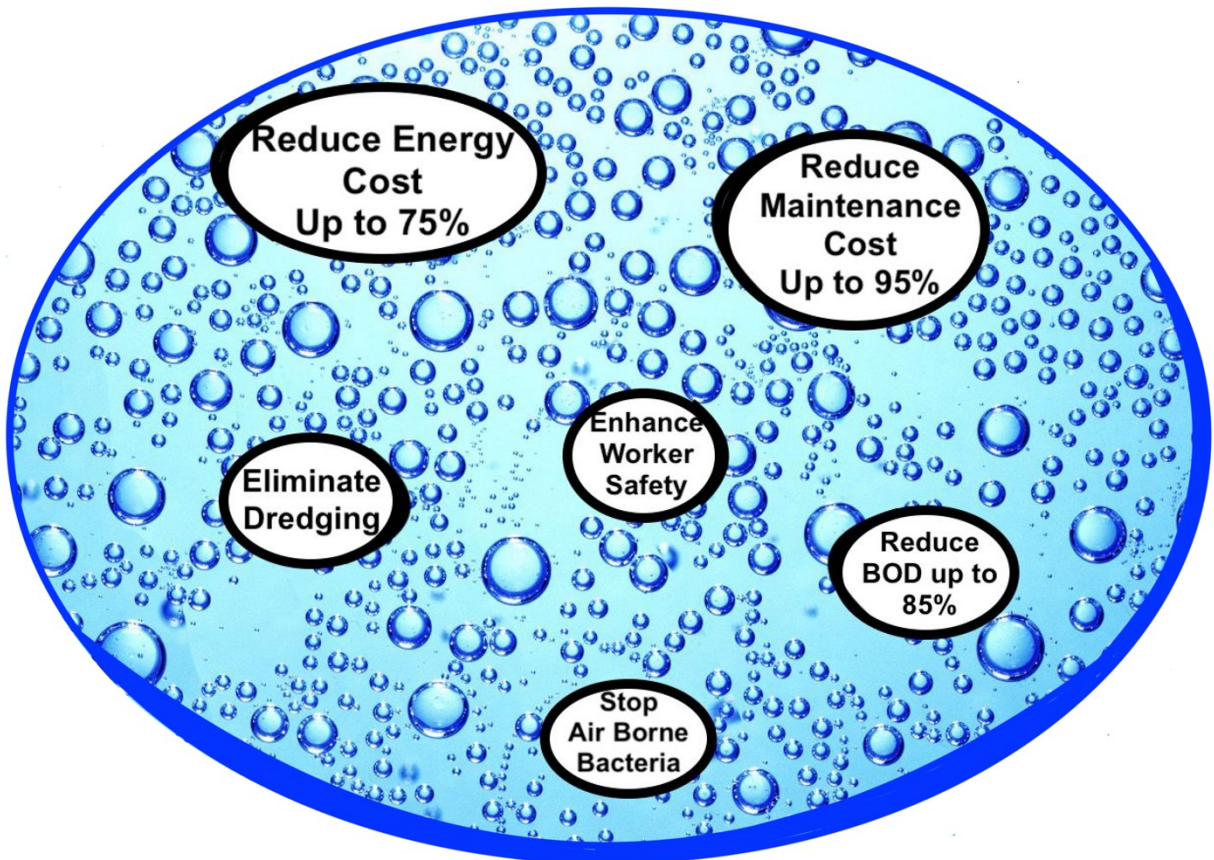


# What's in your Lagoon?

## Advanced Aeration Technology

Aeration & Mixing  
Simultaneously



Here's the Proof



*Mike Kennedy*  
MAYOR  
*Toni McKelvey*  
CITY CLERK

## City of Monroeville

Post Office Box 147  
123 E. Claiborne Street  
Monroeville, Alabama 36461  
(251) 575-2081  
FAX: (251) 743-3547  
email: mvillech@frontiernet.net

COUNCIL  
*Joseph Oglesby*  
*Thelma McDaniel*  
*Barbara Turner*  
*Anthony Thomas*  
*Tom Lomenick*  
*Rick Ramer*

To Whom It May Concern,

April 21, 2014

Follow up to the DO<sub>2</sub>E Aerators installed on January 10<sup>th</sup>, 2010, over 4 years ago at the Monroeville Wastewater Plant in Monroeville Alabama.

We are working on our 5th year since we installed the (2) - DO<sub>2</sub>E High Volume Floating Aerators and the (2) - DO<sub>2</sub>E Floating mixers. I wanted to let you know the results and what we think of the DO<sub>2</sub>E equipment provided to us.

***Maintenance Cost:***

Total maintenance cost over the past 4 years for all aerators and mixers will not exceed \$1,000. The only maintenance we have had to perform was to simply change out the air filters on the blowers. We love it, no bearings to grease or replace. No belts to break or tighten. No moving parts really make this a dream to operate.

Our Annual maintenance savings was \$6,500 per year.

Our Cumulative Maintenance Savings over the 4-year period is \$26,000.

***Dissolved Oxygen Levels:***

According to our records over the past 4 years and our certified plant operator, Mr. Ernest Rowell, the Dissolved Oxygen levels hold steady at 8.5 ppm and have ranged as high as 12 ppm.

***Sludge Digestion:***

The treated section of the lagoon where the units are installed has been free and clear of all sludge since the units were installed. At the beginning, the sludge levels were in excess of 6 ft. deep through out the lagoon. These units do an excellent job of digesting the sludge and preventing it from building up.

***Energy Savings:***

This is what really impressed us!

Before installation of the DO<sub>2</sub>E Aerators and Mixers, our power billed averaged \$12,500 per month.

We are now averaging \$1,800 per month.

Our monthly energy savings is \$10,700.

Our Annual Energy Savings is \$128,400.

Our Cumulative Energy Savings over the 4-year period is \$513,600.

*Darlene Johnson, Wastewater Superintendent*  
City of Monroeville, Monroeville, AL.  
Tel: (251) 743-3500  
Cell: (251) 238-1029  
Fax: (251) 575-2119

**Featured in the: TPO Magazine & Other Online**

# Publications Worldwide

case studies

TREATMENT AND FILTRATION

By Craig Mandli

## Aerators and mixers enable cost savings, reduce biosolids buildup

### Problem

The town of Monroeville, Ala., faced aeration and mixing issues, sludge buildup in one of its wastewater lagoons, and power bills of \$12,500 per month after a major employer relocated its garment manufacturing facility. The company had generated about 90 percent of the wastewater entering the lagoon, and its fees covered 90 percent of the operation and maintenance cost, which included \$1,500 per month for aerator maintenance. The lagoon was 80 percent full of biosolids, and the estimated cost to dredge was over \$1.6 million. The lagoon had to remain operational and the town needed to reduce costs.



### Solution

**DO2E Waste Water Treatment** installed two 5 hp high-volume floating aerators and two 3 hp floating mixers.

### RESULT

In four years of operation, the equipment saved the town some \$513,000 in electricity and \$72,000 in maintenance, while reducing biosolids buildup by 90 percent. 251/626-6550; [www.do2e.com](http://www.do2e.com).

# Certified & Tested

## Auburn University

Auburn University, Alabama 36849-5419

College of Agriculture

Department of Fisheries  
and Allied Aquacultures  
203 Swingle Hall

International Center  
for Aquaculture and  
Aquatic Environments  
201 Swingle Hall

Telephone: (334) 844-4786  
FAX: (334) 844-9208  
United States of America

March 24, 2004

Dear Mr. McGuffin:

We have finished the oxygen transfer and discharge measurements on your air-lift system. We are providing the initial computations, but still must estimate oxygen-transfer on a delivered air power basis. We will provide that information in a formal report next week.

Using 2 hp as the power, and this is likely an overestimate, the SAE is about 1.6 lbs O<sub>2</sub>/hp-hr. The discharge is about 5,588 gpm based on flow-meter estimate. We will provide a second estimate of discharge based on the weir estimate in the final report.

Once you see the final report, I will be happy to answer any questions.

Sincerely,

*Claude E. Boyd*  
Claude E. Boyd  
Professor



The DO<sub>2</sub>E System was tested and certified by Dr. Claude E. Boyd on March 24, 2004 at the Auburn State University testing facility.

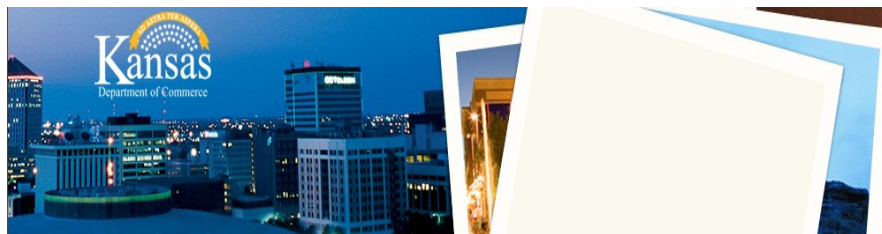
A LAND - GRANT UNIVERSITY

## **Case Study: B.O.D. Removal 93.75%**

**March 3<sup>rd</sup>, 2016**

**B.O.D. Removal in the Waste Water Lagoon**

D02E	High	Volume	Double	Flow	Aerators	Reduce	B.O.D.
levels	from	8,000	#	/	day	down	<
500	#'s	/	day.		(93.75%REDUCTION	in	
BOD)							



### **New dairy and cheese plant to break ground in Hugoton, Kansas.**

**Kansas Dairy Ingredients (KDI) announced its plans to build a dairy ingredient and cheese plant in Hugoton, Kansas. The company will start construction on the facility next month and begin phase I operation at the middle of the fourth quarter in 2012. The facility will be positioned to expand in 2013 to add cheese production. Kansas Dairy Ingredients will invest \$20 million plus over the next 18 months in Hugoton.**

**When the facility first opens, Kansas Dairy Ingredients plans to begin processing approximately 1 million pounds of milk per day to produce fractionated dairy ingredients. As production builds, the company anticipates eventually processing up to 2.5 million pounds of milk per day by the end of 2013. The company plans to build additional capacity to produce cheese and other dry milk ingredients.**

### **PROBLEM:**

**In January 2013, KDI (Kansas Dairy Ingredients) was faced with fines exceeding \$65,000 per month from the City of Hugoton for excess; B.O.D., F.O.G., low pH and High TSS levels. As a means of treating and addressing these and possibly future issues, the city constructed a new 2-acre, poly-lined lagoon, 12 feet deep at their facility specifically for the treatment of this waste stream.**

# **The Principle Design & Operation Of the DO<sub>2</sub>E Aerator / Mixer**

**Dr. JH Wakefield  
Analytic Chemist, Physicist,  
Micro Biologist & Engineer**

DO<sub>2</sub>E Aerator / Mixers are high-efficiency devices that are unique in several ways. DO<sub>2</sub>E's patented products are designed to pull water from significant depths for aeration and mixing. By operating with low-pressure (<1.85 P.S.I.) high volume airflow, these devices maximize energy efficiency. Our patented products are scalable and multi voltage.

DO<sub>2</sub>E utilizes the latest "*Green Technology*" and continues to set the standards in the Aeration industry. DO<sub>2</sub>E's products are designed to be as maintenance-free as possible. In most installations, DO<sub>2</sub>E's clients have realized maintenance cost reductions ranging from 85% to 95%. Our product line is the most energy efficient and cost effective product introduced to waste water market over the past 30 years.

From a safety standpoint, DO<sub>2</sub>E reduces employees' exposure to risks by utilizing two key components; land based blowers and no moving parts. Air supply is provided from a regenerative air blower placed at a remote location on land for easy access. With no electricity in or around the water and no moving parts, DO<sub>2</sub>E greatly reduces the worker's exposure to risks associated with standard aeration equipment used today. DO<sub>2</sub>E has designed and patented the safest and environmentally friendly aerator / mixer on the market.

A unique feature of the DO<sub>2</sub>E Aerator system is its' expandable capability for the delivery of various gaseous materials such as ozone, hybrid ozone with hydroxyl radicals, carbon dioxide, carbon monoxide or other gases required to remediate various issues. This delivery method allows us to inject directly into the wastewater stream allowing for a effective and cost efficient means in order to address various issues such as hydrogen sulfide before it is released into the atmosphere.

All DO<sub>2</sub>E units are designed to handle several different tasks. The primary tasks and functions of the aerators/mixers are to aerate and mix the

water column and distribute it from the device. Other tasks may be completed simultaneously including drawing from deep sludge deposit breaking up sludge deposit solids into smaller particulates, de-stratifying the water column, and aerating and/or depositing solids into designated locales. "Ozone" can be added to the units to address both recalcitrant particulates and noxious microorganisms, including a wide variety of pathogens. "Ozone" also causes the destruction of sulfides for enhanced odor-control.

Aerators can be designed to address a variety of environmental issues. This is accomplished by increasing the horsepower of the blowers used, increasing the aeration rate by the manipulation of the bubble mixture, changing the physical size of the aeration module, utilizing the type and viscosity of the material encountered in both the water and air column.

Use of the term "draw" has two different meanings. One of these is used to designate where, in the device, the incoming fluid stream enters the device (the airstream enters at this point also, which gives rise to the Venturi effect); and, the other refers to the depth from which bottom deposits are pulled up into the device.

All the DO<sub>2</sub>E Aerators draw water into the device by means of the Venturi effect. Water is then expelled through the upper chambers. Our patented aeration tubes are designed to deliver a unique combination of coarse, medium, and fine bubbles which when released at a specific depth, draws the water in through the bottom of the unit. Water is pulled upward being aerated all the while and redirected into a horizontal flow that is perpendicular to the input of the water column.

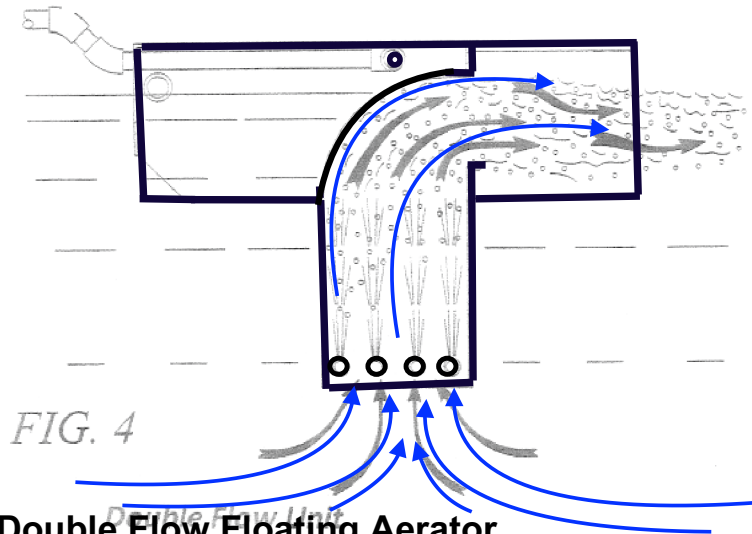
A resonance circulation of the water column allows the devices to increase the unit's "pull" from the water column. Depending on the amount of force generated from the initial airstream (which is a multivariate function of power horsepower of the blower), the temperature of the water column, and the viscosity of the water column. The "reach" of the aerator can be as deep as 18' from the surface of the water. Depending on varying conditions, it may take different times for *equilibrium* to be reached so that a consistent draw from depth results. By injecting cool ambient air in combination with the air pressure and water pressure released within a confined space, ensures that the DO<sub>2</sub>E aerator achieves maximum oxygen transfer.

*This document is designed to give a broad overview of the principles and designs of the patented DO<sub>2</sub>E Aerator / Mixers. All other information is proprietary and not for release.*

# Here Is How It Works

## DO2E Patent Single Flow Floating Aerator Side View

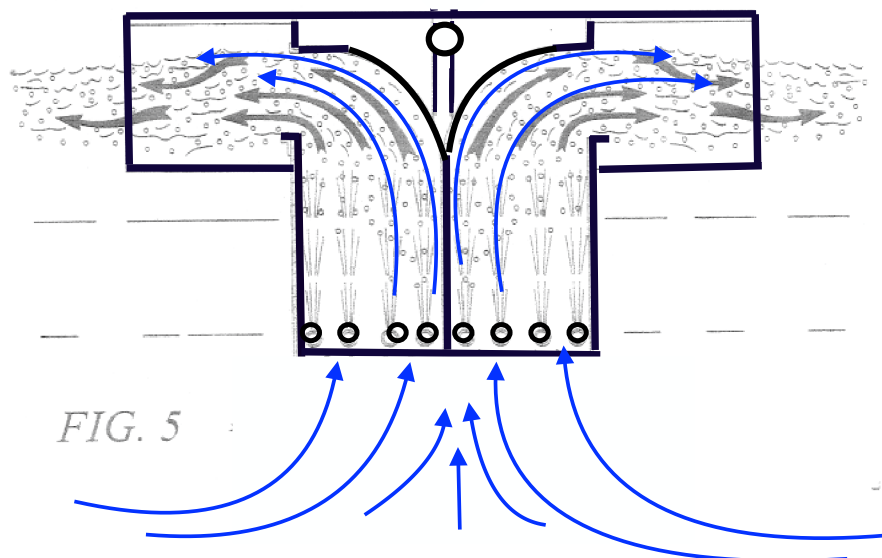
Randy McGuffin/DO2E WWT 123030



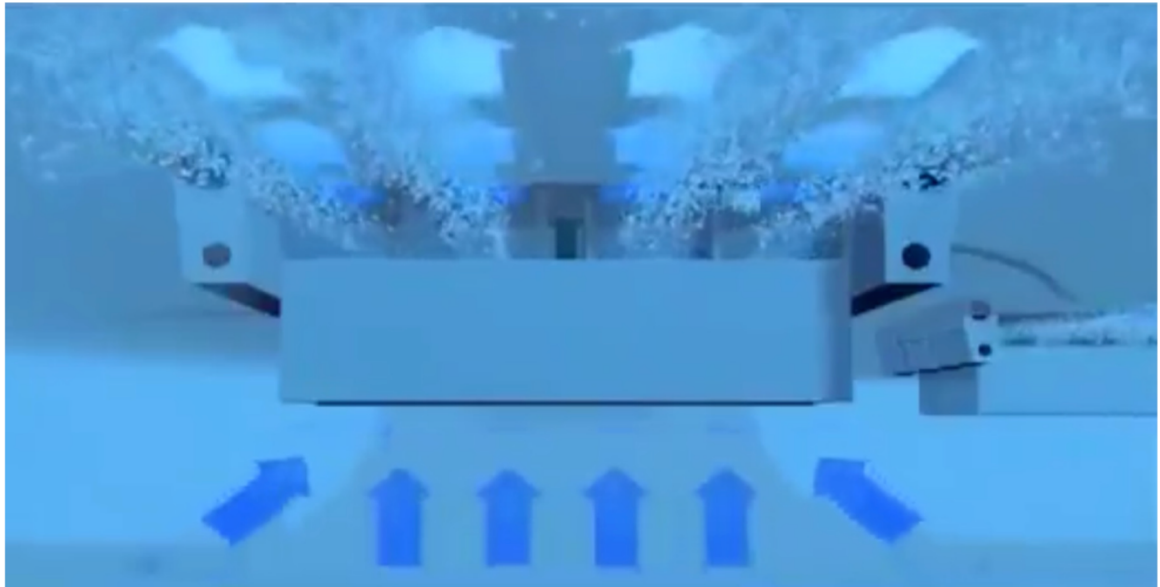
## Double Flow Floating Aerator

Patented

Randy McGuffin/DO2E WWT 123030



**“The Perfect Mixer”  
Modern Mixer Technology by:  
DO2E Waste Water Treatment**



**The DO2E Aerator / Mixer Draws from over 20 ft. in Depth with the ability to increase up to 100 ft. in depth.**

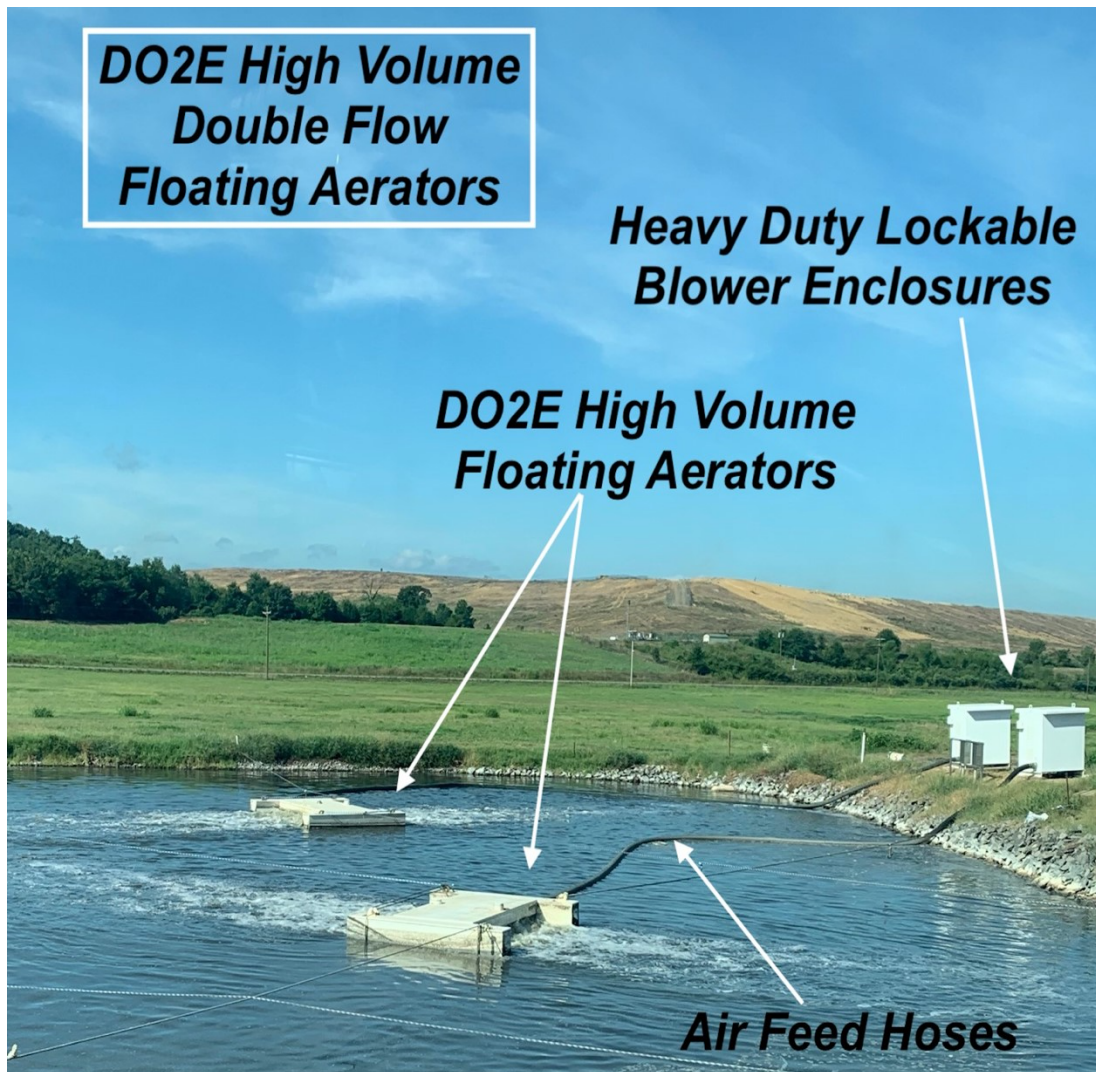
**PROVEN TO:**

**Draw sludge from the bottom to create “On- Site Sludge Digestion”.**

**Reduces sludge build up by up to 85%**

**Eliminates the need for expensive Lagoon Dredging**

**Expands lagoon Capacity**



## **Applications:**

- |                |                       |
|----------------|-----------------------|
| 1) Municipal   | 9) Bayous             |
| 2) Industrial  | 10) Beaches           |
| 3) Commercial  | 11) Lakes             |
| 4) Aquaculture | 12) Rivers            |
| 5) Marinas     | 13) Public Swim Areas |
| 6) Creeks      | 14) Zoos              |
| 7) Bays        | 15) Aquariums         |
| 8) Land Fills  | 16) Paper Mills       |

## **Features:**

- 1) NO Moving Parts**
- 2) Air Driven (< 1.95 psi)**
- 3) SOTR > 3.15**
- 4) Flow Rate: Up To 24.6 mgd**
- 5) Minimum Water Depth 36 inches**
- 6) Draw Depth. >20 ft.**
- 7) No Man Entry Required in Lagoon**
- 8) No Electricity in or around the water**
- 9) High Volume Air Flow (> 700 scfm)**
- 10) Construction: Marine Grade PVC**
- 11) Life Expectancy: 75+ years**
- 12) Combines Course & Fine Bubble Technology**

## **Benefits:**

- 1) Enhanced Worker Safety**
- 2) No Man Entry into Lagoon**
- 3) No Electricity in or around the water**
- 4) Low Operational Cost**
- 5) No Moving Parts**
- 6) No Belts to Align 7) No Pulleys to Adjust**
- 7) No Bearings to Grease**
- 8) Land Based Maintenance Only**
- 9) Portable**
- 10) Long Life Expectancy (>75 Years)**
- 11) High Water Flow (>24 mgd)**
- 12) High Volume Mixing (>24 mgd)**
- 13) High Oxygen Transfer (>3.25 SOTR)**
- 14) Environmentally Friendly**
- 16) Adjustable Flow Direct from shore**
- 17) Fast & Quick Installation**
- 18) Made in the USA**

## Aerator Installation: Port Author Texas



## All DO2E Patent Technology Comes Prewired and Ready for Installation



**Multi-Voltages:**

**Hertz Cycle: 50 & 60 hz**

**Power Phase.**

**Single Phase (1 -3 Hp)**

**Three Phase (1 – 50 Hp)**





TECHNICAL

## Three Phase Electric Motor

SS2002

### THREE PHASE MOTOR

#### GENERAL SPECIFICATIONS:

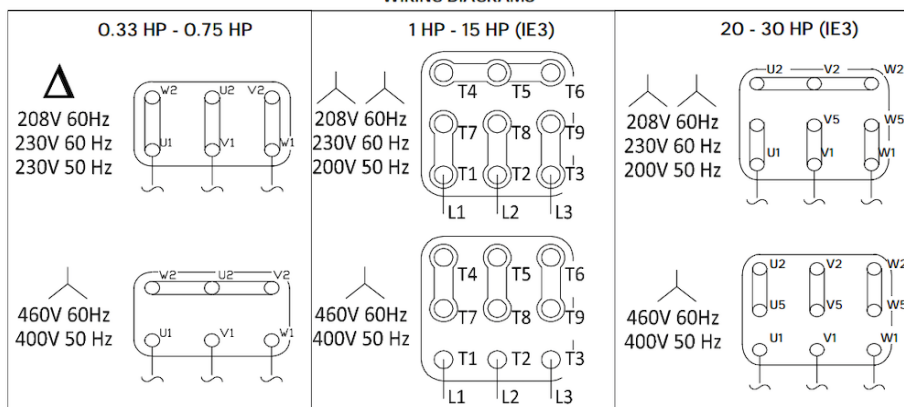
1. Type: 3-phase AC Motor IEC 60034
2. Marks: cURus, CE
3. Nema Premium Efficiency (IE3) - 1 HP AND LARGER (3 ph)
4. Poles: 2
5. Insulation class: F; F (B) for Premium efficient
6. Enclosure: TEFC
7. Protection IP55, Tropicalized
8. Thermal protector: Klixon 1400 C/150 °C
9. Service factor: 1.15 (60 hz)
10. Max. Ambient 40 °C
11. Duty: Continuous
12. Construction: aluminum frame

POWER		SIZE	60 HZ			50 HZ			60 hz Starting Current Ratio*	CABLE ENTRY 1 (cable gland incl.)	CABLE ENTRY 2
HP	KW		VOLTAGE	FLA 208-230 / 460 V	Efficiency	VOLTAGE	FLA 200/400 V	Efficiency			
0.33	0.25	63	208-230/460	1.5 / 0.7	59%	230/400	1.4 / 0.8	60.0%	3.9	M16	M20
0.5	0.37	63	208-230/460	2.3 / 1.0	59.2%	230/400	2.1 / 1.2	61.4%	3.6	M16	M20
0.75	0.55	71	208-230/460	2.7 / 1.2	68.8%	230/400	2.6 / 1.5	69.0%	3.8	M16	M20
0.75	0.55	71	208-230/460	2.3-2.2 / 1.3	74.5%	230/400	2.6 / 1.5	74.5%	6.8	M20	-
1	0.75	80	208-230/460	2.99-2.94 / 1.47	77.0%	200/400	3.28 / 1.64	80.7%	8.0	M25	M25
1.5	1.1	80	208-230/460	4.35-4.34 / 2.17	84.0%	200/400	4.92 / 2.46	82.8%	9.3	M25	M25
2	1.5	80**	208-230/460	5.91-5.96 / 2.98	85.5%	200/400	6.82 / 3.41	84.2%	8.7	M25	M25
		90	208-230/460	5.77-5.74 / 2.87	85.5%	200/400	6.58 / 3.29	84.2%	9.4	M25	M25
3	2.2	90	208-230/460	8.27-8.31 / 4.15	86.5%	200/400	9.6 / 4.8	85.9%	10.7	M25	M25
4	3	100	208-230/460	10.9-11.1 / 5.53	88.5%	200/400	12.86 / 6.38	87.1%	11.0	M25	M25
5.5	4	100	208-230/460	14.6-15.1 / 7.55	88.5%	200/400	17.7 / 8.86	88.1%	11.1	M25	M25
6.2	4.6	100	208-230/460	16.5-16.4 / 8.2	89.5%	200/400	19 / 9.5	88.6%	12.5	M25	M25
7.5	5.5	132	208-230/460	19.8-19.5 / 9.75	89.5%	200/400	22.2 / 11.1	89.2%	13.7	M25	M25
10	7.5	132	208-230/460	26.1-25 / 12.5	90.2%	200/400	28.6 / 14.3	90.1%	13.0	M25	M25
15	11	132	208-230/460	38.2-37.3 / 18.7	91.0%	200/400	43.4 / 21.7	91.0%	12.5	M25	M25
20	15	132	208-230/460	47.0 / 23.5	91.7%	200/400	52.4 / 26.2	91.9%	9.7	M32	M32
20***	15	160	208-230/460	48.8 / 24.4	91.0%	200/400	54.4 / 27.2	91.9%	10.7	M32	M32
25	18.5	160	208-230/460	62 / 31	91.7%	200/400	69 / 34.5	92.4%	12.5	M40	M40
30	22	160	208-230/460	71.6/35.8	91.7%	200/400	77.8 / 38.9	92.7%	10.6	M40	M40

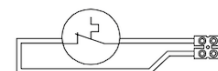
\* FLA x starting current ratio = starting current \*\* 2 hp size 80 motors used on SCL R30-MD ONLY. \*\*\* TS / TD models ONLY.

Shaded models to be discontinued

#### WIRING DIAGRAMS



Thermal protection



$V_N = 250V$ ,  $\cos \phi 0,6$ ,  $I_N = 1,6 A$   
 $V_N = 250V$ ,  $\cos \phi 1$ ,  $I_N = 2,5 A$

Specifications subject to change without notice. Alternate motor suppliers may be used.

# ***Enhanced Public & Worker Safety***

**Surface Discharge Prevents Airborne Bacteria**



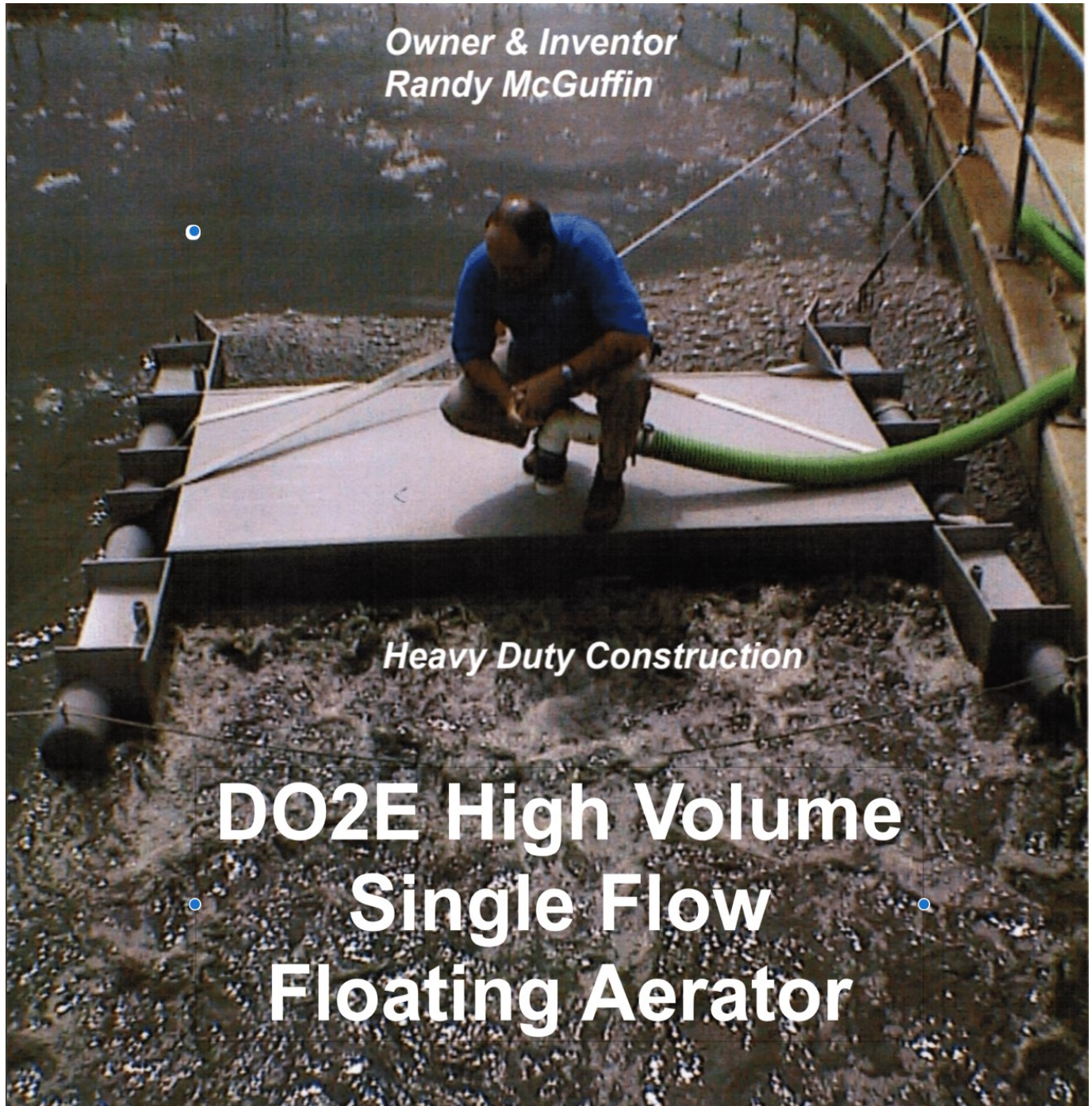
# Advanced Algae Control



**Advanced Algae Control without chemicals.**

# Heavy Duty Marine Grade PVC Construction

Chemically, Mechanically & Weld Construction  
99.7% Marine Grade PVC .30% Stainless Steel



*Owner & Inventor  
Randy McGuffin*

*Heavy Duty Construction*

**DO2E High Volume  
Single Flow  
Floating Aerator**

## **Benefits:**

- 1) Enhanced Worker Safety**
- 2) No Man Entry into Lagoon Required**
- 3) No Electricity in or around the Water**
- 4) No Moving Parts**
- 5) No Belts to Align**
- 6) No Pulleys to Adjust**
- 7) No Bearings to Grease**
- 8) Maintenance is conducted on shore**
- 9) Portable**
- 10) Long Life Expectancy (> 75 years)**
- 11) High Water Flow (Up to 24 MGD)**
- 12) Excellent Mixing Ability**
- 13) High Oxygen Transfer**
- 14) Environmentally Friendly**
- 15) Adjustable from Shore**
- 16) Quick & Easy Installation**
- 17) Made in the USA**

## **Applications:**

**Municipal  
Commercial  
Industrial  
Aquaculture  
Leachate ponds  
Lagoons  
Marinas**

**Creeks  
Lakes  
Rivers  
Bayous  
Bays  
Beaches**

# Qualifies for Most Energy Grant Funding

## Up to 75% Cost sharing depending on application.

**COLUMBIA RIVER PUD**  
A COMMUNITY-OWNED UTILITY

64001 Columbia River Highway  
Post Office Box 1193  
St. Helens, Oregon 97051  
(503) 397-1844  
FAX (503) 397-5215  
<http://www.crpud.net>

June 24, 2013

Jon Hanken  
City Manager  
City of Scappoose  
33568 E. Columbia Ave  
Scappoose, OR 97056

◆  
Board of Directors  
David Hoken  
Jake Carter  
Carol Everman  
Richard Simpson  
Loren Tarbell  
◆  
General Manager  
Kevin P. Owens, P.E.  
◆


Dear Jon,

Congratulations on completing another energy conservation project at the City. Please find our enclosed energy efficiency incentive check in the amount of \$69,821.51.

The aerator upgrades made at the City's waste water treatment plant are expected to produce 698,215 annual kilowatt hour savings (enough energy to power 52 homes a year) and save the City \$33,933 in annual energy costs.

At Columbia River PUD it is our desire to assist customers who are looking for ways to lower their energy costs so we are very pleased with this latest successful effort. Please thank Steve Wabschall, Wastewater Supervisor, for his help and support on this project. Let me know if you have questions or feedback in regards this project.

Sincerely,



Tim Lammers  
Key Accounts Manager  
503-397-8155  
[tlammers@crpud.org](mailto:tlammers@crpud.org)

c.c. Steve Wabschall

Enclosure

11  
503543288  
City of Scappoose  
Jul 11 13 00:48

## **Case Study**

**ENERGY GRANT: Company receives \$241,525.25**



### **Project:**

***One of the nations premier supplier of high quality pet food ingredients; 3D Solutions, teamed up with DO2E Waste Water Treatment for their wastewater lagoon aeration and mechanical mixer up-grade.***

### **Solution:**

***In January 2020, 3D Solutions replaced their old and outdated splasher aerators and mechanical mixers with seven of DO2E's 20 Hp Advanced High Volume Floating Aerators. This advanced aeration technology is designed to aerate and mix simultaneously, eliminating the need for both aerators and mixers. With each 20 Hp aerator / mixer moving over 24 MGD, 3D Solutions was able to reduce their energy cost by 67%, and maintenance cost by 90%.***

### **Results:**

***As a result of the dramatic energy and maintenance savings, 3D Solutions qualified for an energy grant in the amount of; \$241,525.25 which covered 70.4% of the cost of the new advanced aeration technology .***

***For information on advanced aeration and energy grant funding, contact; DO2E Waste Water Treatment. ([www.do2e.com](http://www.do2e.com))***

## **Customers:**

- 1) BP (2010 Deep Water Horizons Oil Spill)**
- 2) BHP (Offshore Oil Rigs & Mining)**
- 3) MOTIVA**
- 4) Exxon**
- 5) Container Corp. (Pulp Mill)**
- 6) EMCO of Canada**
- 7) The Armory (Bulgaria)**
- 8) 3D Solutions (Industrial)**
- 9) Florida Fish Hatchery (Holt Florida)**
- 10) KDI (Kansas Dairy Ingredients, Hugoton Kansas.)**

**Over 4,700 Installations throughout North America and 16 Countries for Municipal, Industrial, Commercial, Aquaculture applications and many more.**

**Wherever, Environmentally Friendly, Advanced Aeration is required, DO2E can provide the most economical and beneficial technology for your application.**

- Custom Units Available.**
- Units are scalable up to 20 Ft. W x 200 Ft. Long.**

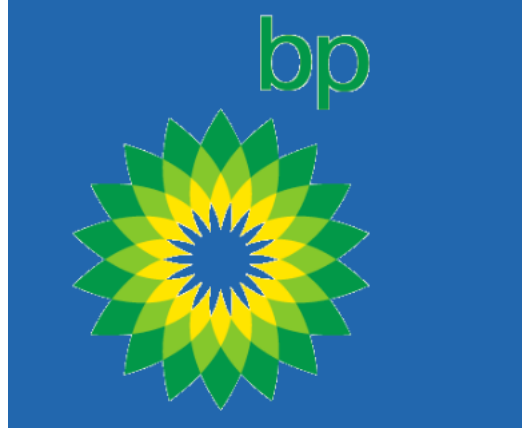
**(Search for: DO2E OTTER)**

- Available for Sale or Lease**

**Visit our web site: [www.do2e.com](http://www.do2e.com)**

**Or Call: (850) 698-6805**

**DO2E Advanced Aeration Technology,  
Selected and Deployed  
During the 2010 Deep Water Horizons Oil Spill in the Gulf of Mexico**



**Deepwater Horizon Incident Response:  
Actions and Expectations**



**Mike Cortez, P.E.**  
Manager, Technology  
BP Gulf Coast Restoration  
Organization  
Houston, Texas

**“Alternative Response Technologies”**



SPE Americas 2011 E&P Health /  
Safety / Security / Environmental  
Conference



# Alternative Response Technology Overview

**Michael J. Cortez**

**BP - Gulf Coast Restoration Organization**

## Statistics on Ideas

<b>Total</b>	<b>123,000 individual ideas</b>	
Subsurface well issues	80,000	
Spill Control	43,000	
<b>Within Spill Control</b>		
Ideas worth considering	470	
Remediation	170	
Booming, skimming, sorbents, sand cleaning, mechanical, etc		300
<b>Formally evaluated or tested in Field</b>	100	
<b>Significant Use</b>	> 30	

**NOTE:** PSE (Product, Services & Equipment), a separate database containing ~57,000 entries for existing & established capabilities created

# Evaluated Technologies Used During Response

## – 1 of 2



- Big Gulp Skimmer: over a million gallons of oil/water recovery
- Low Pressure Marsh Flusher – cleaned 15 miles of Barataria Bay oiled marsh
- Water Curtain at Pensacola Beach: operated without impacting vessel travel Invented by local resident Randy McGuffin
- Ocean Therapy oil/water separators – 32 ordered and put into service
- Heavy Oil Skimming System (HOSS) – invented by a boat captain and adopted widely (100 manufactured)
- Silt Fence Barrier – 30 miles installed protecting shorelines in MS and AL
- Rigid Boom - Over 3 miles installed in Pass Abel, Barataria Bay
- Boom Blaster cleaning system (using “car wash” concept) operated at Grand Isle
- Yates boom cleaning system (using “dishwasher”) with assembly line like transport system in use in Biloxi – processing over 15,000 feet of boom a day



TECHNICAL

# Three Phase Electric Motor

SS2002

## THREE PHASE MOTOR

### GENERAL SPECIFICATIONS:

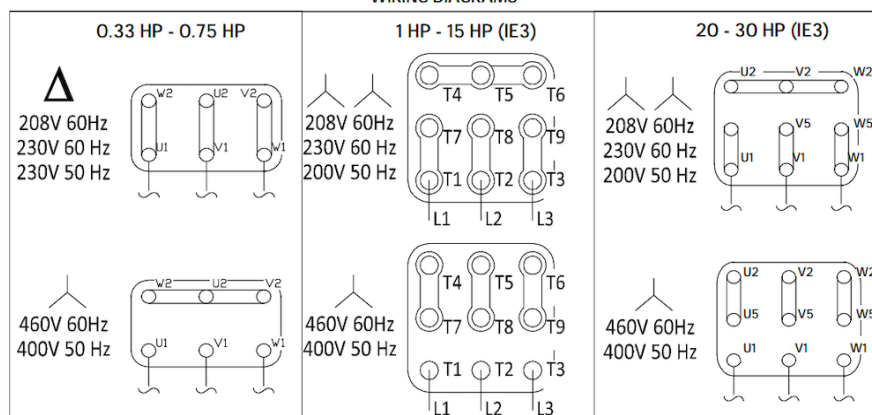
1. Type: 3-phase AC Motor IEC 60034
2. Marks: cURus, CE
3. Nema Premium Efficiency (IE3) - 1 HP AND LARGER (3 ph)
4. Poles: 2
5. Insulation class: F; F (B) for Premium efficient
6. Enclosure: TEFC
7. Protection IP55, Tropicalized
8. Thermal protector: Klixon 1400 C/150 °C
9. Service factor: 1.15 (60 hz)
10. Max. Ambient 40 °C
11. Duty: Continuous
12. Construction: aluminum frame

POWER		SIZE	60 HZ			50 HZ			60 hz Starting Current Ratio*	CABLE ENTRY 1 (cable gland incl.)	CABLE ENTRY 2
HP	KW		VOLTAGE	FLA 208-230 / 460 V	Efficiency	VOLTAGE	FLA 200/400 V	Efficiency			
0.33	0.25	63	208-230/460	1.5 / 0.7	59%	230/400	1.4 / 0.8	60.0%	3.9	M16	M20
0.5	0.37	63	208-230/460	2.3 / 1.0	59.2%	230/400	2.1 / 1.2	61.4%	3.6	M16	M20
0.75	0.55	71	208-230/460	2.7 / 1.2	68.8%	230/400	2.6 / 1.5	69.0%	3.8	M16	M20
0.75	0.55	71	208-230/460	2.3-2.2 / 1.3	74.5%	230/400	2.6 / 1.5	74.5%	6.8	M20	-
1	0.75	80	208-230/460	2.99-2.94 / 1.47	77.0%	200/400	3.28 / 1.64	80.7%	8.0	M25	M25
1.5	1.1	80	208-230/460	4.35-4.34 / 2.17	84.0%	200/400	4.92 / 2.46	82.8%	9.3	M25	M25
2	1.5	80**	208-230/460	5.91-5.96 / 2.98	85.5%	200/400	6.82 / 3.41	84.2%	8.7	M25	M25
		90	208-230/460	5.77-5.74 / 2.87	85.5%	200/400	6.58 / 3.29	84.2%	9.4	M25	M25
3	2.2	90	208-230/460	8.27-8.31 / 4.15	86.5%	200/400	9.6 / 4.8	85.9%	10.7	M25	M25
4	3	100	208-230/460	10.9-11.1 / 5.53	88.5%	200/400	12.86 / 6.38	87.1%	11.0	M25	M25
5.5	4	100	208-230/460	14.6-15.1 / 7.55	88.5%	200/400	17.7 / 8.86	88.1%	11.1	M25	M25
6.2	4.6	100	208-230/460	16.5-16.4 / 8.2	89.5%	200/400	19 / 9.5	88.6%	12.5	M25	M25
7.5	5.5	132	208-230/460	19.8-19.5 / 9.75	89.5%	200/400	22.2 / 11.1	89.2%	13.7	M25	M25
10	7.5	132	208-230/460	26.1-25 / 12.5	90.2%	200/400	28.6 / 14.3	90.1%	13.0	M25	M25
15	11	132	208-230/460	38.2-37.3 / 18.7	91.0%	200/400	43.4 / 21.7	91.0%	12.5	M25	M25
20	15	132	208-230/460	47.0 / 23.5	91.7%	200/400	52.4 / 26.2	91.9%	9.7	M32	M32
20***	15	160	208-230/460	48.8 / 24.4	91.0%	200/400	54.4 / 27.2	91.9%	10.7	M32	M32
25	18.5	160	208-230/460	62 / 31	91.7%	200/400	69 / 34.5	92.4%	12.5	M40	M40
30	22	160	208-230/460	71.6/35.8	91.7%	200/400	77.8 / 38.9	92.7%	10.6	M40	M40

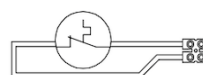
\* FLA x starting current ratio = starting current \*\* 2 hp size 80 motors used on SCL R30-MD ONLY. \*\*\* TS / TD models ONLY.

Shaded models to be discontinued

### WIRING DIAGRAMS



Thermal protection



$V_N = 250V, \cos \phi 0,6, I_N = 1,6 A$   
 $V_N = 250V, \cos \phi 1, I_N = 2,5 A$

Specifications subject to change without notice. Alternate motor suppliers may be used.

**For More Information, Contact:**

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