

**Solicitation Tabulation Packet  
for  
Solicitation FB-01332**

**Aquatic Weed Harvester Boats**

**Solicitation Designation: Public**




**Miami-Dade County**

5

**Solicitation #FB-01332 - Aquatic Weed Harvester Boats**Creation Date **Jul 1, 2019**End Date **Apr 13, 2020 6:00:00 PM EDT**Start Date **Mar 20, 2020 1:52:42 PM EDT**Awarded Date **Not Yet Awarded**

FB-01332--01-01 Aquatic Weed Harvester Boats					
Supplier	Unit Price	Qty/Unit	Total Price	Attch.	Docs
Aquarius Systems	First Offer - \$249,890.00	4 / each	\$999,560.00	Y	Y
Product Code:			Supplier Product Code: WT-34 Weed Tow Boat		
Agency Notes:			Supplier Notes:		

**Supplier Totals**

f Aquarius Systems			\$999,560.00		
Bid Contact <b>Jane Dauffenbach</b>		Address <b>200 N HARRISON ST</b>			
<b>janed@aquarius-systems.com</b>		<b>PO Box 215</b>			
<b>Ph 262-392-2162</b>		<b>NORTH PRAIRIE, WI 53153</b>			
Agency Notes:		Supplier Notes:		Head	
				Attch:	
					

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## Aquarius Systems

Bid Contact **Jane Dauffenbach**  
**janed@aquarius-systems.com**  
**Ph 262-392-2162**

Address **200 N HARRISON ST**  
**PO Box 215**  
**NORTH PRAIRIE, WI 53153**

Item #	Line Item	Notes	Unit Price	Qty/Unit	Attch.	Docs
FB-01332--01-01	Aquatic Weed Harvester Boats	<b>Supplier Product Code: WT-34 Weed Tow Boat</b>	<b>First Offer - \$249,890.00</b>	4 / each	<b>\$999,560.00</b>	Y Y
<b>Supplier Total</b>					<b>\$999,560.00</b>	

6

**Aquarius Systems****Item: Aquatic Weed Harvester Boats****Attachments**

- 1-Miami Dade Cover Letter.pdf
- 2-Miami Dade MFG Declaration.pdf
- 3-Miami Dade-Completed Bid Documents.pdf
- 4-Miami Dade-Equipment Information.pdf
- 5-Miami Dade- Equipment Component Data.pdf
- 6-Miami Dade- Warranty, Insurance, and Corporate Info.pdf
- 7-Miami Dade- Company History Experience.pdf
- 8-SOP 400-7.4.1 Supplier Selection and Monitoring.pdf
- 9-Addendum\_No\_1\_FB-01332\_\_040720.pdf



**AQUARIUS  
SYSTEMS**  
A Division of D&D Products Inc.

Phone 262-392-2162

Toll Free 800-328-6555

Fax 262-392-2984

Email [info@aquarius-systems.com](mailto:info@aquarius-systems.com)

Web [www.aquarius-systems.com](http://www.aquarius-systems.com)

PO Box 215 | 200 North Harrison Street | North Prairie, Wisconsin 53153 U.S.A.

Aquatic Plant Harvesters

Trash Skimmers

Amphibious Excavators

Swamp Devils

March 30, 2020

Miami Dade County  
Procurement Management  
111 NW 1st Street  
Miami, Florida 33128

Ref: Solicitation FB-01332

Dear Madam or Sir,

We truly appreciate this opportunity to quote Miami-Dade's requirements for four new Aquatic Weed Harvesting Boats.

Attached are our completed bid documents. We comply with the equipment specifications and have included drawings, photos, and supportive data on the components that will be used.

We comply with the special conditions of the contract, and foresee no difficulties meeting the delivery dates as outlined in the invitation to Bid. We also acknowledge the receipt of addendum #1.

Aquarius Systems has extensive experience manufacturing these machines with more than 20 units in service in the Miami area. The component vendors, steel suppliers, and staff are lined up and ready to execute on the work.

We have enjoyed working with Miami-Dade County in the past and would be delighted for the chance to work with you once again. Let us know if you have any questions or require more information.

Yours Sincerely,

Aquarius Systems

Nicholas Ward  
Technical Sales Representative



**AQUARIUS  
SYSTEMS**  
A Division of D&D Products Inc.

Phone 262-392-2162

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Aquatic Plant Harvesters

| Trash Skimmers

| Amphibious Excavators

| Swamp Devils

## Manufacturer's Declaration

April 10, 2020

To whom it may concern,

We hereby declare that D&D Products Inc. is the exclusive manufacture of all Aquarius Systems brand Aquatic Weed Harvesters, including the WT-34 Weed Tow Boat. As the largest and oldest manufacturer of surface water management equipment in the industry, Aquarius continues to forge new relationships for the improvement of water quality worldwide. In regards to FB-01332, we are in compliance with your essential requirement of the solicitation.

Yours Sincerely,

Aquarius Systems  
Division of D&D Product Inc.

Nicholas Ward  
Technical Sales Representative

## **Solicitation FB-01332**

### **Aquatic Weed Harvester Boats**

### **Solicitation Designation: Public**



**Miami-Dade County**

## Solicitation FB-01332 Aquatic Weed Harvester Boats

Solicitation Number FB-01332  
Solicitation Title Aquatic Weed Harvester Boats

Solicitation Start Date Mar 20, 2020 1:52:42 PM EDT  
Solicitation End Date Apr 13, 2020 6:00:00 PM EDT  
Question & Answer End Date Apr 2, 2020 6:00:00 PM EDT

Solicitation Contact Marie Williams  
Procurement Contracting Officer 2  
ISD - Procurement Management Services  
Marie.Williams@miamidade.gov

Solicitation Contact Brian Webster  
Procurement Contracting Officer 2  
ISD - Procurement Management Services  
Brian.webster@miamidade.gov

Solicitation Contact Vanessa Stroman  
Procurement Contracting Manager  
ISD - Procurement Management Services  
Vanessa.Stroman@miamidade.gov

Contract Duration 5 years  
Contract Renewal Not Applicable  
Prices Good for 180 days

Solicitation Comments **SCOPE: This solicitation is for the purchase of Aquatic Weed Harvester Boats for the Department of Transportation and Public Works (DTPW) which includes all labor, materials, training, and other work and incidentals required to provide Aquatic Weed Harvester Boats on this contract.**

### Item Response Form

Item FB-01332--01-01 - Aquatic Weed Harvester Boats  
Quantity 4 each  
Unit Price   
Delivery Location **Miami-Dade County**  
[Miami-Dade County](#)  
111 NW 1st Street  
Miami FL 33128  
Qty 4

#### Description

Aquatic Weed Harvester Boats in accordance with specifications and requirements of this solicitation.

Quantities are for Bidder's guidance only: (a) estimates are based on the County's anticipated needs and/or usage during a previous contract period and; (b) the County may use these estimates to determine the low Bidder.



MIAMI-DADE COUNTY, FLORIDA

I N V I T A T I O N T O B I D  
( I T B )

## GENERAL TERMS AND CONDITIONS:

All General Terms and Conditions of Miami-Dade County Procurement Contracts are posted online. Bidders that receive an award from Miami-Dade County through Miami-Dade County's competitive procurement process must anticipate the inclusion of these requirements in the resultant contract. These general terms and conditions are considered non-negotiable. The general terms and conditions include important instructions and requirements that affect all bids. By submitting a bid for a Miami-Dade County solicitation a bidder attests to its understanding of these General Terms and Conditions.

All applicable terms and conditions pertaining to this solicitation and resultant contract(s) may be viewed online at the **Miami-Dade County, Strategic Procurement Division's webpage** by clicking on the below link:

<http://www.miamidade.gov/procurement/library/boilerplate/general-terms-and-conditions-r19-1.pdf>

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**NOTICE TO ALL BIDDERS:**

Bids are to be submitted electronically through a secure mailbox at BidSync ([www.bidsync.com](http://www.bidsync.com)) until the date and time indicated in the BidSync Solicitation End Date published in BidSync and in this solicitation document. It is the sole responsibility of the Bidder to ensure that its bid is in BidSync before the solicitation deadline. There is no cost to the Bidder to submit a bid for a Miami-Dade County solicitation via BidSync. Electronic submissions may require the uploading of electronic attachments. The submission of attachments containing embedded documents or proprietary file extensions is prohibited. All documents should be attached as separate files.

For information concerning this solicitation, use the question/answer feature provided within the solicitation by BidSync, at [www.bidsync.com](http://www.bidsync.com). Questions of a material nature must be received prior to the date and time of the BidSync Solicitation Question & Answer End Date specified in the solicitation. Material changes, if any, to the solicitation will be made only by written addendum (see Addendum Section of BidSync site).

Bidders must allow sufficient time to complete online forms and upload all bid documents. All information and documents **must be fully entered, uploaded, acknowledged ("Confirm") and recorded into BidSync before the** date and time of the BidSync Solicitation End Date, or the system will stop the process and the submission will be considered late and will not be accepted.

No part of a bid can be submitted via hardcopy, email, or fax.

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## **SECTION 2**

### **SPECIAL TERMS AND CONDITIONS**

#### **2.1 PURPOSE**

The purpose of this solicitation is to establish a contract for the purchase of Aquatic Weed Harvester Boats for Miami-Dade County (County) on behalf of Department of Transportation and Public Works (DTPW). The awarded Bidder shall furnish all labor, materials, equipment, tools, and all other work and incidentals required to provide Aquatic Weed Harvester Boats on this contract.

#### **2.2 TERM OF CONTRACT**

The contract shall commence on the first calendar day of the month succeeding approval of the contract by the Board of County Commissioners, or designee, unless otherwise stipulated in the Blanket Purchase Order issued by the Internal Services Department, Strategic Procurement Division. The contract shall expire on the last day of the 60<sup>th</sup> month.

#### **2.3 METHOD OF AWARD**

Award of this contract will be made to the responsible bidder who submits the lowest priced responsive bid and meets the minimum requirements below as well as all of the technical requirements within Section 3 of this solicitation. Bidder shall submit required documentation with bid submittal or upon the County's request.

2.3.1 Bidder shall be an Aquatic Weed Harvester Boat manufacturer or authorized dealer of the manufacturer. If the Bidder is the manufacturer, the Bidder shall submit a letter on company letterhead attesting they are the manufacturer. If the Bidder is a dealer of the manufacturer, the Bidder shall submit authenticating documentation from the manufacturer of their status as an approved dealer.

2.3.2 Bidder shall be regularly engaged in the business of providing Aquatic Weed Harvester Boats. Bidder shall submit two (2) references which can verify that the Bidder is currently providing or has provided goods and services within the past five (5) years similar to what is described in this bid solicitation. The references should include the customer's company name, length of business relationship, and the name, title, address, email address and telephone number of the contact person, who can verify that the Bidder has successfully provided such goods and services that the Bidder is offering under this solicitation. These references shall ascertain to the County's satisfaction that the Bidder has sufficient experience and expertise in the industry.

2.3.3 Bidder shall have and provide contact information of its local representative in the South Florida Tri-county region (Palm Beach, Broward and Miami-Dade Counties) that will be used to perform warranty repairs and services.

Failure to meet these requirements may result in Bidder's offer being rejected. However, in accordance with Section 1, Paragraph 1.5.K, the County reserves the right to request and evaluate additional information.

## 2.4 **SMALL BUSINESS ENTERPRISE CONTRACT MEASURES**

This solicitation contains a Bid Preference. Refer to Section 1, General Terms and Conditions, Paragraph 1.44 Small Business Enterprise Measures for further details.

## 2.5 **PRICES**

Bidder shall state its prices on the **Item Response Form**. If the Bidder is awarded a contract, the initial contract prices shall remain fixed for a period of one year after the commencement of the contract. Prices offered shall include, but not be limited to, all regulatory and other fees, assembly, training, manuals, tools, shipping/freight, warranty, all permits, applicable taxes, and any and all costs required to provide Aquatic Weed Harvester Boats as described in this solicitation.

## 2.6 **PRICE ADJUSTMENT**

The initial contract prices resultant from this solicitation shall prevail for a one-year period from the effective date of the Contract. Prior to the end of the initial one-year period and for each subsequent year thereafter, the County may consider price adjustments based on the percentage change in the value of the most recent Producer Price Index (PPI) for Boat Building, All other boats (excluding military and commercial), Commodity Series ID.: PCU3366123366128, as amended. The County reserves the right to apply any reduction in pricing for the one-year periods(s) based on the downward movement of the applicable index.

The adjustment will be applied by calculating the percentage change (increase or decrease) between the index values effective on the first day of the twelve (12) month period and **the most recent index available on the day of adjustment**. Day of adjustment will be the last business day of the twelve (12) month period.

It is the awarded Bidder's responsibility to request any pricing adjustment under this provision. For any adjustment to commence on the first day of next one-year period, the request for adjustment should be submitted no later than sixty (60) calendar days prior to expiration of the then current one-year period. The awarded Bidder's adjustment request shall not be in excess of the relevant pricing index change. If no adjustment request is received from the awarded Bidder, the County will assume that the awarded Bidder has agreed to waive any pricing

adjustment for the next one-year period.

The County reserves the right to reject any price adjustment requests submitted by the awarded Bidder if they are not in accordance with the above.

## **2.7 “EQUAL” PRODUCT CAN BE CONSIDERED UPON RECEIPT OF SPECIFIED DATA**

Manufacturer's names, brand names and/or model number information contained in this solicitation, if any, are being used for the sole purpose of establishing the minimum requirement of level of quality, standard of performance and design, and is in no way intended to prohibit the offer of another manufacturer's products of equal material unless otherwise indicated herein.

This solicitation requires submission of the following documentation to enable County evaluation of “equal” products: 1) Product Information Sheets and 2) Safety Data Sheets.

If an “equal” product is considered by the County, the product shall be equal in quality and standards of performance to the product specified in the solicitation. Where an “or equal” product is offered, product information is required with the initial offer and shall be submitted with two (2) complete sets of product information sheets (such as factory specifications, standard manufacturer information sheets, catalogues, and brochures), and if requested by the County, two (2) copies of performance test results of the boat offered as an equal. Also, for product information submittals, all supporting documentation submitted by the Bidder must in total meet the required specifications set forth in this solicitation.

Where the standard product literature submitted with the offer provides information that does not comply with the specifications, the Bidder shall state, in an official letter on corporate letterhead as part of their initial offer, the differences between the item they are specifically offering, and the equipment described by the standard product literature, to substantiate compliance to all of the specifications set forth in this solicitation. In such cases, any offer submitted with standard product literature but without the letter explaining compliance may result in the rejection of the offer for not meeting the solicitation specifications.

If samples of all “or equal” items bid are required for evaluation, such items are to be provided at no cost to the County, and should be submitted with the initial offer, or at the time of specific request. Failure to meet this requirement may result in your offer being rejected.

For “equal” products to be evaluated based on submission of product labels, the initial offer should be accompanied with labels indicating the specification and ingredients for each “or equal” item offered. Failure to meet this requirement may result in the offer being rejected.

The County shall be sole judge of equality, based on the best interests of the County, and its decision in this regard shall be final. Items labeled "No Substitute" on the solicitation are the only products that will be accepted under this solicitation.

## 2.8 INSURANCE REQUIREMENTS

The following supersedes the insurance requirements of Section 1, Paragraph 1.22:

The Bidder shall furnish to the Internal Services Department / Strategic Procurement Division, 111 N.W. 1<sup>st</sup> Street, Suite 1300, Miami, Florida 33128-1989, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirements as outlined below:

- A. Worker's Compensation Insurance for all employees of the Bidder as required by Florida Statute 440.
- B. Commercial General Liability Insurance, in an amount not less than \$500,000 per occurrence and \$1,000,000 in the aggregate. **Miami-Dade County must be shown as an additional insured with respect to this coverage.**
- C. Automobile Liability Insurance covering all owned, non-owned and hired vehicles used in connection with the work, in an amount not less than \$500,000 combined single limit per occurrence for bodily injury and property damage.

All insurance policies required above shall be issued by companies authorized to do business under the laws of the State of Florida, with the following qualifications:

The company must be rated no less than "A-" as to management, and no less than "Class VII" as to financial strength, by Best's Insurance Guide, published by A.M. Best Company, Oldwick, New Jersey, or its equivalent, subject to the approval of the County Risk Management Division.

or

The company must hold a valid Florida Certificate of Authority as shown in the latest "List of All Insurance Companies Authorized or Approved to Do Business in Florida" issued by the State of Florida Department of Financial Services.

**NOTE: CERTIFICATE HOLDER MUST READ: MIAMI-DADE COUNTY  
111 NW 1<sup>st</sup> STREET  
SUITE 2340  
MIAMI, FL 33128**

## **2.9 METHOD OF PAYMENT**

The awarded Bidder shall submit an invoice(s) to the County. The date of an invoice shall not exceed 30 calendar days from the delivery and final acceptance of the boats. DTPW requires invoices be of clear quality, include the correct remittance address, not on dark paper (when possible), and sent to:

Miami-Dade County, Finance Department  
Attn: Shared Services Payable Unit  
C/O Miami Dade Department of Transportation and Public Works  
111 NW 1st Street, 26th Floor  
Miami, FL 33128

OR

the virtual portal for invoice submission at [invsubp@miamidade.gov](mailto:invsubp@miamidade.gov)

Refer to Section 1, General Terms and Conditions, Paragraph 1.35, Invoices for further requirements. Failure to submit invoices in the prescribed manner will delay payment.

## **2.10 PRECONSTRUCTION CONFERENCE AND PRODUCTION/PROTOTYPE INSPECTION**

2.10.1 The awarded Bidder shall be required to attend a Pre-Construction Conference conducted by the County prior to the initial manufacturing or assembly of the boat as specified in this solicitation. The County will select the location of this construction conference. Any costs incurred by the County in conjunction with the pre-construction conference will be borne by the County.

2.10.2 The awarded Bidder shall provide an on-site production/prototype inspection of the first boat manufactured at a time and location which is mutually convenient to the awarded Bidder and the County staff attending. This inspection shall be performed prior to the final assembly of the boat in order to evaluate the placement of controls and lines, structural changes and general construction techniques. The awarded Bidder shall provide one (1) month advance notice to DTPW prior to the scheduling of the on-site production inspection.

2.10.3 The County reserves the right to require multiple production inspections where multiple locations or companies are involved with the construction of a final boat. Any costs incurred by the County in conjunction with on-site

production/prototype inspection will be borne by the County.

2.10.4 The County reserves the right to require modifications to the boat if such modifications are necessary in order to bring the equipment into compliance with the technical specifications, the awarded Bidder's offer, or best commercial practices. No material changes shall be made to the County's technical specifications or the awarded Bidder's offer.

2.10.4 The County will provide the awarded Bidder with a provisional acceptance once the prototype inspections are successful and complete.

## 2.11 **DELIVERY**

The awarded Bidder shall make delivery of the Aquatic Weed Harvester Boat(s) within 210 calendar days after the date of the Purchase Order. All boats do not have to be delivered at one time. All deliveries shall be made in accordance with good commercial practice and all required delivery timeframes shall be adhered to by the awarded Bidder; except in such cases where the delivery will be delayed due to acts of nature, strikes, or other causes beyond the control of the awarded Bidder. In these cases, the awarded Bidder shall notify DTPW of the delays in advance of the original delivery date so that a revised delivery schedule can be appropriately considered by DTPW.

Should the awarded Bidder fail to deliver in the number of days stated above, it is hereby agreed and understood that the County reserves the right to cancel the contract with the awarded Bidder and to secure the services of another vendor to complete the work. If the County exercises this right, the County will be responsible for reimbursing the awarded Bidder for work which was completed and found acceptable by DTPW in accordance with the contract. The County may, at its option, demand payment from the awarded Bidder, through an invoice or credit memo, for any additional costs over and beyond the original contract price which were incurred by the County as a result of having to secure the services of another vendor. If the awarded Bidder fails to honor this invoice or credit memo, the County may terminate the contract for default.

The Aquatic Weed Harvester Boats shall be delivered ready to use and equipped with all equipment needed for immediate operation to:

Miami-Dade County Auto Shop #3  
8801 NW 58 Street  
Miami, FL 33178  
Days: Monday through Friday  
Hours: 7:00 AM to 3:00 PM (Local Time)

The Aquatic Weed Harvester Boats shall be constructed, prepared and protected from damage likely to be caused during handling, shipping, and off-loading.

Valuable and easily pilfered parts such as tools and loose small items shall be shipped in such a manner as to resist pilferage.

## **2.12 ACCEPTANCE BY THE COUNTY**

When all requirements and conditions stated in this solicitation have been met, including correcting deficiencies, providing required lists/documentation, etc., the boat(s) will be accepted and dated by the County.

After award, if the awarded Bidder's boat is determined to not meet the specifications and requirements of this contract, either prior to acceptance or upon initial inspection, the boat will be returned to the awarded Bidder at their expense. At the County's sole option, the County will notify the awarded Bidder to either provide a replacement for the boat or a full credit for the returned boat. The awarded Bidder shall not assess any additional charge(s) for any conforming action taken by the County under this clause.

If the awarded Bidder fails to provide the replacement Aquatic Weed Harvester Boat within the period specified in the notice, the County may (a) place the awarded Bidder in default of its contract, and/or (b) procure the products or services from another vendor and charge the awarded Bidder for any additional costs that are incurred by the County for this work or items; either through a credit memorandum or through invoicing.

## **2.13 WARRANTY**

In addition to Section 1, Paragraphs 1.7 and 1.8, the following applies to this solicitation:

2.13.1 A copy of the manufacturer's and/or supplier's certificates of warranty should be submitted with the bid submittal; however, it must be submitted at the time of specific request of the County. The warranty certificates shall provide a comprehensive liability of all components that are covered under the warranty.

2.13.2 Type of Warranty Coverage Required:

In addition to all other warranties that may be supplied by the awarded Bidder, the awarded Bidder shall warrant its products and/or service against faulty labor and/or defective material, for a minimum period of one (1) year after the date of acceptance of the Aquatic Weed Harvester Boat, labor, materials and/or equipment by the County. This warranty requirement shall remain in force for the full one (1) year period; regardless of whether the awarded Bidder is under contract with the County at the time of defect. Any payment by the County on behalf of the goods or services received from the awarded Bidder does not constitute a waiver of these warranty

provisions.

### 2.13.3 Correcting Defects Covered Under Warranty

The awarded Bidder or its local representative shall promptly correct any deficiency, at no cost to the DTPW, within five (5) business days after the County notifies the awarded Bidder of such deficiency in writing or after parts have been received by its local representative. The awarded Bidder shall expedite delivery of any repair parts in order to avoid extended idle periods. If the awarded Bidder fails to honor the warranty and/or fails to correct, repair or replace the defective work or items within the period specified, the County may, at its discretion, notify the awarded Bidder, in writing, that the awarded Bidder may be debarred as a County bidder and/or subject to contractual default if the corrections or replacements are not completed to the satisfaction of the County within fourteen (14) calendar days of receipt of the notice.

If the awarded Bidder fails to satisfy the warranty within the period specified in the notice, the County may (a) place the awarded Bidder in default of its contract, and/or (b) procure the products or services from another vendor and charge the bidder for any additional costs that are incurred by the County for this work or items; either through a credit memorandum or through invoicing.

### 2.13.4 Correcting Repeat Failures Covered Under Warranty

If any warranty repair experiences a repeat failure within fifteen (15) calendar days following the repair due to faulty workmanship supplied by the awarded Bidder or its local representative, it hereby understands and agrees that it will repair the failure and incur any and all costs associated with the repeat failure within two (2) business days after notification of the failure by a DTPW representative.

## 2.14 **COMPLIANCE WITH GOVERNMENT STANDARDS**

All items to be purchased under this contract shall be in accordance with all governmental standards, including, but not be limited to, State and Federal and American National Standards Institute (ANSI) requirements and standards, Florida Department of Transportation (FDOT) and those issued by the Occupational Safety and Health Administration (OSHA).

## 2.15 **OMISSION FROM SPECIFICATIONS:**

The apparent silence of the specifications and any addendum regarding any details or the omission from the specifications of a detailed description concerning any point does not relieve the bidder from furnishing a complete and ready to work

boat, and shall be regarded as meaning that only the best commercial practices are to prevail, and that only new materials and skillset of first quality are to be used. All interpretations of the technical specifications herein shall be so governed.

## **SECTION 3**

### **TECHNICAL SPECIFICATIONS**

#### **3.1 SCOPE OF WORK**

This contract is for the purchase of Aquatic Weed Harvester Boats for the Department of Transportation and Public Works (DTPW). The awarded Bidder shall furnish all labor, materials, training, and all other work and incidentals required to provide Aquatic Weed Harvester Boats (boats) on this contract.

The Aquatic Weed Harvester Boats shall be new and the most recent model available. Any optional components of the Aquatic Weed Harvester Boats, which are required in accordance with the contract specifications and recommended by the manufacturer for the application intended must be included and will be considered standard equipment for the purposes of this solicitation. The application and usage of all components, sub-components or parts must be in accordance with their manufacturers' recommendations as well as the recommendations of all associated component manufacturers. Demonstrator models will not be accepted.

Omission of any essential detail from these specifications does not relieve the awarded Bidder from furnishing a complete boat. The boat shall conform to all applicable OSHA, State, and Federal safety requirements. All components and services (whether primary or ancillary) of the boats are to be in accordance with current Society of Automotive Engineers (SAE) standards and recommended practices. The engineering, materials, and skillset associated with effort performed hereunder shall exhibit a high level of quality and appearance consistent with or exceeding industry standards.

#### **3.2 GENERAL INFORMATION**

Miami-Dade County utilizes mechanical harvesting to control aquatic weeds, in canals, waterways and lakes throughout the County. The Aquatic Weed Harvester Boats are used to remove submerged aquatic vegetation/weeds and other items illegally dumped in the waterways. This prevents aquatic weeds from obstructing the flow of water and blocking the canal systems, which are a critical component of the County's overall drainage system to minimize flooding. The County removes approximately 3,500 tons of aquatic weeds every year.

The primary function of the boat is to tow a plow/cutter behind the boat to cut or uproot submerged aquatic vegetation. These boats are highly specialized with a unique design. The length, width and height of the boat are limited due to canal widths, turning radius limitations, water depth and clearance between existing water levels and bridges or culvert structures. Thus, there is little room for

variance concerning the length, width, and height dimensions of the boat as per the specifications. In addition, the boat is exposed to bottom hazards such as sharp pointed boulders and sunken vehicles. Therefore, the boat shall be designed with the appropriate bottom protection.

The County's current Aquatic Weed Harvester Boats weigh approximately 18,000 lbs. each. The plows weight 1,000 lbs. each.

### **3.3 DETAILED DRAWINGS**

Upon final assembly of the constructed boat, before shipment to the County, a set of detailed drawings shall be submitted to the Miami-Dade County Fleet Management Division and DTPW's Road, Bridge and Canal Maintenance Division.

### **3.4 WATER TRIALS AND TESTS**

3.4.1 The awarded Bidder will be required to conduct water trials for each boat with County personnel prior to delivery. The awarded Bidder may select the location of the trials, subject to agreement by DTPW. The trials must be conducted in an environment similar to that which the boats will be subjected to during normal usage.

3.4.2 The operational parameters and aspects of all equipment, instrumentation, and the performance abilities of the boats must be tested according to acceptable industry practices. The written results of the testing must be provided to the County for additional review, evaluation, and comment.

3.4.3 If any operational or performance metric of the boats does not meet the standards required, the awarded Bidder agrees to correct such deficiencies prior to the delivery and acceptance of the boats by the County.

3.4.5 Water trials and tests will be at no cost to the County.

### **3.5 PARTS AND FITTINGS**

3.5.1 Parts and fittings for the boat and its accessories (i.e. engine and accessories, hydraulic lines, hydraulic pumps and valves, hydraulic motors, hoses, fittings, bolts, hardware, electronics etc.) shall be of a manufacture, design and size that are readily available from South Florida tri-county region suppliers.

3.5.2 Hydraulic fittings for hoses and pumps shall be at minimum #304 or #316 stainless steel. Tubes shall be a minimum .049 stainless steel. Pot metal, inferior metallic fittings or plastic fittings will not be accepted. Hydraulic hoses shall be of sufficient size and/or pressure rating of the hydraulic pumps and all circuits and devices

- 3.5.3 Odd sized, hard-to-find and, or single source items are not to be used. The awarded Bidder shall submit a listing of suppliers located in the South Florida tri-county region who are available to supply parts and fittings for the boats. The list should be submitted with the bid submittal; however, it must be submitted at the time of specific request of the County.
- 3.5.4 The awarded Bidder shall supply a complete list (also known as a line setting ticket) of all components for the entire boat, which shall include manufacturer's part name, part number, description, warranty and supplier or awarded Bidder (name, address, and phone number), etc. The list shall be submitted to DTPW, before the completed boat is shipped.
- 3.5.5 DTPW will review the aforementioned lists to ensure compliance with all requirements stated in this solicitation. Failure to comply with these requirements shall result in an order from the County to NOT ship the boat, as it will not be accepted.

### **3.6 GENERAL HARVESTER REQUIREMENTS**

- 3.6.1 The boats shall conform to all Federal, State, Marine, and safety regulations.
- 3.6.2 The boat shall not be foreign built.
- 3.6.3 This boat shall be eligible for State of Florida Marine Boat Registration.
- 3.6.4 The hull configuration shall be a streamlined design to allow the most rapid response to operator controls (steering, forward, reverse). A square barge configured hull is not acceptable. This is a safety issue because the boat will be operating in fast moving currents near to bridges, floodgates, and dams. Rapid response and maneuverability is critical.
- 3.6.5 The boat shall be a completely self-contained system; self-powered, capable of being operated by one-person on the water, and transportable over land by trailer.
- 3.6.6 The boat shall be capable of towing (dragging) a submerged 1,000 lb. cutting blade (plow) to cut or uproot bottom vegetation.
- 3.6.7 The boat shall be capable of gathering floating vegetation and debris with a front mounted basket.
- 3.6.8 The boat shall be capable of discharging the load upon a canal/river bank or barge.
- 3.6.9 The boat shall be capable of each operation independently.

- 3.6.10 The boat shall be capable of being configured for land transportation without disassembly.
- 3.6.11 All bolts and fasteners shall be marine grade stainless steel or cadmium plated steel Grade 8 as required for corrosion resistance and/or maximum clamping strength.
- 3.6.12 Any required odd shaped, special type, or specially configured tools, which are not standard tools, shall be identified and supplied at the time of delivery of each boat by the manufacturer or authorized dealer of the manufacturer.

### **3.7 BOAT CONFIGURATION**

- 3.7.1 The general hull shape, design, and configuration shall be similar to the existing "porpoise shape" hull boats presently operated by the County. See Exhibits A and B for general illustrations.
- 3.7.2 Construction shall be in accordance with American Society for Testing Materials (ASTM) specification A131-AH36 carbon steel or approved equal. A 5/16" plate shall be used for the bottom and sides. The side-to-bottom connection seam for the full outside length of the boat shall include a 3/8" thick, 3" angle to serve as a wear plate. This angle shall be a continuous weld. Spot welds or stitch welds are not acceptable.
- 3.7.3 Boat shall be 20 ft. long (not including the basket) with 8 ft. beam.
- 3.7.4 Boat shall have a squared off, approximate 45 degree front bow design.
- 3.7.5 The engine compartment shall have a protective covering on all sides to protect from water intrusion. The engine compartment shall have diamond-plate aluminum hatch covers capable of withstanding foot traffic. The hatch covers shall be designed and fabricated to be opened without strain on the operator. Gas lift support cylinders shall be installed on the hatch covers to assist lifting and holding covers in the open position. A central locking system shall be incorporated into each hatch cover with lockable handle located in operator compartment. Each shall consist of single rod with doglegs that engage rings attached to bottom side of hatch when in locked position. See Exhibits A and B for general illustrations.
- 3.7.6 A ridge vent shall be constructed between engine hatch covers that shall supply fresh air to engine compartment while preventing the direct water entry. The ridge vent shall match the engine hatch cover in length exempting the last 28 inches before the winch compartment. Ridge vent height shall not exceed 2 inches; airflow entry shall follow an "S" path configuration.

- 3.7.7 The operator compartment shall have a protective covering on all sides to protect from water intrusion. The operator compartment shall be fitted with ¼" diamond plate aluminum hatch covers. The hatch covers shall be in 3 sections designed with forward-most hatch sliding forward within a set of roller tracks, then the middle and rear covers folding on top of and ahead of the operator compartment when in the open position. The hatch covers shall be secured with padlocks when closed. See Exhibits A and B for general illustrations.
- 3.7.8 Lower dash shall be padded with 4"x 54" with minimum 4" padding.
- 3.7.9 One (1) pedestal seat shall be comprised of a Wise Big-Man or approved equal high back 300 lb. capacity folding chair, mounted on an Attwood SeaSport or approved equal fixed height bell pedestal with slide adjustment. The seat shall swivel 360 degrees with fore and aft adjustment lined up with helm.
- 3.7.10 Steering shall have a system which is hydraulically isolated from the basket lift and tilt system. Steering shall be with a 17" wheel through a Char-Lynn Model # 211-1001002 or approved equal steering unit and a Kobelt 7050-B7.5 or approved equal steering cylinder. Metallic piston required.
- 3.7.11 Dash gauges and control panel shall be John Deere Marine or approved equal, and shall include, but not be limited to, tachometer, fuel gauge, voltmeter, and engine temperature.
- 3.7.12 The boat shall be equipped with a Johnson Pump Aguajet WD 5.2 or approved equal deck wash down system. System location and plumbing to be determined at Pre-Construction conference (refer to Section 2.9).
- 3.7.13 One (1) Flex-a-Lite Trimline 116N fan or approved equal shall be installed into starboard side of the rear cockpit safety shield to provide cooling to the operator. The fan shall be wired with flex-coiled wire to provide unrestricted up and down travel of safety shield. The fan shall be controlled through a dash-mounted switch.
- 3.7.14 The electrical system shall be equipped with a marine grade battery-disconnect switch that is easily accessible from the operators station and a waterproof DC Hi-Amp circuit breaker for the fire suppression system which shall be wired to hot side of battery disconnect.
- 3.7.15 The electrical system shall include a Blue Sea System Model #5426036 or approved equal switch, and a breaker panel located in the cockpit dash to protect all lighting and accessory circuits. Switches and breakers shall be properly labeled to circuit and function.

- 3.7.16 The boat shall be equipped with a Coast Guard approved automatic fire suppression system for size application, with manually activated override inside operator station.
- 3.7.17 The boat shall be equipped with a skeg system which shall include rudder stops at 35 degrees port and starboard. Access shall be provided for maintenance of rudder shaft and steering cylinder.
- 3.7.18 Navigation lights and horn shall be per U.S. Coast Guard requirements.
- 3.7.19 Rubrails / Rubwear protection: Exposed gunnels, bow, and sides shall include half round steel pipe front-to-back. Top of gunnels and bow shall be additionally protected with 4"x 4" reinforced plastic lumber, TriMax Structural Plastic Lumber or approved equal. The plastic lumber shall be black in color.
- 3.7.20 Four (4) heavy duty lifting eyes at 1" x 6" flat bar with 3" round openings shall be appropriately installed for balance when lifting the boat from the water and four (4) B40 size D-rings shall be welded to each lifting pad for boat tie-downs.
- 3.7.21 Port and starboard sides of front hull/deck shall have pockets/chambers that encompass the basket lifting cylinders. The pockets/chambers shall each have a below deck of 16 1/2" x 20 1/2" access port with removable cover to provide for maintenance of hydraulic cylinder, and debris removal; cylinder pin removal bung with PVC cap is also required. The top of the pockets/chambers shall have a flexible neoprene flap covers to allow cylinder movement while providing a seal against the entry of ducks, fish, snakes and other hazards. The pockets/chambers shall drain to the front bilge pump. A 4" drain plug shall be located on the keel or the lowest point of the boat.
- 3.7.22 The boat shall be so designed with a low profile so it can navigate under obstructions that are 24" above the surface of the water.
- 3.7.23 The rear deck shall be designed for retrieval and transport of the towed cutter/plow. The design of the boat shall take into consideration that the floatplane of the boat shall include the weight of the cutter/plow on the rear deck. Proper floatplane is critical as the boat gathers floating vegetation and operates the basket.
- 3.7.24 Each compartment shall include a submersible Rule 2000 GPH or approved equal heavy duty bilge pump with a Rule SuperSwitch or approved equal float switch, and individually controlled by a Rule or Johnson Pump or approved equal (automatic and manual override) panel switch. Pump through hull discharge fittings shall be marine grade stainless steel. For

purpose of maintenance and inspections, the pumps and float switches should be easily accessible without the use of tools. Pumps shall be wired to “hot-side” of battery disconnect.

3.7.25 The keel coolers shall be bow-to-stern (not starboard to port) configuration constructed with 8” steel channel. They shall be so designed and fabricated to allow sufficient water flow, while protecting the keel cooler tubes from vegetation and debris accumulation. An alternative configuration may be acceptable provided it is pre-approved in accordance with Section 2.9 herein.

3.7.26 The boat shall be designed with access ports strategically placed for easy access to hard-to-reach areas in order to service and repair the engine, transmission, hydraulics, accessories, etc. accordingly.

### **3.8 POWERTRAIN**

3.8.1 The engine shall be the most current model diesel John Deere Model 4045AFM85 or approved equal with a 160 BHP rating at 2300 rpm. The engine shall have/be:

- A. Air and oil filters
- B. An industrial muffler
- C. Above water exhaust
- D. Keel-cooled
- E. Electronic shut down system for low oil (10 psi), overheat (220 degrees), with warning light, audible alarm, and manual override not exceeding 30 seconds in duration
- F. Minimum 80 U.S. gallon fleet tank capacity
- G. Fuel-water separator (not heated) with paper filter element
- H. Engine oil pan fitted with an oil drain hose with an easily accessible quick-connect fitting.

3.8.2 Transmission shall be a Twin Disc MG-5061-SC or approved equal of appropriate ratio for engine, boat and perform intended work as described in Section 3.2.

3.8.3 Engine and transmission shall have individual/independent mounting. Engine shall have four (4) mounts independent of transmission mounts, so as to allow removal of transmission for maintenance without disturbing engine mountings.

3.8.4 Hydraulic system shall be powered by a Parker-Tyrone TP16-115/PVP16-452N55 pump or approved equal. Hydraulic pickup shall be located 1” above the bottom of the tank and return line at the top of the tank. Hydraulic tanks shall have ball-valve shut-offs installed on pump supply line

and on both sides of return line filter. All ball valves shall be safety tie-wired to the open position.

- 3.8.5 All hoses shall be number-marked indicating component attachment and/or function, and shall correspond with indications on hydraulic schematic.
- 3.8.6 A keel cooler shall be incorporated to maintain hydraulic system temperature.
- 3.8.7 Magnetic drain plugs shall be fabricated and installed in all tanks.
- 3.8.8 Engine shall be equipped with a sealed coolant system with John Deere long-life coolant or approved equal. Heat exchange cooling shall be accomplished through the keel coolers.
- 3.8.9 Propeller shaft shall be made of stainless steel with a 2" diameter of correct strength and design for engine torque and drive system. Shaft shall be installed with a 2" Cutlass or approved equal bearing on a removable bearing housing.
- 3.8.10 Propeller shall be quality marine stainless steel shaft-through-transom dripless packing with bronze compression ring.
- 3.8.11 Propeller shall be three (3) blade brass with weedless design of appropriate diameter and pitch for engine and boat to provide the best performance for intended work as described in Section 3.2.
- 3.8.12 Ladder rungs / steps shall be installed on engine side of the firewall between cockpit and engine compartment to provide ingress and egress. Rungs will be coated with a non-slip coating or adhesive tape.
- 3.8.13 Engine compartment floor shall have a removable aluminum grate-type walk surface.
- 3.8.14 Grease fittings for shafts, bearings, sleeves, etc. shall be easily accessible for servicing. Where access is limited, a grease tube / hose with a remote grease fitting shall be installed to provide grease maintenance without removal of component covers (i.e. drive shaft thru-hull bearing, basket lifting arm cylinder base pins, etc.

### **3.9 BASKET AND WINCH**

- 3.9.1 Basket dimensions shall be 8'x 4'x 4' with recessed arms and covered with 3 lb. rated expanded metal.

- 3.9.2 Hydraulic lift cylinders shall be Yates Cylinder 303020PP-39.625 or approved equal. For maximum height lifting capability, all pivot points shall incorporate bronze bushings with pivot pin grease fittings.
- 3.9.3 Hydraulic tilt cylinders shall be Prince PMC42024 or approved equal. For maximum tilt / dumping capability, all pivot points shall incorporate bronze bushings with pivot pin grease fittings.
- 3.9.4 Basket shall be equipped with mechanical stops to limit tilt angle and prevent tilt cylinder damage.
- 3.9.5 Stainless steel hydraulic lines shall be configured and recessed within I-Beams to prevent damage.
- 3.9.6 Winch shall be hydraulic-powered Tulsa Model RN10WHRFO or approved equal. Winch shall have 10,000 lb maximum capacity with multiple speeds and free spool capability. Winch shall be configured to allow visibility to operator. Top of spool should be no more than 10½ inches above deck.
- 3.9.7 Winch compartment shall be designed and built to prevent debris from entering engine compartment (i.e.; expanded metal protection).
- 3.9.8 There shall be six (6) 2"x 12" roller type vertical cable-guide posts. Posts shall be solid round bar surrounded with replaceable pipe. Solid round bar shall have an upper washer and retainer pin/bolt and lower wear plate to prevent deck damage.
- 3.9.9 The rear plow storage steel roller shall be constructed of solid 3" x 56" round bar with ends machined to 1" diameter for pillow block bearing retention. Material and design must withstand the weight of a 1,000 pound plow.
- 3.9.10 A rear cockpit safety shield shall be made of steel and designed to protect the operator when the boat is in the towing or cutter/plow winch recovery mode of operation. It shall protect the operator from impact or whipping from a snapped/broken winch wire rope. A control shall be installed on dash to provide up-down operation.
- 3.9.11 Hydraulic valves shall be Gresen Model # V20-4 or approved equal. All hydraulic operated functions shall be momentary controls with spring return to neutral. There shall be four (4) individual valves or segments: basket raise / lower function, basket tilt / dump function, winch and cockpit safety shield. The valves shall control operational speed of each hydraulic function and shall incorporate a hydraulic pressure relief. Control locations shall be as follows:

- A. Basket lift and dump controls shall be 11 ½" port of center of steering wheel.
- B. Tow winch control shall be 22 ½" port of center of steering wheel.
- C. Safety gate control shall be 31" port of center of steering wheel.

### **3.10 HULL CORROSION PROTECTION**

The hull of these boats shall include the maximum protection from the corrosive elements to which the boats will be exposed. The awarded Bidder shall strictly adhere to the specific hull coating requirements. Patch tests of the hull above and below the water line will be conducted by County technicians to verify that the awarded Bidder has complied with the following specifications.

#### **3.10.1 SURFACE PREPARATION:**

All structural elements shall be thoroughly cleaned to remove all grease, oil and foreign material. Weld splatter, slag, flux, rust and corrosion shall be completely removed by chipping, wire brushing, shot blasting, sand blasting, etc.

#### **3.10.2 PAINT/COATING OF INTERIOR AND EXTERIOR STEEL SURFACES:**

##### **A. Primer:**

All bare steel or iron alloy surfaces that are prone to rust and corrosion shall be primed with Devoe BarRust 235, Amercoat 235 or approved equal epoxy primer and applied to a thickness of 4 to 8 mils dry film thickness. All aluminum alloy surfaces prone to corrosion shall be primed with Devoe Etching Primer or approved equal, and applied to a thickness of 2 to 4 mils dry film thickness.

##### **B. Finish Coat:**

All surfaces below the water line shall be finish coated with Devoe Bar Rust 235, Amercoat 235 or approved equal epoxy paint and applied to a thickness of 4 to 8 mils. The finish shall be Machine Grey and free from defects and imperfections.

All surfaces above the water line shall be finish coated with Devoe Devthane 379, Amercoat 450H or approved equal polyurethane and applied to a 2 to 4 mils dry film thickness. The finish shall be Machine Grey and free from defects and imperfections.

- C. Non-Skid Deck Coating: All deck areas subject to foot traffic shall have a non-skid coating such as Awlgrip-Griptex, Interlux 2398 Interthane Non Skid Additive Polymeric, or approved equal. The finish shall be

Machine Grey and free from defects and imperfections.

- D. The boats shall be guaranteed against peeling, cracking or oxidation for a period of one (1) year from date of acceptance. Refer to Section 2.12 for additional warranty information.

### **3.11 SCHEMATIC AND PICTURES OF AQUATIC WEED HARVESTER BOAT**

3.11.1 The schematic illustration is provided only for the purpose of showing a general configuration of the boat, and should not be considered a scale drawing of the boat as it is not to scale. See Exhibit A: Schematic - Aquatic Weed Harvester Boats.

3.11.2 Pictures are provided for informational purposes only. See Exhibit B: Pictures - Aquatic Weed Harvester Boats.

### **3.12 TRAINING OF DTPW EMPLOYEES**

The awarded Bidder shall provide training within fourteen (14) calendar days after the Aquatic Weed Harvester Boats are accepted by the County. The awarded Bidder's factory representative shall provide a minimum of eight hours of on-site testing and training for approximately 20 operators and technicians including, but not limited to, functionality, operation and maintenance of the boats. Training location and time will be determined by mutual agreement between the awarded Bidder and the County just prior to delivery.

### **3.13 MANUALS**

Upon delivery for each boat, the awarded Bidder shall provide the County, via hard copy, CD, jump drive or online access, the following:

3.13.1 One (1) complete set of operating manuals, detailed technical parts bulletin, schematics, engine manual, and operation and maintenance manuals, and

3.13.2 A minimum of one (1) comprehensive training manual which describes the appropriate use of the boats purchased, and

3.13.3 A minimum of one (1) comprehensive repairs and parts manual which identifies the component parts and describes the appropriate process for repairing the boats.

**SECTION 4**  
**SUBMITTAL CHECKLIST**

Reference Section	Requirements	Initial as submitted
2.3.1	Bidder shall be an Aquatic Weed Harvester Boat manufacturer or authorized dealer of the manufacturer. If the Bidder is the manufacturer, the Bidder shall submit a letter on company letterhead attesting they are the manufacturer. If the Bidder is a dealer of the manufacturer, the Bidder shall submit authenticating documentation from the manufacturer of their status as an approved dealer.	
2.3.2	Bidder shall be regularly engaged in the business of providing Aquatic Weed Harvester Boats. Bidder shall submit two (2) references which can verify that the Bidder is currently providing or has provided goods and services within the past five (5) years similar to what is described in this bid solicitation.	
	<p>1) Reference Name: <u>Phil White</u></p> <p>Company Name: <u>South Florida Water Management District</u></p> <p>Address: <u>3301 Gun Club Rd, West Palm Beach, FL 33406</u></p> <p>Title: <u>Senior Fleet Analyst</u> Phone Number: <u>561-682-2182</u></p> <p>E-mail Address: <u>pwhite@sfwmd.gov</u></p> <p>Length of Business Relationship: <u>20 Years</u></p> <p>2) Reference Name: <u>Manuel Hervis</u></p> <p>Company Name: <u>Miami-Dade County PWD</u></p> <p>Address: <u>9301 NW 58th Street Miami, Florida 33178</u></p> <p>Title: <u>PWD Superintendent</u> Phone Number: <u>305-592-3116</u></p> <p>E-mail Address: <u>manny.hervis@miamidade.gov</u></p> <p>Length of Business Relationship: <u>14 Years</u></p>	

2.3.3	<p>Bidder shall have and provide contact information of its local representative in the South Florida Tri-county region (Palm Beach, Broward and Miami-Dade Counties) that will be used to perform warranty repairs and services.</p> <p>Reference Name: <u>John Heneghan</u></p> <p>Title: <u>Branch Manager</u></p> <p>Company Name: <u>Great Lakes Power</u></p> <p>Address: <u>9955 NW 116th Way, Suite 5 Medley, Florida 33178</u></p> <p>Phone Number: <u>305-885-0707</u></p> <p>E-mail Address: <u>jheneghan@glpower.com</u></p>	
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Submittal Form

Solicitation No.		Solicitation Title:	
Bidder's Legal Company Name (include d/b/a if applicable): D&D Products Inc. DBA Aquarius **		Bidder's Federal Tax Identification Number: 39-1053448 **	
If Corporation - Date Incorporated/Organized: 02/24/1966		State Incorporated/Organized: Wisconsin **	
Company Operating Address: 200 North Harrison Street **		City North Prairie **	State WI **
Miami-Dade County Address (if applicable):		City	State Zip Code
Company Contact Person: Nicholas Ward **		Email Address: nickw@aquarius-systems.com **	
Phone Number (include area code): 262-392-2162 **		Company's Internet Web Address: www.aquarius-systems.com	

Miami-Dade County

BidSync

Pursuant to Section 2-8.6 of the Code of Miami-Dade County (County), any individual, corporation, partnership, joint venture or other legal entity having an officer, director, or executive who has been convicted of a felony during the past ten (10) years shall disclose this information prior to entering into a contract with or receiving funding from the County.

Place a check mark here **only** if the Bidder has such conviction to disclose to comply with this requirement.

**LOCAL PREFERENCE CERTIFICATION:** For the purpose of this certification, and pursuant to Section 2-8.5 of the Code of Miami-Dade County, a "local business" is a business located within the limits of Miami-Dade County that has a valid Local Business Tax Receipt issued by Miami-Dade County at least one year prior to bid submission; has a physical business address located within the limits of Miami-Dade County from which business is performed and which served as the place of employment for at least three full time employees for the continuous period of one year prior to bid submittal (by exception, if the business is a certified Small Business Enterprise, the local business location must have served as the place of employment for one full time employee); and contributes to the economic development of the community in a verifiable and measurable way. This may include, but not be limited to, the retention and expansion of employment opportunities and the support and increase to the County's tax base.

Place a check mark here **only** if affirming the Bidder meets the requirements for Local Preference. **Failure to affirm this certification at this time may render the Bidder ineligible for Local Preference.**

IN ACCORDANCE WITH CFR 200.319(b), LOCAL PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASE.

**LOCALLY-HEADQUARTERED BUSINESS CERTIFICATION:** For the purpose of this certification, and pursuant to Section 2-8.5 of the Code of Miami-Dade County, a "locally-headquartered business" is a Local Business whose "principal place of business" is in Miami-Dade County.

Place a check mark here **only** if affirming the Bidder meets the requirements for the Locally-Headquartered Preference (LHP). **Failure to affirm certification at this time may render the Bidder ineligible for the LHP.**

*The address of the Locally-Headquartered office is:*

IN ACCORDANCE WITH CFR 200.319(b), LOCALLY-HEADQUARTERED BUSINESS PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASE.

**LOCAL CERTIFIED VETERAN BUSINESS ENTERPRISE CERTIFICATION:** A Local Certified Veteran Business Enterprise is a firm that is (a) a local business pursuant to Section 2-8.5 of the Code of Miami-Dade County; and (b) prior to bid submission is certified by the State of Florida Department of Management Services as a veteran



<b>Bidder's Authorized Representative's Signature:</b>  Nicholas Ward                      **	<b>Date</b>  03/30/2020                      **
<b>Representative's Name:</b>  Nicholas Ward                      **	
<b>Representative's Title:</b>  Technical Sales Representative                      **	

Please enter your password below and click Save to update your response.

Please be aware that typing in your password acts as your electronic signature, which is just as legal and binding as an original signature. (See [Electronic Signatures in Global and National Commerce Act](#) for more information.)

By completing this form, your bid has not yet been submitted. Please click on the place offer button to finish filling out your bid.

Username **janed@aquarius-systems.com**

Password \*

Save

Close

\* Required fields

# Supplier Response Form

## Miami-Dade County Contractor Due Diligence Affidavit

Per Miami-Dade County Board of County Commissioners (Board) Resolution No. R-63-14, County Vendors and Contractors shall disclose the following as a condition of award for any contract that exceeds one million dollars (\$1,000,000) or that otherwise must be presented to the Board for approval:

- (1) Provide a list of all lawsuits in the five (5) years prior to bid or proposal submittal that have been filed against the firm, its directors, partners, principals and/or board members based on a breach of contract by the firm; include the case name, number and disposition;
- (2) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has defaulted; include a brief description of the circumstances;
- (3) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has been debarred or received a formal notice of non-compliance or non-performance, such as a notice to cure or a suspension from participating or bidding for contracts, whether related to Miami-Dade County or not.

All of the above information shall be attached to the executed affidavit and submitted to the Procurement Contracting Officer (PCO)/ AE Selection Coordinator overseeing this solicitation. The Vendor/Contractor attests to providing all of the above information, if applicable, to the PCO.

**Contract No. :** FB-01332      **Federal Employer Identification Number (FEIN):** 39-1053448

**Contract Title:** Aquatic Weed Harvester Boats

Nicholas Ward      Technical Sales Repre      Nicholas Ward  
Printed Name of Affiant      Printed Title of Affiant      Signature of Affiant

D&D Products Inc. Aquarius Systems Div      04/10/2020  
Name of Firm      Date

200 North Harrison Street, North Prairie, WI      53153  
Address of Firm      State      Zip Code

### Notary Public Information

Notary Public – State of Wisconsin County of Waukesha

*Subscribed and sworn to* (or affirmed) before me this 10<sup>th</sup> day of April 2020

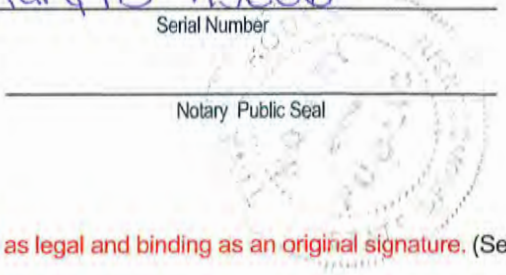
by \_\_\_\_\_ He or she is personally known to me or has produced identification

Type of identification produced \_\_\_\_\_

Tina L Roder  
Signature of Notary Public

Notary ID 113606  
Serial Number

Tina L Roder      3/19/22  
Print or Stamp of Notary Public      Expiration Date



**Please enter your password below and click Save to update your response.**

**Please be aware that typing in your password acts as your electronic signature, which is just as legal and binding as an original signature.** (See [Electronic Signatures in Global and National Commerce Act](#) for more information.)

By completing this form, your bid has not yet been submitted. Please click on the place offer button to finish filling out your bid.

Username **janed@aquarius-systems.com**

Miami-Dade County

BidSync

4/13/2020

### Supplier Response Form

Solicitation Number FB-01332

\* Vendor Name D&D Products Inc. DBA Aquarius System \*

\* FEIN # 39-1053448 \*

Complete "A" or "B":

A.  No subcontractors or direct suppliers will be utilized pursuant to this solicitation.

B.  The below listed subcontractors and/or suppliers will be utilized pursuant to this solicitation:

Business Name and Address of First Tier Subcontractor/ Subconsultant	Name of Principal Owner	Scope of Work to be Performed by Subcontractor /Subconsultant	Subcontractor / Subconsultant License (if applicable)
Symet Inc. 3282 N. 35th St. Milwaukee,	Stacey Ash	Paint	
Heckel Tool & Mfg. W356s8920 Godfrey I	Lori Heckel	Machined Parts	
Business Name and Address of First Tier Direct Supplier	Name of Principal Owner	Supplies, Materials, and/or Services to be Provided by Supplier	
Superior Diesel, 3250 S Fox Ranch Rd, R	Richard Freeman	Engine	
Palmer Johnson Power Systems, 1835 H:	Mike Kelsey	Transmission	
Applied Industrial Technologies, 11701 V	Neil Schrimsher-CEO Publicly Held Corp.	Industrial Components	
Russel Metals, 999 W Armour Ave, Milwa	John Reid- CEO Publicly Held Corp.	Steel Supplier	

And

Below and/or attached is a detailed statement of the firm's policies and procedures for awarding subcontractors:

See attached SOP 400-7.4.1

(Duplicate this form if additional space is needed to provide the required information)

When Subcontracting is allowed and subcontractors will be utilized, the Contractor shall comply with Section 2-8.8 of the Code – Fair Subcontracting Practices: (1) Prior to contract award, the Bidder shall provide a detailed statement of its policies and procedures for awarding subcontracts and (2) As a condition of final payment under a contract, the Contractor shall identify subcontractors used in the work, the amount of each subcontract, and the amount paid and to be paid to each subcontractor via the BMWS at <http://mdcsbd.gob2q.com>.

Pursuant to Section 2-8.1(f) of the Code – Listing of subcontractors required on certain contracts, for all contracts which involve the expenditure of one hundred thousand dollars (\$100,000) or more, the entity contracting with the County must report to the County the race, gender, and ethnic origin of the owners and employees of its first tier subcontractors and suppliers via the BMWS at <http://mdcsbd.gob2q.com>. The race, gender, and ethnic information must be submitted via BMWS as soon as reasonably available and, in any event, prior to final payment under the Contract. The Contractor shall not change or substitute first tier subcontractors or direct suppliers or the portions of the Contract work to be performed or materials to be supplied from those identified except upon written approval of the County.

I certify that the information contained in this form is to the best of my knowledge true and accurate.

Nicholas Ward

Nicholas Ward

Technical Sales Representat

04/01/2020

\* Signature of Vendor's Representative

\* Print Name

\* Print Title

\* Date

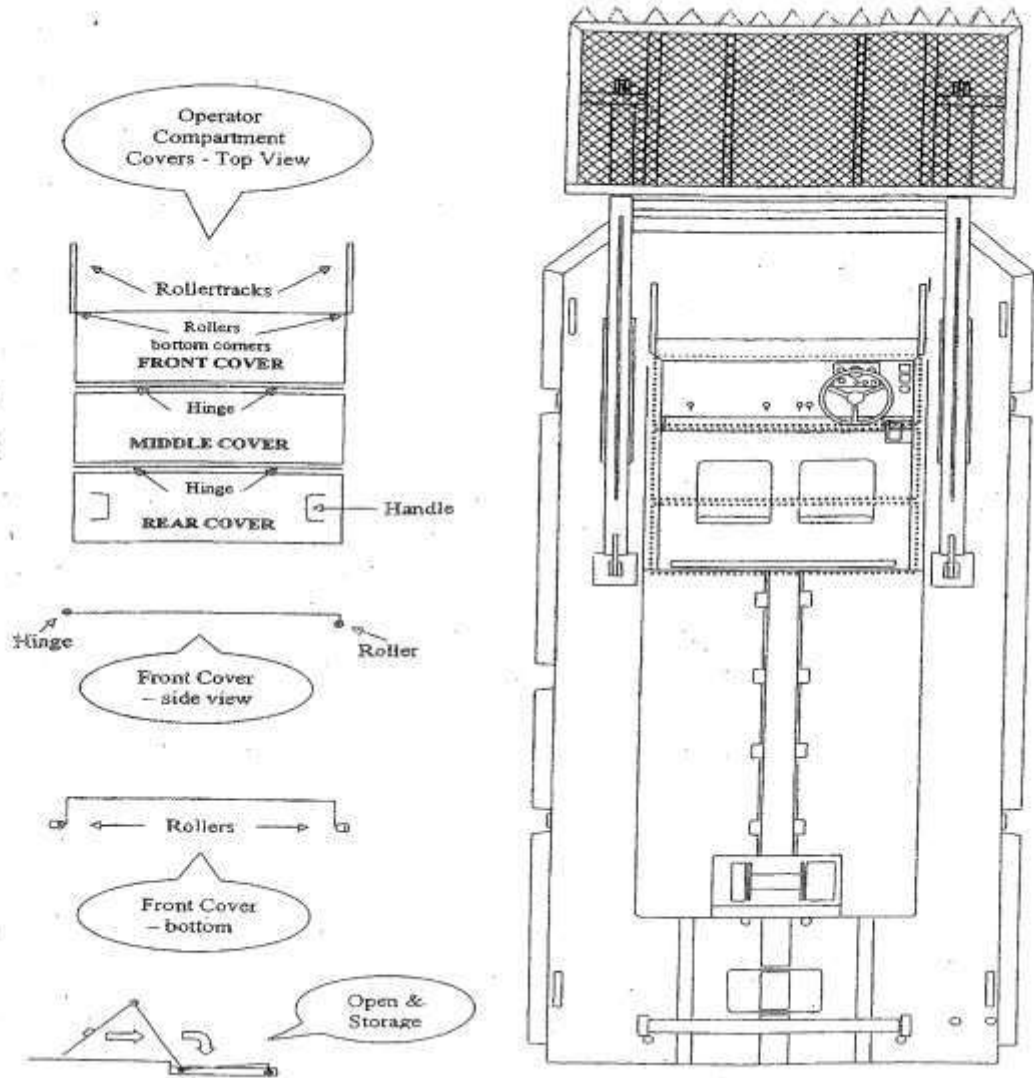
Please enter your password below and click Save to update your response.

Please be aware that typing in your password acts as your electronic signature, which is just as legal and binding as an original signature. (See [Electronic Signatures in Global and National Commerce Act](#) for more information.)

By completing this form, your bid has not yet been submitted. Please click on the place offer button to finish filling out your bid.

### EXHIBIT A

### Schematic - Aquatic Weed Harvester Boats



**EXHIBIT B**

**Pictures - Aquatic Weed Harvester Boats**

**Boat Picture #1**



**Boat Picture #2**



**Boat Picture #3**



**Boat Picture #4**



**Boat Picture #5**



**Boat Picture #6**



**Boat Picture #7**



**Boat Picture #8**



**Boat Picture #9**



**Boat Picture #10**



**Boat Picture #11**



**Boat Picture #12**



**Boat Picture #13**



**Boat Picture #14**



**Boat Picture #15**



**Boat Picture #16**



**Boat Picture #17**



**Boat Picture #18**



**Boat Picture #19**



MIAMI-DADE  
COUNTY

## Question and Answers for Solicitation #FB-01332 - Aquatic Weed Harvester Boats

### Overall Solicitation Questions

There are no questions associated with this Solicitation.

Question Deadline: Apr 2, 2020 6:00:00 PM EDT

# weed tow boats



Weed Tow Boats offer the perfect solution to nuisance aquatic vegetation in deep water canals.

Outfitted with a plow that is lowered off the stern and dragged along the channel bottom, Weed Tow Boats rip vegetation loose at the roots. The severed weeds quickly float to the surface where they are scooped up in the front end loader, then deposited on shore for disposal.

The Weed Tow Boats have a very low profile and narrow width, making it highly maneuverable in tight confines with overhead obstructions.



PO Box 215 | 200 N Harrison Street | North Prairie | Wisconsin | 53153 USA  
| P 262-392-2162 | T 800-328-6555 | F 262-392-2984  
info@aquarius-systems.com | www.aquarius-systems.com

# weed tow boats



A hydraulic winch lifts and lowers the plow into the canal. It is dragged along the bottom to loosen plants.



Four lifting eyes make launch and retrieval an easy task.



After the weeds float up to the surface they are skimmed into the basket. The basket unloads the vegetation onto the canal bank.



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 info@aquarius-systems.com | www.aquarius-systems.com

# weed tow boats

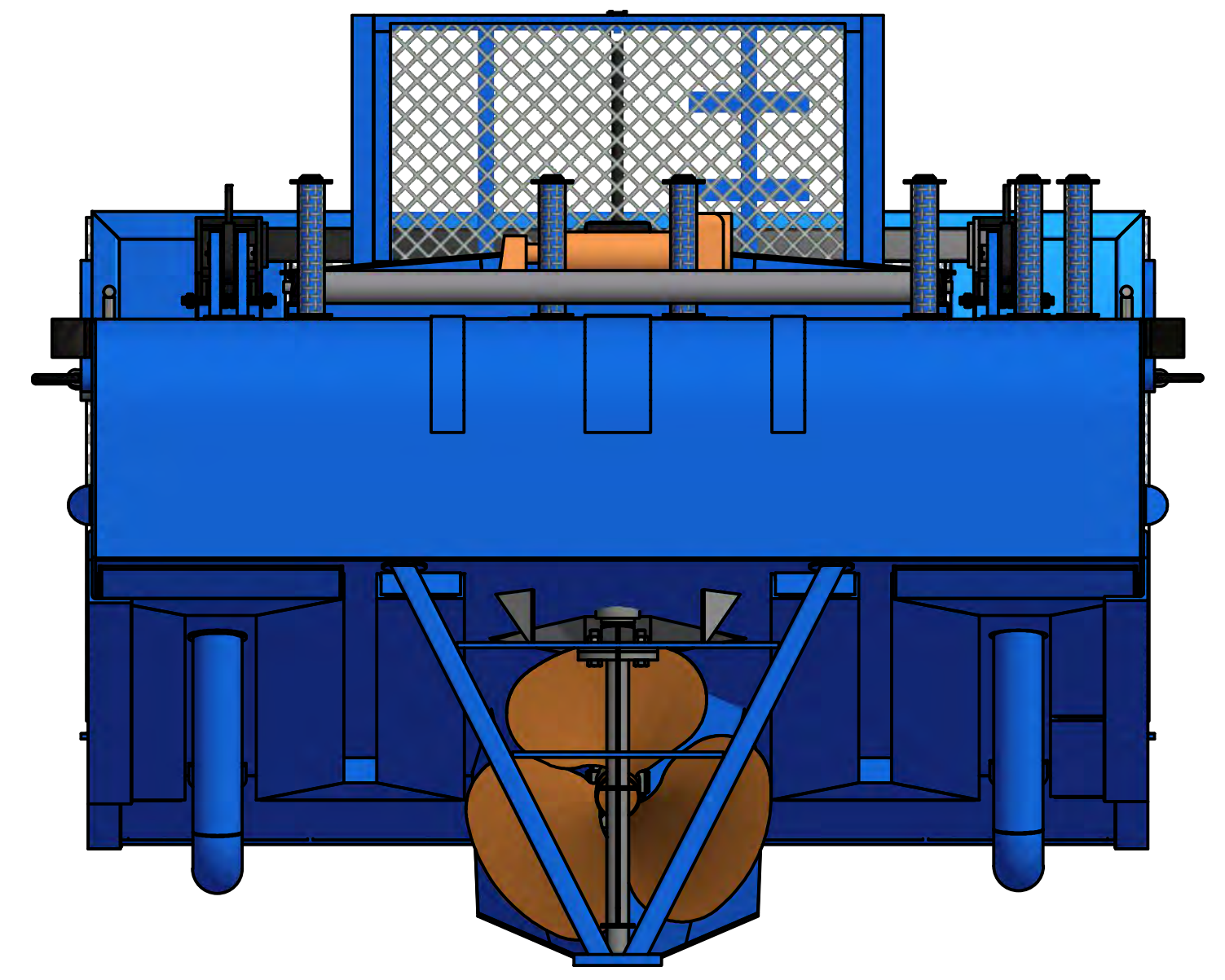
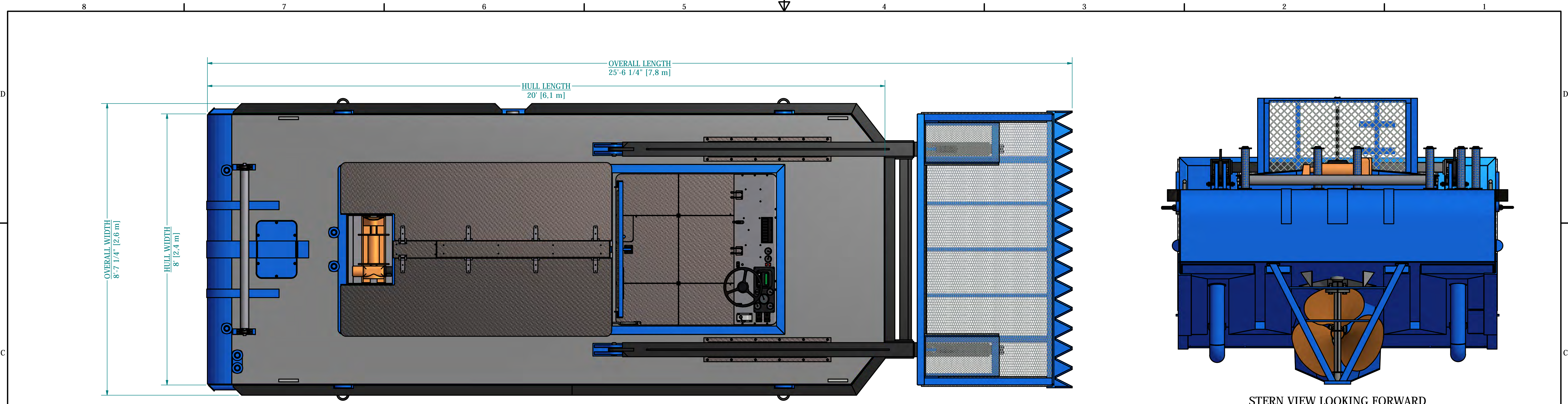


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| P 262-392-2162 | T 800-328-6555 | F 262-392-2984  
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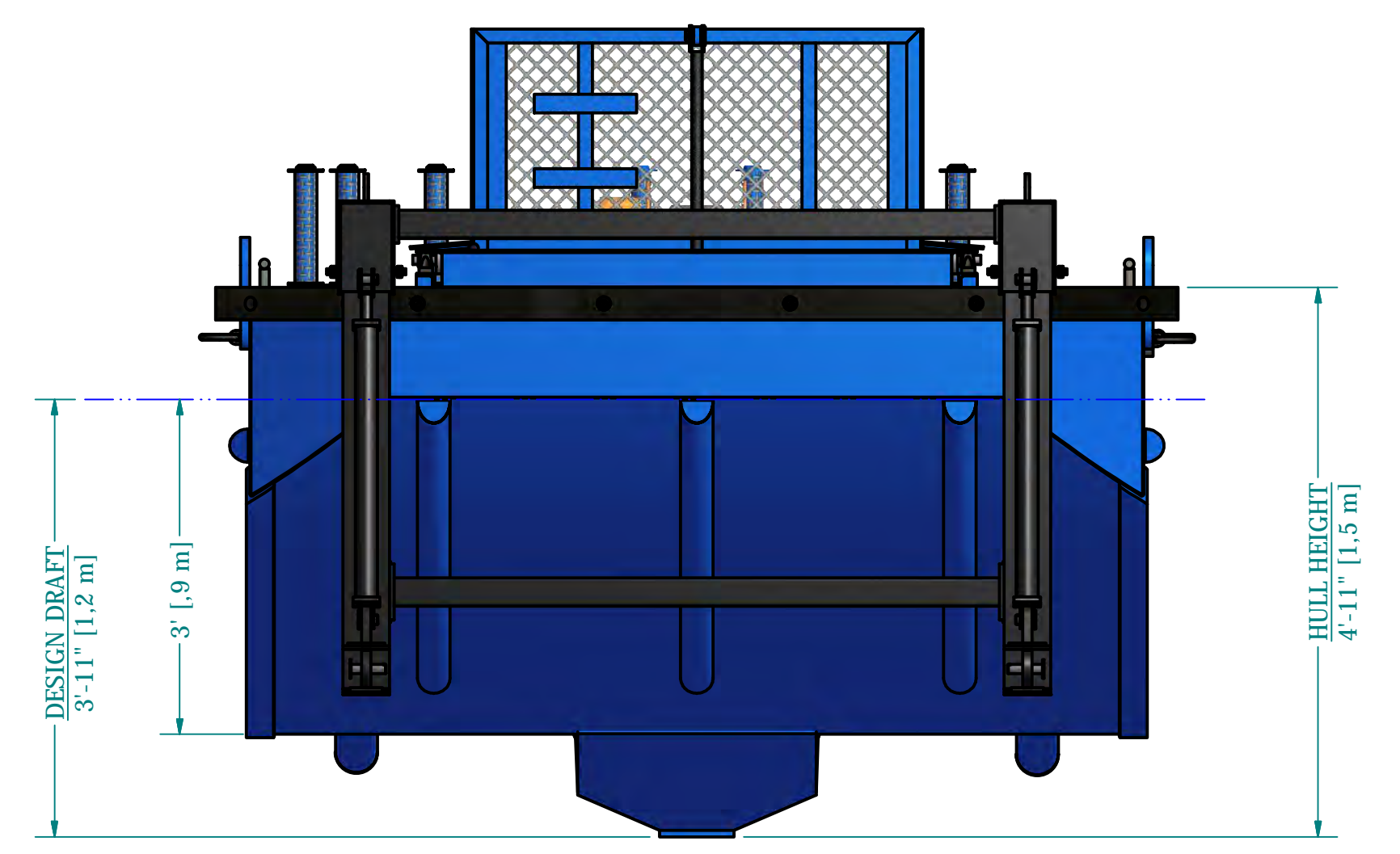
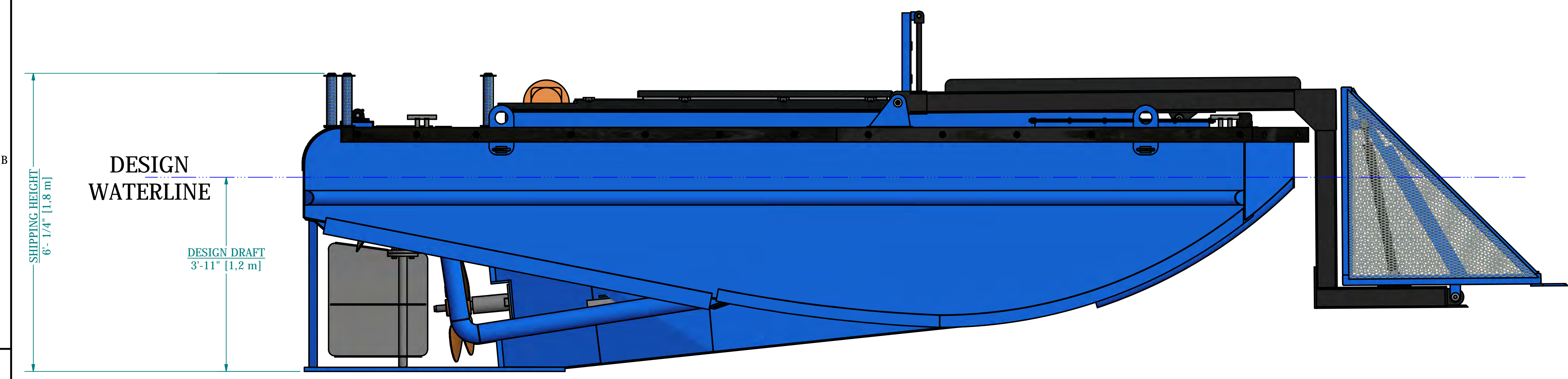
## WT-34 WEED TOW BOAT

SPECIFICATIONS		IMPERIAL	METRIC
DIMENSIONS	Shipping / Operating Length	25' 5"	7,74 meters
	Shipping / Operating Width	8' 7" <i>(with rub rails)</i>	2,62 meters <i>(with rub rails)</i>
	Operating Height	24" above the waterline	0,61 meters above the waterline
	Shipping Height	6' 0"	1,83 meters
	Overall Weight	19,600 lb	8890 kg
FLOTATION	Hull Style	Porpoise style hull with steering skeg	Porpoise style hull with steering skeg
	Hull Dimensions: L / W / H	20' 0" long / 8' 0" beam / 6' 0" tall	6,10 m long / 2,44 m beam / 1,19 m tall
	Draft	3' 11"	1,19 meters
POWER SOURCE	Standard Engine	John Deere PowerTech™ 4045AFM85 Diesel	John Deere PowerTech™ 4045AFM85 Diesel
	Engine Rating	160 HP @ 2300 RPM	119 kW @ 2300 RPM
	Engine Protection	Low oil & high temperature shutdown, integrated ventilation system, 2000 GPH bilge pump	Low oil & high temperature shutdown, integrated ventilation system, 7570 LPH bilge pump
	Fuel Capacity	90 U.S. gallons, (2 tanks - port & starboard)	340 liters, (2 tanks - port & starboard)
	Electrical System	12 volt, marine grade battery & circuit breakers	12 volt, marine grade battery & circuit breakers
	Engine Compartment	Self-contained, waterproof, with lockable hatch covers & ridge vent	Self-contained, waterproof, with lockable hatch covers & ridge vent
	Fire Protection System	<b>Fire boy</b> suppression system	<b>Fire boy</b> suppression system
HYDRAULICS	Hydraulic System	Gear pump system	Gear pump system
	Hydraulic Oil	Clarion 68 - environmentally safe, marine grade	Clarion 68 - environmentally safe, marine grade
	Hydraulic Reservoir Capacity	52 U.S. gallons with temperature & level gauge (2 tanks - port & starboard)	196 liters with temperature & level gauge (2 tanks - port & starboard)
	Hydraulic System Protection	Relief valves, sensors, keel coolers	Relief valves, sensors, keel coolers
COCKPIT	Operator Compartment	Self-contained, waterproof, lockable hatch covers	Self-contained, waterproof, lockable hatch covers
	Controls	Skeg steering with rudder, separate hydraulic system controls	Skeg steering with rudder, separate hydraulic system controls
	Instrumentation	Control panel with full dash gauges with warning indicators, audible alarms, etc.	Control panel with full dash gauges with warning indicators, audible alarms, etc.
	Operator Amenities	Two pedestal seats, padded console, electric fan	Two pedestal seats, padded console, electric fan
COLLECTION BASKET	Basket Dimensions	8' 0" x 4' 0" x 4' 0"	2,44 x 1,22 x 1,22 meters
	Basket Capacity	52 cubic feet	1,47 cubic meters
	Collection Depth with Basket	3' 0" maximum	0,91 meters
	Unloading Height	7' 0" maximum	2,13 meters
WEED PLOW & WINCH	Weed Plow, Design	'A' frame design constructed of ½" I-beams with 1" front pulling bar	'A' frame design constructed of 12,7 mm I-beams with 25 mm front pulling bar
	Cutting Depth, Variable	4' 0" to 20' 0" <i>(with towed weed plow)</i>	1,22 to 6,10 meters <i>(with towed weed plow)</i>
	Plow Towing Winch	10,000 lb. line pull hydraulic winch	4536 kg line pull hydraulic winch
	'A' Frame Plow Storage Cradle & Rollers	On vessel stern, for storage when not in use	On vessel stern, for storage when not in use
PROPULSION	Propulsion System	Twin Disc MG-5061-SC Transmissions	Twin Disc MG-5061-SC Transmissions
	Propeller	Three blade brass prop	Three blade brass prop
FABRICATION	Hull Material	A131 AH-36 carbon steel, 5/16" plate bottom/sides	A131 AH-36 carbon steel, 95 mm plate bottom/sides
	Basket Frame Material	Carbon steel	Carbon steel
	Fasteners	Stainless steel 18/8 throughout	Stainless steel 18/8 throughout
FINISH	Preparation	Abrasive sandblast, epoxy primer	Abrasive sandblast, epoxy primer
	Paint Formulation	High quality polyurethane	High quality polyurethane
	Non-Skid Deck Coating	Griptex™ on all deck areas subject to foot traffic	Griptex™ on all deck areas subject to foot traffic
	Color	Machine Grey	Machine Grey

*The policy of our company is one of continual improvement and we reserve the right to change specifications without notice.*

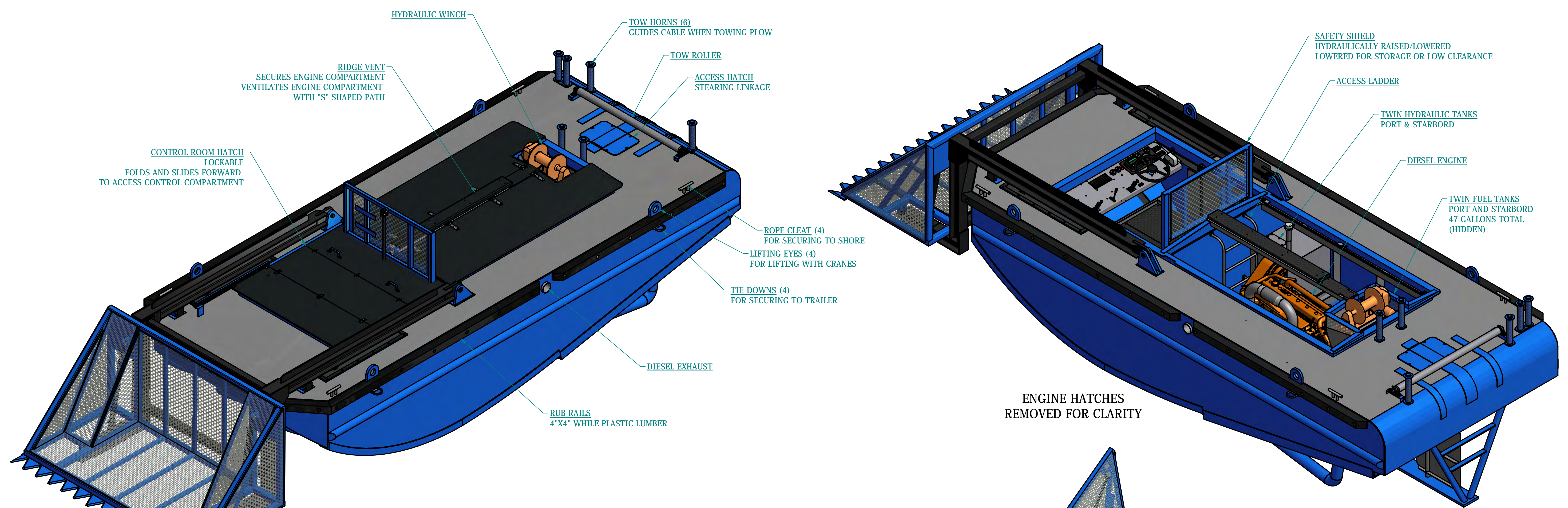


STERN VIEW LOOKING FORWARD

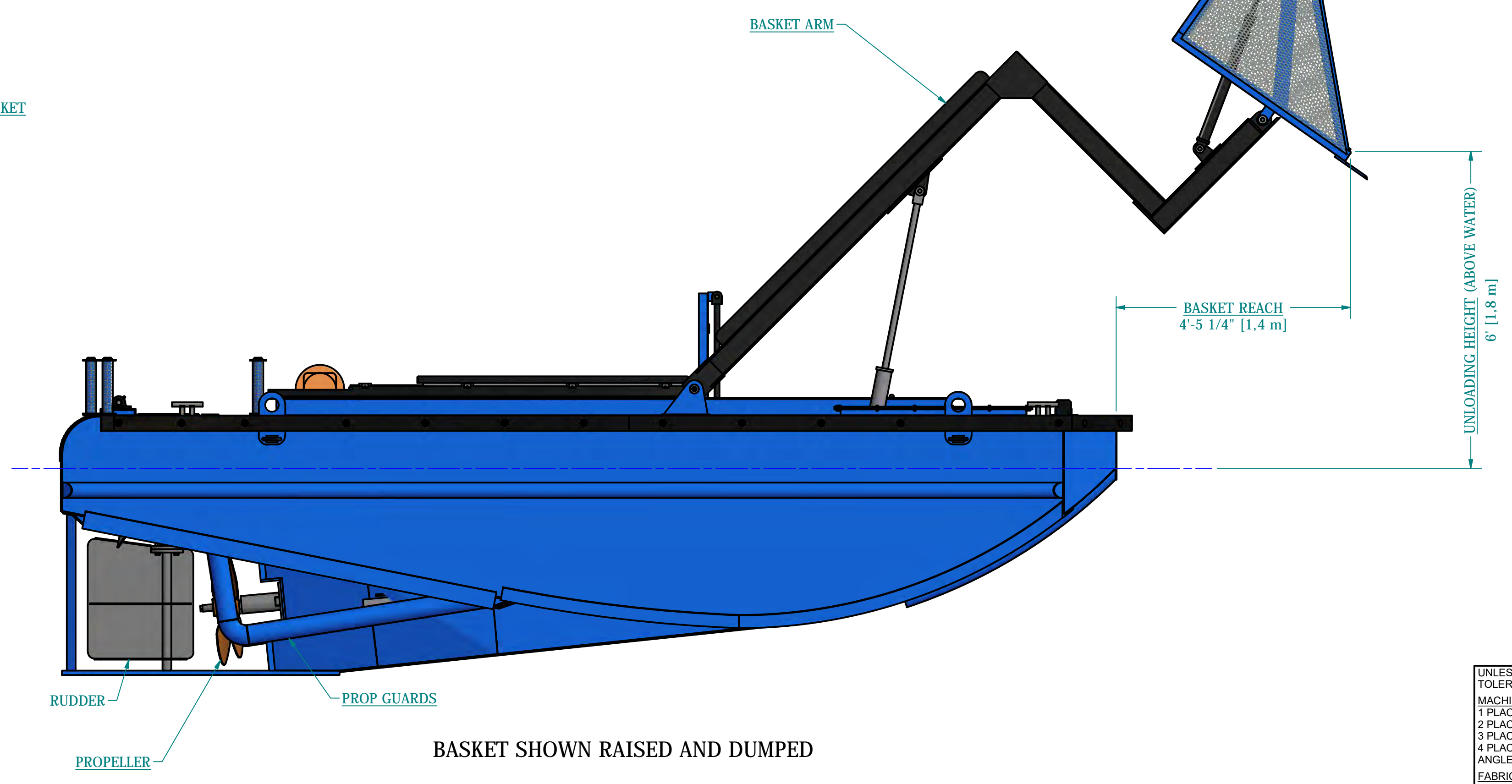


BOW VIEW LOOK AFT  
 (BASKET REMOVED FOR CLARITY)

UNLESS OTHERWISE SPECIFIED, ALL TOLERANCES ARE AS NOTED BELOW:		MATERIAL		<b>AQUARIUS SYSTEMS</b> <small>A Division of D&amp;D Products, Inc.</small>	
MACHINING OPERATIONS: 1 PLACE X.X ±.030 2 PLACE X.XX ±.015 3 PLACE X.XXX ±.005 4 PLACE X.XXXX ±.0005 ANGLES ± 1/2°		DRAWN: michael 12/18/2014 APPROVED BY:			
FABRICATION OPERATIONS: 1 PLACE X.X ±.125 2 PLACE X.XX ±.060 3 PLACE X.XXX ±.030 4 PLACE X.XXXX ±.015 ANGLES ± 1°		PROPRIETARY NOTICE THIS PRINT REMAINS THE PROPERTY OF D&D PRODUCTS, INC. AQUARIUS SYSTEMS DIV. INFORMATION CONTAINED THEREON IS CONFIDENTIAL IF LOANED. SUBJECT TO RETURN UPON DEMAND AND EXPRESSED CONDITION THAT IT IS NOT TO BE COPIED OR USED DIRECTLY OR INDIRECTLY IN ANY WAY WITHOUT WRITTEN AUTHORITY FROM D&D PRODUCTS, INC. AQUARIUS SYSTEMS DIV.		TITLE: <b>WT-34 GENERAL ARRANGEMENT</b> PROJECT: WT-34 SIMILAR TO: SIZE: D DWG NO: 1871 REV: 0 SCALE: NTS WEIGHT: N/A SHEET 1 of 2	



ENGINE HATCHES  
REMOVED FOR CLARITY

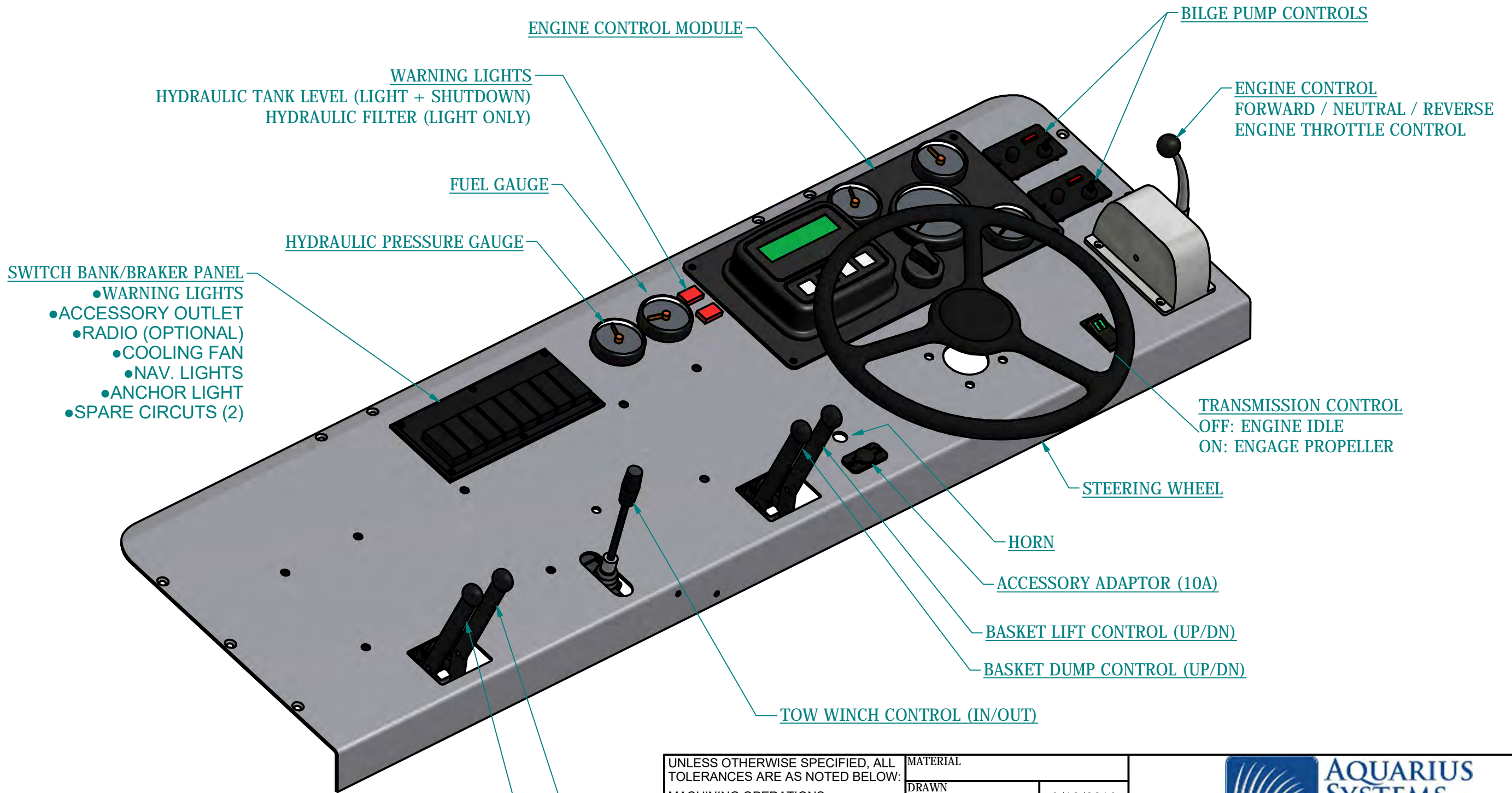


BASKET SHOWN RAISED AND DUMPED

UNLESS OTHERWISE SPECIFIED, ALL TOLERANCES ARE AS NOTED BELOW:		MATERIAL		APPROVED BY		DRAWN		DATE	
MACHINING OPERATIONS:		1 PLACE X.X ±.030		michael		12/18/2014		12/18/2014	
2 PLACE X.XX ±.015		3 PLACE X.XXX ±.005		PROPRIETARY NOTICE		THIS PRINT REMAINS THE PROPERTY OF		D&D PRODUCTS, INC. AQUARIUS SYSTEMS DIV.	
4 PLACE X.XXXX ±.0005		ANGLES ± 1/2°		INFORMATION CONTAINED THEREIN IS		CONFIDENTIAL IF LOANED. SUBJECT TO RETURN		UPON DEMAND AND EXPRESSED CONDITION THAT	
FABRICATION OPERATIONS:		1 PLACE X.X ±.125		IT IS NOT TO BE COPIED OR USED DIRECTLY OR		INDIRECTLY IN ANY WAY WITHOUT WRITTEN		AUTHORITY FROM D&D PRODUCTS, INC.	
2 PLACE X.XX ±.060		3 PLACE X.XXX ±.030		AQUARIUS SYSTEMS DIV.		PROJECT		WT-34	
4 PLACE X.XXXX ±.015		ANGLES ± 1°		SCALE		NTS		WEIGHT N/A	
TITLE		WT-34 GENERAL ARRANGEMENT		SIMILAR TO		SIZE		DWG NO	
PROJECT		WT-34		SCALE		NTS		1871	
REV		0		SHEET		2		OF 2	



# WT-34 CONTROL LAYOUT



UNLESS OTHERWISE SPECIFIED, ALL TOLERANCES ARE AS NOTED BELOW:


**MACHINING OPERATIONS:**

1 PLACE X.X	±.030
2 PLACE X.XX	±.015
3 PLACE X.XXX	±.005
4 PLACE X.XXXX	±.0005
ANGLES ± 1/2°	

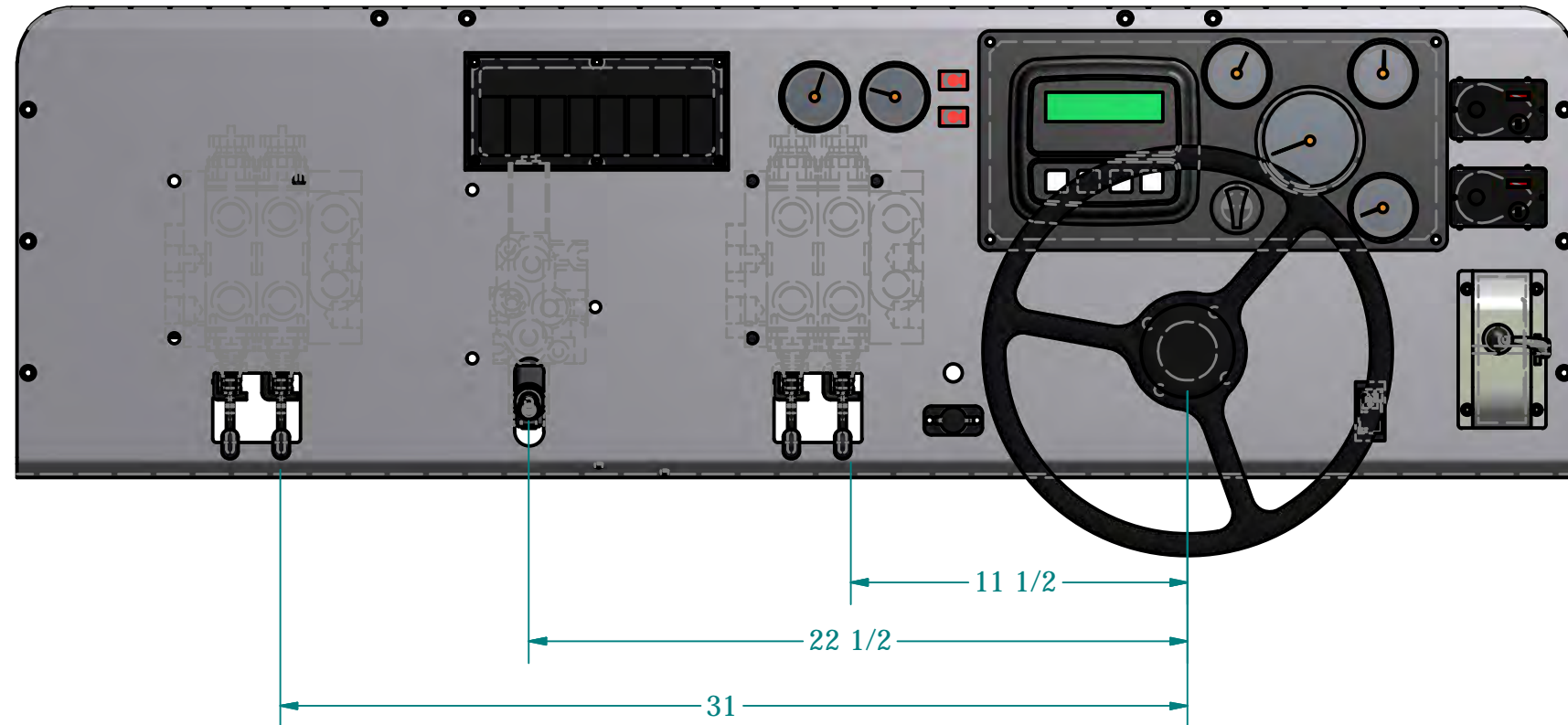
**FABRICATION OPERATIONS:**

1 PLACE X.X	±.125
2 PLACE X.XX	±.060
3 PLACE X.XXX	±.030
4 PLACE X.XXXX	±.015
ANGLES ± 1°	

MATERIAL	
DRAWN <b>MIKE PETERMAN</b>	6/10/2016
APPROVED BY	
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<b>WT-34 CONTROL LAYOUT</b>			
PROJECT		SIMILAR TO	
WT-34			
SIZE	DWG NO	REV	
B	3327	0	
SCALE	WEIGHT	SHEET 1 OF 2	
NTS	N/A		

# CONTROL LOCATIONS



UNLESS OTHERWISE SPECIFIED, ALL TOLERANCES ARE AS NOTED BELOW:

**MACHINING OPERATIONS:**

- 1 PLACE X.X ±.030
- 2 PLACE X.XX ±.015
- 3 PLACE X.XXX ±.005
- 4 PLACE X.XXXX ±.0005
- ANGLES ± 1/2°

**FABRICATION OPERATIONS:**

- 1 PLACE X.X ±.125
- 2 PLACE X.XX ±.060
- 3 PLACE X.XXX ±.030
- 4 PLACE X.XXXX ±.015
- ANGLES ± 1°

**MATERIAL**

DRAWN  
**MIKE PETERMAN** 6/10/2016

APPROVED BY

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TITLE  
**WT-34 CONTROL LAYOUT**

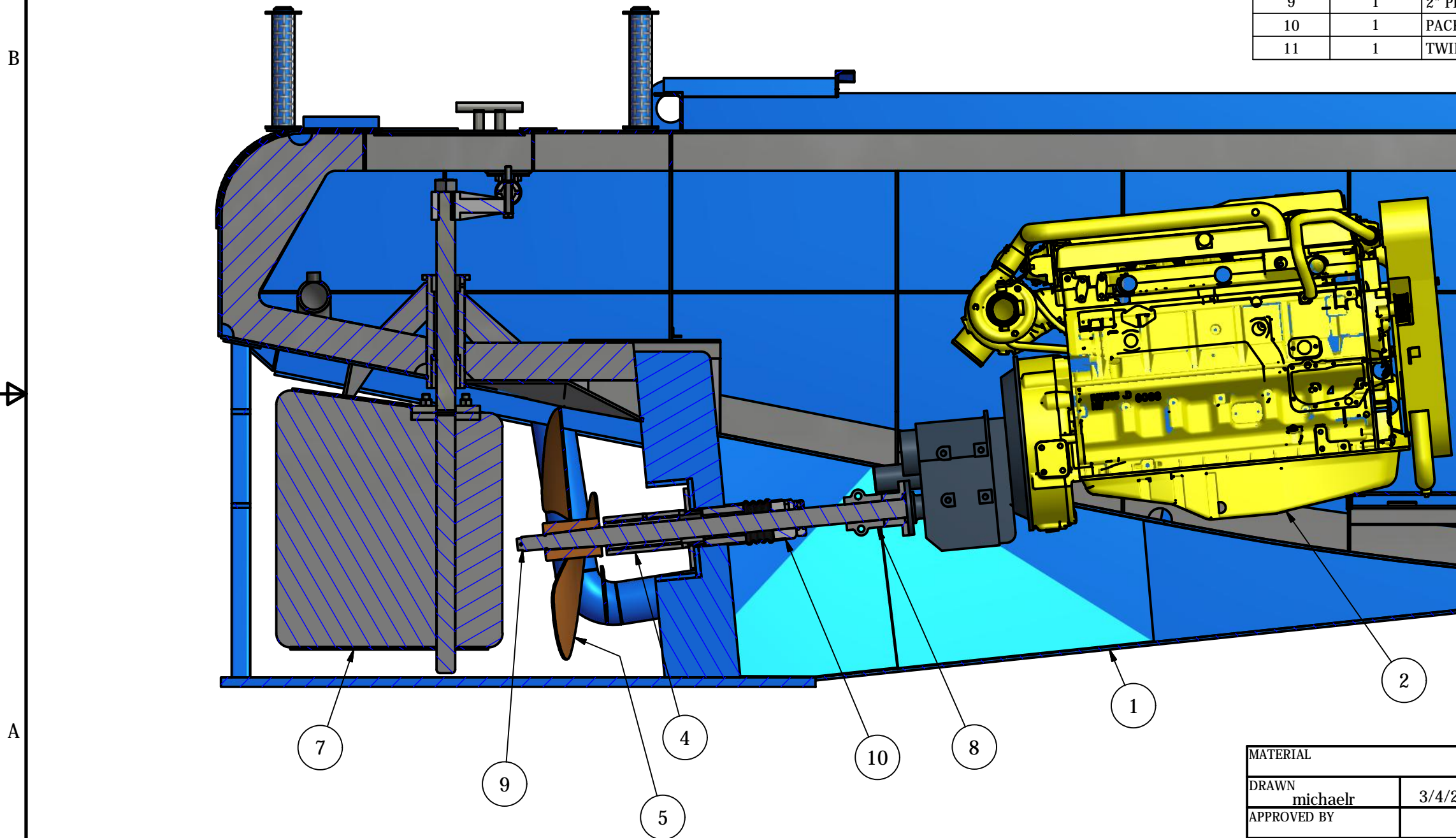
PROJECT **WT-34** SIMILAR TO

SIZE **B** DWG NO **3327** REV **0**

SCALE **NTS** WEIGHT **N/A** SHEET **2** OF **2**

# ENHANCED DRIVE SHAFT DETAIL

ITEM	QTY	TITLE	PART NUMBER
1	1	WT-34 HULL WELDMENT	1490
2	1	JOHN DEERE TURBO DIESEL ENGINE	
4	1	WT34 PROPELLER BEARING HOUSING (REMOVABLE)	0071
5	1	3 BLADE WEEDLESS PROP	P-1122
6	1	CUTLESS BRG	PB-986
7	1	RUDDER DRIVE ASSEMBLY	1499
8	1	COUPLING - GEARBOX	3319
9	1	2" PROP SHAFT - WT-34	3320
10	1	PACKLESS SEAL SYSTEM	DRIPLESS
11	1	TWIN DISC TRANSMISSION	P-1247



**DESIGN INCLUDES:**  
 2" PROP SHAFT  
 REMOVABLE 2" CUTLASS BEARING HOUSING  
 PACKLESS SEAL SYSTEM  
 CLAMP STYLE SHAFT COUPLING


**IMPROVED SHAFT/GEARBOX COUPLING DESIGN:**

- COUPLING DIAMETER INCREASED FROM 1-3/4" TO 2"
- IMPROVES SHAFT DESIGN SAFETY FACTOR BY +50%
- ELIMINATES THE STEP IN DRIVE SHAFT (ELIMINATES STRESS RISER)
- NEW CLAMP-STYLE COUPLING REPLACE FLOATING COUPLING DESIGN (REDUCES KEYWAY FAILURE)

**IMPROVED SHAFT SEAL:**

- PACKING GLAND SHAFT SEAL CAN BE UPGRADED TO A DRIPLESS SEAL SYSTEM

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MATERIAL		 AQUARIUS SYSTEMS <small>A Division of D&amp;D Products Inc.</small>		
DRAWN michaerl	3/4/2015			
APPROVED BY		TITLE WT-34 FINAL DRIVE DETAIL		
		PROJECT WT-34 WEED TOW BOAT		
		SIZE B	DWG NO 3318	REV
TOL. -1/32" UNLESS OTHERWISE NOTED	SCALE NTS	WEIGHT N/A	SHEET 1 OF 1	

FORMULA FOR SHAFT SAFETY FACTOR

$$S.F. = \frac{(D^3)(S_t)(N)}{321,000 (P)}$$

DRIVE SHAFT:

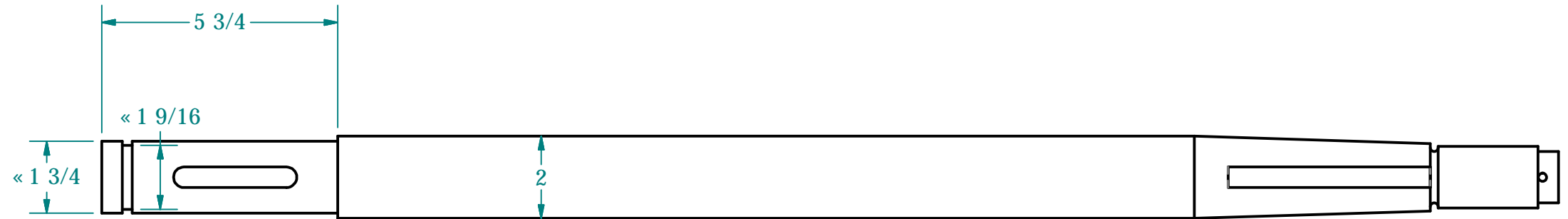
MAT'L: AQUAMET 19  
 YEILD STRENGTH (TORSION) = 40,000 KSI

ENGINE:

DEERE 4045AFM85  
 180 HP @ 2400 RPM

ORIGINAL SHAFT

D = 1.75" (SHAFT DIA)  
 S<sub>t</sub> = 40,000 KSI (YIELD STRENGTH, TORSION)  
 N = 2,400 RPM (SHAFT SPEED)  
 P = 180 Hp (ENGINE POWER)

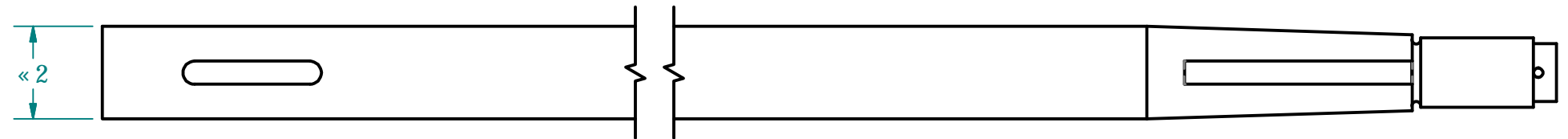


ORIGINAL SHAFT

$$S.F. = \frac{(1.75^3)(40,000)(2400)}{321,000 (180)} = 8.9$$

PROPOSED SHAFT

D = 2.0" (SHAFT DIA)  
 S<sub>t</sub> = 40,000 KSI (YIELD STRENGTH, TORSION)  
 N = 2,400 RPM (SHAFT SPEED)  
 P = 180 Hp (ENGINE POWER)




PROPOSED SHAFT

$$S.F. = \frac{(2.0^3)(40,000)(2400)}{321,000 (180)} = 13.3$$

50% IMPROVEMENT IN DESIGN SAFETY FACTOR

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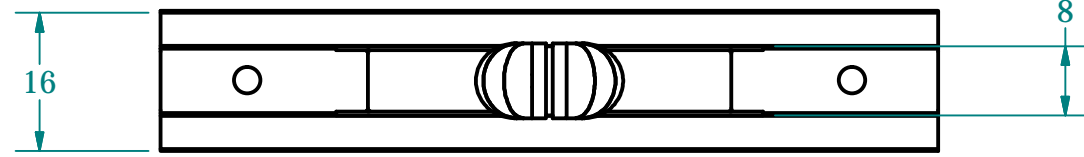
MATERIAL Steel		 AQUARIUS SYSTEMS <small>A Division of D&amp;D Products Inc.</small>	
DRAWN michaelr	3/23/2015		
APPROVED BY		TITLE 2" PROP SHAFT - WT-34	
		PROJECT	
		SIZE B	DWG NO 3320
			REV
TOL. - 1/32" UNLESS OTHERWISE NOTED	SCALE NTS	WEIGHT N/A	SHEET 1 OF 1

4

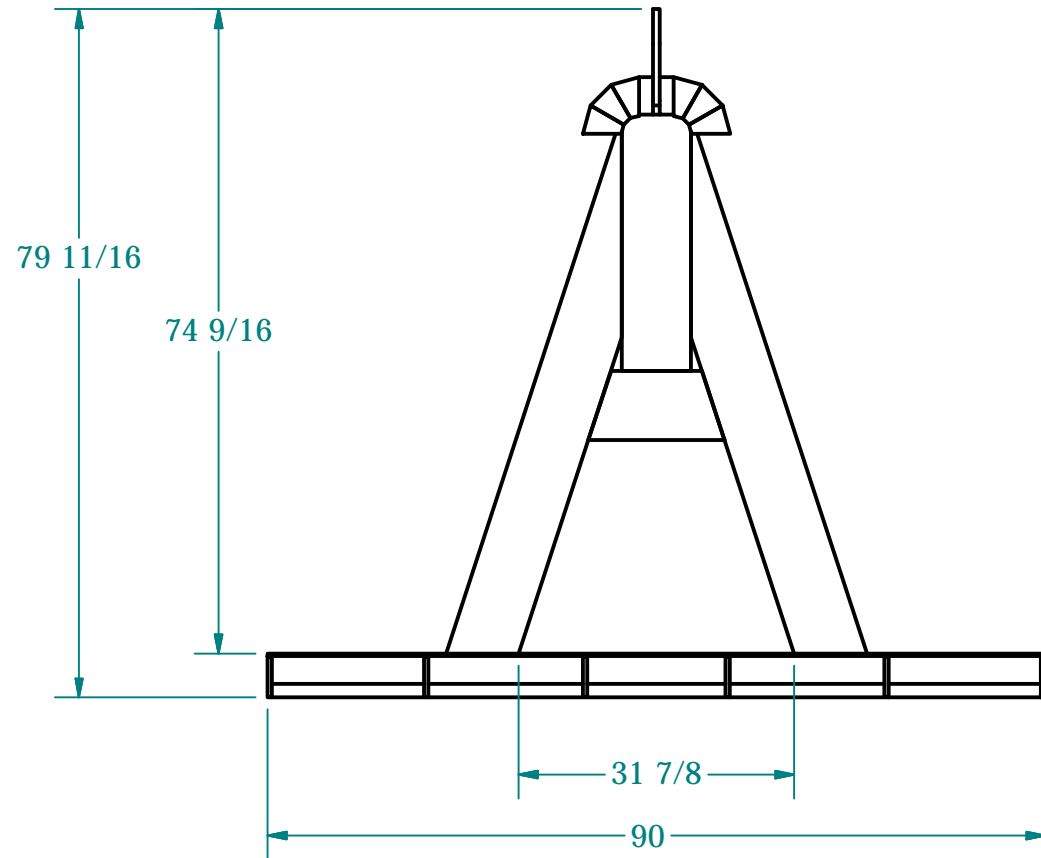
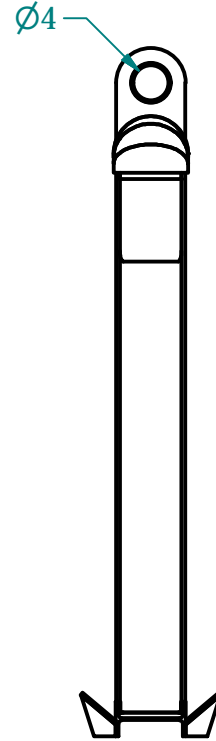
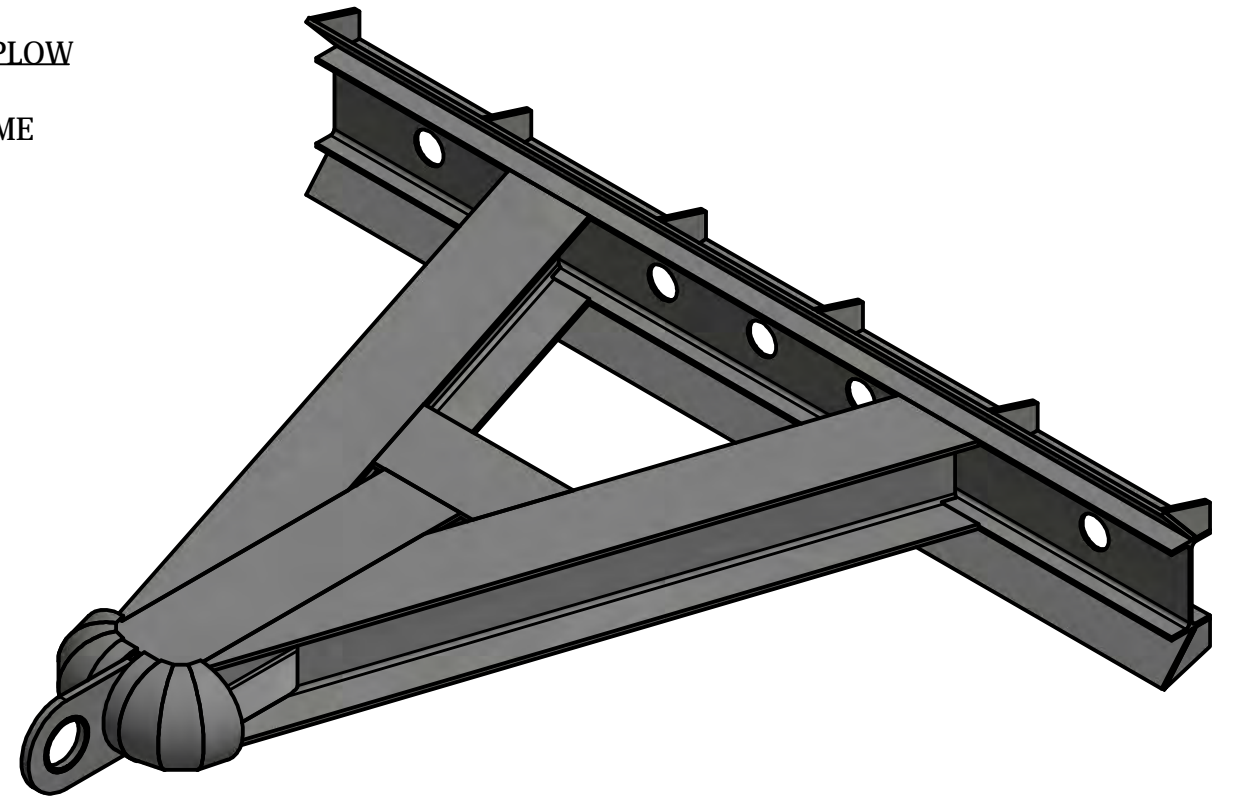
3

2


1



"T" STYLE - WT-34 PLOW  
 SMOOTH A-FRAMES  
 SMOOTH MAIN FRAME



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MATERIAL		 AQUARIUS SYSTEMS <small>A Division of D&amp;D Products Inc.</small>	
DRAWN michaelr	12/21/2014		
APPROVED BY		TITLE WT-34 PLOW "T" STYLE	
		PROJECT	
		SIZE B	DWG NO 3235
			REV
TOL. - 1/32" UNLESS OTHERWISE NOTED		SCALE NTS	WEIGHT 643.6
			SHEET 1 OF 1

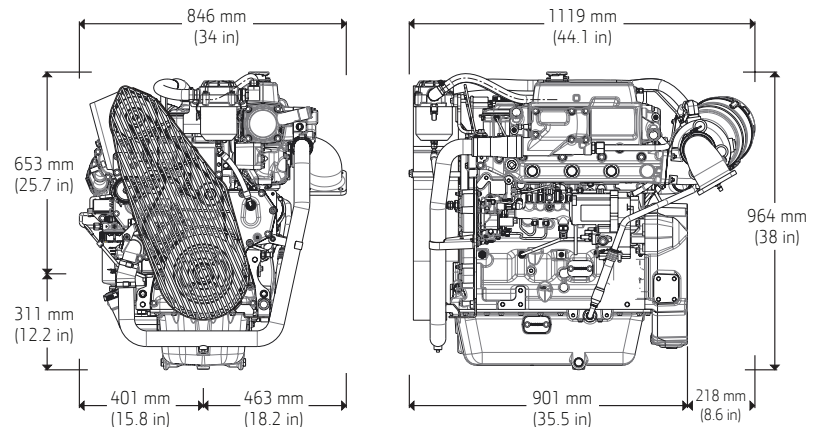
# PowerTech™ 4045AFM85 Diesel Engine

## Marine Propulsion Engine Specifications


**JOHN DEERE**


4045AFM shown

### Dimensions



Dimensions shown in mm (in) may vary according to options selected.  
Contact your distributor for more information.

### Emissions

EPA Commercial Marine Tier 3  
IMO MARPOL Annex VI Compliant  
NRMM (97/68/EC) as amended

### General Data (based on standard option configuration)

Model	4045AFM85
Number of cylinders	4
Displacement – L(cu in)	4.5 (273)
Bore and Stroke – mm (in)	107 x 127 (4.21 x 5)
Engine Type	In-line, 4-cycle
Aspiration	Turbocharged and air-to-coolant aftercooled

Length maximum – mm (in)	1119 (44.1)
Length to rear face of flywheel housing – mm (in)	901 (35.5)
Flywheel housing SAE	SAE #3
Width maximum – mm (in)	864 (34)
Crankshaft centerline right – mm (in)	463 (18.2)
Crankshaft centerline left – mm (in)	401 (15.8)
Height – mm (in)	964 (38)
Height, crankshaft centerline to top – mm (in)	653 (25.7)
Height, crankshaft centerline to bottom – mm (in)	311 (12.2)
Weight, dry – kg (lb)	578 (1274)

### Classification Societies

SOLAS – Accessories available\*  
ABS, DNV, BV, LR

\* Other accessories available. Contact your distributor for details.

### Engine Specifications

Performance ratings	Power kW (bhp)	Rated Speed (rpm)	Rated fuel consumption L/hr (gal/hr)
M1	119 (160)	2300	33.2 (8.8)
M2	134 (180)	2400	36.9 (9.7)
M3	149 (200)	2500	44.2 (11.7)
M4	168 (225)	2600	48.6 (12.8)

Metric hp = Brake hp x 1.01387

M rating	M1	M2	M3	M4
Typical load factor	>65%	≤65%	≤50%	≤40%
Typical Annual Usage (hr)	Unrestricted	3,000-5,000	2,000-4,000	1,000-3,000
Typical full-power operation (hr)	Uninterrupted	16 of each 24 hr	4 of each 12 hr	1 of each 12 hr

Ratings are based on ISO 8655 standard power rating and the SAE J1228 crankshaft power rating.

For easier installation, JDPS offers a range of options to fit your needs.

See your John Deere Power Systems engine distributor or marine dealer for more detailed performance information.

## Features and Benefits

### High torque and low rated RPM

- High torque provides excellent vessel control and maneuverability
- Lower rated propulsion RPM reduces vibration and noise for improved crew comfort

### Integrated heat exchanger

- Integrated expansion tank, heat exchanger, and exhaust manifold reduce the chance of leaks
- High-capacity heat exchanger provides reliable operation in adverse conditions

### Keel-cooled or heat exchanger

- Closed cooling system in keel-cooled engine option eliminates the need for a sea strainer, seawater pump, or anodes
- Heat exchanger option offers a lighter, more compact, and simpler installation for the vessel

### Internal balancers

- Internal balancers reduce engine noise and vibration for crew comfort

### 4-valve cylinder head

- Excellent airflow through 4-valve cylinder head delivers greater low-speed torque and better transient response time

### High-pressure common-rail (HPCR)

- The HPCR fuel system provides variable common-rail pressure, multiple injections, and higher injection pressures
- Controls fuel injection timing and provides precise control for the start, duration, and end of injection
- Transfer pump with priming option
- Provides high performance, excellent fuel economy, and low emissions

### Water-cooled exhaust manifold

- Integrated components eliminate external hoses and fittings
- Manifold creates a cooler and quieter environment for passengers and crew

### Replaceable cylinder liners

- Replaceable wet-type cylinder liners are precision-machined and hardened for long life
- Allows engine to be rebuilt to original specifications

### Electronic engine control unit (ECU)

- Advanced fault code diagnostics and customizable engine protections ensure reliability and uptime
- Provides highly customizable features and trim to integrate your vessel

### Multiple service options

- Either-side oil fill/dipstick combinations and remote oil filter options are available for easier service access

**John Deere Power Systems**  
3801 W. Ridgeway Ave.  
PO Box 5100  
Waterloo, IA 50704-5100  
Phone: 800.553.6446  
Fax: 319.292.5075

**John Deere Power Systems**  
**Usine de Saran**  
La Foulonnerie B.P. 11.13  
45401 Fleury les Aubrais Cedex  
France  
Phone: 33.2.38.82.61.19  
Fax: 33.2.38.82.60.00

*All values at rated speed and power with standard options unless otherwise noted. Specifications and design subject to change without notice.*

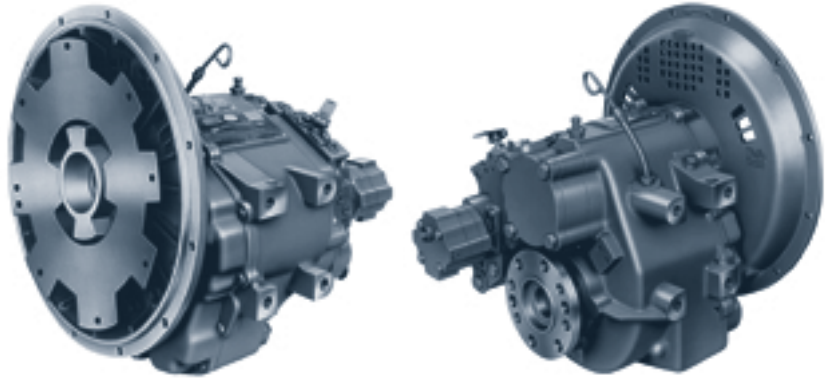
Litho in U.S.A. (14-11) © 2014 JOHN DEERE

**MAXIMUM 345 KW (463 HP) @ 2800 RPM [PLEASURE CRAFT DUTY]**

**STANDARD EQUIPMENT**

**MG-5061 SC & MG-5061 A**

- SAE housings no. 3, 2, & 1
- Torsional input couplings
- Clutch fill rate-of-rise valve
- Oil strainer



**OPTIONS**

	MG-5061 SC	MG-5061 A
12V or 24V electric selector valves	x	x
Companion flange/bolt set (companion flange standard on 3:1 ratio MG-5061)	x	x
Mounting brackets	x	x
Oil temperature/pressure gauges - mechanical type	x	x
Raw/fresh water heat exchangers	x	x
Single/dual stage 11.5" torsional input couplings	x	x
Trolling valve	x	x
Live PTO - SAE 'B' 2/4-bolt 37 kW (50 hp) @ 1800 rpm Turns at engine speed and same as engine direction of rotation.	x	x
Weight (dry weight with standard equipment)	<b>100 kg</b>	<b>98 kg</b>

Contact Twin Disc for Survey Society Approvals and Classifications.  
Specifications subject to change without prior notice in the interest of continual product improvement.

**INPUT RATINGS – KILOWATTS (KW) (HORSEPOWER [HP])\***

MG-5061 SC	Reduction Ratios :1	Pleasure Craft Duty		Intermediate Duty		Continuous Duty		Max rated input speed and min. engine low idle speed RPM
		@2600 RPM	@2800 RPM	@2400 RPM	@2600 RPM	@2100 RPM	@2400 RPM	
	1.15, 1.48, 1.77, 2.00	320 kW (430 hp)	345 kW (463 hp)	213 kW (286 hp)	230 kW (309 hp)	140 kW (187 hp)	159 kW (213 hp)	3200 max. 500 min.
	2.43	298 kW (399 hp)	321 kW (430 hp)			113 kW (152 hp)	129 kW (173 hp)	
	3.00	276 kW (370 hp)	298 kW (400 hp)			134 kW (179 hp)	153 kW (205 hp)	

MG-5061 A	Reduction Ratios :1	Pleasure Craft Duty		Intermediate Duty		Continuous Duty		Max rated input speed and min. engine low idle speed RPM
		@2600 RPM	@2800 RPM	@2400 RPM	@2600 RPM	@2100 RPM	@2400 RPM	
	1.13, 1.54, 1.75, 2.00	320 kW (430 hp)	345 kW (463 hp)	213 kW (286 hp)	230 kW (309 hp)	140 kW (187 hp)	159 kW (213 hp)	3200 max. 500 min.
	2.47	298 kW (400 hp)	321 kW (430 hp)			134 kW (179 hp)	153 kW (205 hp)	

\* Ratings shown for use with standard right hand rotation engines.

## SERVICE CLASSIFICATION DEFINITIONS

**Pleasure Craft [PC]:** Up to 500 hours/year, low load factor usage planing hull vessels where typical full engine throttle operation is less than 10% of total time. The balance of operation at 80% of full engine throttle or less. Marine transmissions for use in long range pleasure cruisers, sportfish charter boats/patrol boats do not qualify for Pleasure Craft Service.

*Note: Some revenue producing applications such as Planing Hull Bristol Bay Gillnetter do qualify under Pleasure Craft rating definition.*

**Light Duty [LD]:** Relatively low hour usage (less than 1500 hours per year) where full throttle operation is 2 hours out of 12. Typical applications include planing hull vessels such as fire boats, sportfish charter boats, and patrol/custom boats. This rating is also applicable to some bow and stern thruster applications.

**Intermediate Duty [ID]:** Hour usage of up to 2000 hours/year (for models MG-5114 Series and smaller) and up to 3000 hours/year (for models larger than MG-5114 Series) with 50% of the operating time at full engine rating. Typical applications include planing hull vessels such as ferries, fishing boats, some crew boats, and some displacement hull yachts as well as some bow and stern thruster applications.

**Medium Duty [MD]:** Hour usage of up to 4000 hours/year with up to 80% of operating time at full engine power. This duty classification is for usage where some variations in engine speed/power occur as part of normal vessel operation. Typical vessels include mid-water trawlers, crew/supply boats, ferries, and some inland water tow boats.

**Continuous Duty [CD]:** For use in continuous operation with little or no variation in engine speed/power setting. Typical vessels include fishing trawlers, tow/tug boats and ocean going vessels.

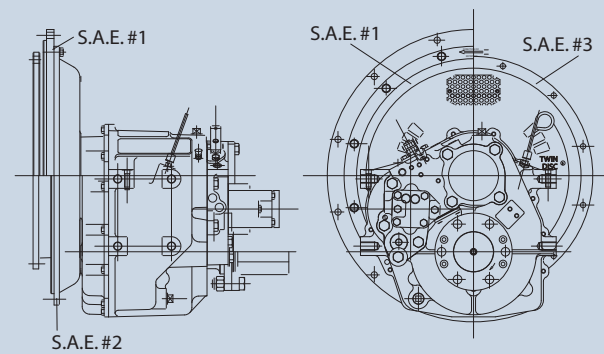
**Important Notice:** Torsional Vibration: Disregarding propulsion system torsional compatibility could cause damage to components in the drive train resulting in loss of mobility. At minimum, system incompatibility could result in gear clatter at low speeds.

The responsibility for ensuring that the torsional compatibility of the propulsion system is satisfactory rests with the assembler of the drive and driven equipment.

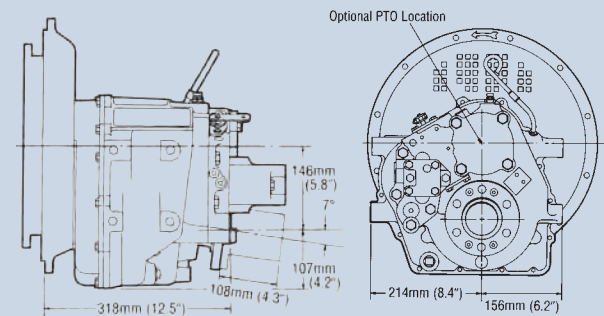
Torsional vibration analysis can be made by the engine builder, marine survey societies, independent consultants and others. Twin Disc is prepared to assist in finding solutions to potential torsional problems that relate to the marine transmission.

Twin Disc, Incorporated reminds users of these products that their safe operation depends on use in compliance with engineering information provided in this bulletin. Users are also reminded that safe operation depends on proper installation, operation and routine maintenance and inspection under prevailing conditions. It is the responsibility of the user (and not Twin Disc, Incorporated) to provide and install guards or safety devices which may be required by recognized safety standards or by the Occupational Safety and Health Act of 1970 and its subsequent provision.

### MG-5061 SC



### MG-5061 A





# **Pump & Motor Catalog**

## *Aluminum Bushing Series*

*Catalog HY09-1000/US*



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We manufacture hydraulic components for a wide range of industries including:

- Construction
- Refuse/dump truck
- Material handling
- Forestry
- Agriculture
- Industrial



### **WARNING**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

### **Offer of Sale**

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale".

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All units shown in this catalog are of aluminum construction to provide superior performance, while affording excellent horsepower-to-weight ratio.

**P16 SERIES**

- Flows to 37 GPM per section
- Tandem & triple section units available
- Pressures to 3000 PSI
- Speeds to 3600 RPM
- Also available as motor
- Priority flow available
- Dry valve option
- Clutch pump available

**20 SERIES**

- Flows to 98 GPM per section
- Tandem & triple section units available
- Pressures to 2500 PSI
- Speeds to 2500 RPM
- Pressure & flow sensing valves available
- Dry valve option
- Piggy back option available
- Also available as motor
- Cast iron versions available

**25 SERIES**

- Flows to 208 GPM per section
- Tandem section units available
- Pressures to 3000 PSI
- Speeds to 2500 PSI
- Piggy back option available
- Dry Valve option
- Also available as motor
- Cast irons versions available

**HP 7 SERIES**

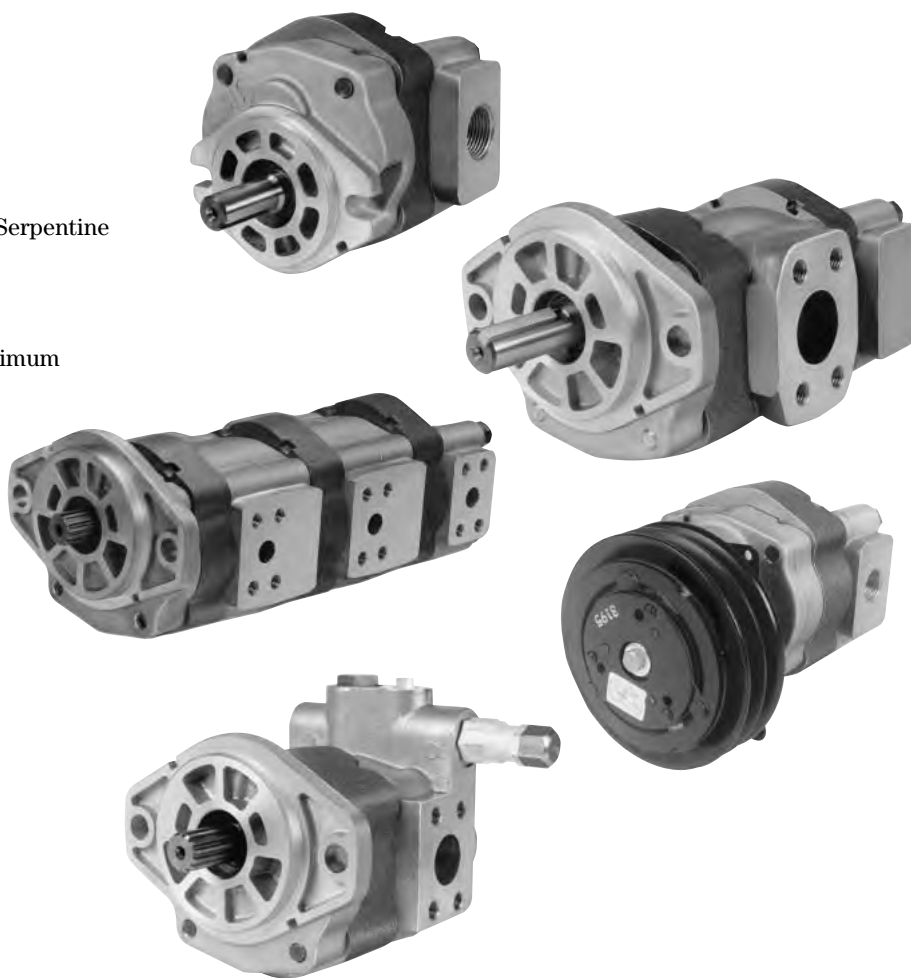
- Flows to 116 GPM per section
- Tandem section units available
- Pressures to 4000 PSI
- Speeds to 2500 RPM

**HP 8 SERIES**

- Flows to 177 GPM per section
- Tandem section units available
- Pressures to 4000 PSI
- Speeds to 2500 RPM

**General Information  
for P16 Series**

- Available in various configurations
  - P16 — Single Section
  - TP16 — Tandem, 2 & 3 Place
  - PVP16 — Priority Valve
  - CP16 — Clutch Pump 'V' Belt and Serpentine
- Cast iron pumping sections for durability
- Aluminum flanges and covers for optimum power to weight ratio.
- Journal bearings for long life and good over-hung load capability
- Buna-N Seals are standard for petroleum and glycol based fluids. "Viton®E" seals are optional.
- Pressure balanced plates for greater efficiency.





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**[salesga@yatesind.com](mailto:salesga@yatesind.com)**



## TIE-ROD CYLINDERS

### “H6” Hydraulic Heavy Duty:

- JIC-NFPA Interchangeable, pressures up to 3,000 PSI hydraulic, bore sizes available from 1 ½” - 24”, 20 mounting styles.

### “A4, H4, L4” Pneumatic Heavy Duty (steel): Hydraulic Medium Duty, Pneumatic Permanently Lubricated:

- JIC-NFPA interchangeable, pressures up to 250 PSI pneumatic or 1,500 PSI hydraulic, bore sizes available from 1 ½” - 20”, 23 mounting styles.

### “A2, H2” Pneumatic (Aluminum), Hydraulic Light Duty (Aluminum):

- JIC-NFPA interchangeable, pressures up to 250 PSI pneumatic or 400 PSI hydraulic, bore sizes available from 1 ½” - 8”, 20 mounting styles.

## MILL DUTY CYLINDERS

### “MH” Hydraulic Heavy Duty:

- Built tough to handle almost any application, pressures up to 3,000 PSI hydraulic, bore sizes available from 2” - 8”, 8 mounting styles.

### “MP” Pneumatic Heavy Duty:

- Built to cover most mill duty pneumatic application, pressures up to 250 PSI pneumatic, bore sizes available from 2” - 8”, 8 mounting styles.

## WELDED CYLINDERS

### “WS” Hydraulic Severe Duty :

- Specifically engineered to withstand the most extreme applications, pressures up to 3,000 PSI hydraulic, bore sizes available from 4” - 12”, 9 mounting styles.

### “WH” Hydraulic Heavy Duty:

- OEM, replacement cylinders, pressures up to 3,000 PSI hydraulic, bore sizes available from 1 ½” - 8”, 9 mounting styles.

### “WM” Hydraulic Medium Duty:

- OEM, replacement cylinders, pressures up to 2,500 PSI hydraulic, bore sizes available from 1 ½” - 6”, 9 mounting styles.

### “WP” Pneumatic Heavy Duty:

- Replacement cylinders, pressures up to 250 PSI pneumatic, bore sizes available from 1 ½” - 6”, 9 mounting styles.

## ACCESSORIES

- Rod Clevis • Rod Eye • Pivot Pins • Clevis Brackets
- Self-aligning Rod End Couplers • And much more

## YATES INDUSTRIES ALSO PROVIDES:

- Bellow-style rod boots
- Air/oil intensifiers
- Cylinders with linear displacement transducers
- Cylinders with proximity switches
- Tandem cylinders
- All stainless steel cylinders
- Cylinders with special plating & painting
- Special cylinders per customer prints & specifications
- Back-to-Back Cylinders
- Cylinder Seal Kits
- Online Configurator

## YATES INDUSTRIES REPAIR DEPARTMENT

- The Midwest's largest and most complete repair facility
- Repair all makes, all models, all sizes, Big Bore specialist 60”+
- In-house honing department, machining department, welding department & seal department
- Large inventory: seals, honed tubing, hardened chrome plated rod material, cast iron and cold roll bar stock
- 24-hour emergency service



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FINISH FIRST

# SYSTEMS GUIDE

NORTH AMERICAN VERSION

VOLUME 7

[WWW.AWLGRIP.COM](http://WWW.AWLGRIP.COM)



**AkzoNobel**

**PRODUCT DATA SHEET**  
**GRIPTEX FINE/COURSE/EXTRA COURSE NON SKID ADDITIVE**  
**73012/73013.73237**

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### Features & Uses

Griptex Non Skid is a polymer bead aggregate used to provide non-skid deck and step areas when mixed with any Awlgrip topcoat.

### Specification Data

**Type:** Polymer Bead.

**Color:** Translucent.

**Packaging:** 1 Quart – approx. 1pound (0.44 kg), 1 Gallon – approx. 4 pounds (1.8 kg).

**VOC:** Fine (73012): 0 g/lit or 0 lbs/gallon  
 Coarse (73013): 0 g/lit or 0 lbs/gallon  
 Extra Coarse (73237): 0 g/lit or 0 lbs/gallon

### Product Components, Reducers, Additives, and Auxiliary Components

GRIPTEX Non-Skid Particles - Fine .....	73012
GRIPTEX Non-Skid Particles - Coarse .....	73013
GRIPTEX Non-Skid Particles - Extra Coarse .....	73237

### Application Equipment

Use air atomized spray equipment recommended for AWLGRIP or AWLCRAFT 2000 Topcoats. Fluid tip must be at least .070". Do not use airless or air assist airless spray equipment.

### Surface Preparation

This product is an additive component. See instructions for the primary product.

### Mixing & Reduction

For spray application, add 8-10 oz. (227-284 grams) by weight of GRIPTEX Non-Skid Particles to each gallon (3.785 liters) of mixed color base and converter.

### Application Instructions

GRIPTEX Non-Skid Particles may be added to mixed topcoats and applied by spray. The dry particles can be broadcast or sprinkled into a tacky paint film.

Do not apply paint materials to surfaces warmer than 105°F (41°C) or colder than 55°F (13°C). Do not attempt to cure products at temperatures below 55°F (13°C).

### Cautions:

1. Previously painted surfaces must be tested for compatibility before applying Awlgrip Products.
2. Gelcoat non-skid areas need to be thoroughly cleaned and abraded. Use Scotchbrite®, water, abrasive cleaners, and stiff brushes to ensure proper cleaning.
3. For final removal of abrasive residues and sanding dirt, wrap a stiff bristle brush in a clean cotton cloth. Scrub the sanded surface with the cloth wrapped brush. The bristles of the brush force the cloth into the grooves and valleys of the old non-skid, removing contaminants from the surface. Change the cloths frequently. Flush the surface with fresh water, allow to dry, then wipe with Awlgrip Wipe-Down Solvent (NA: Awlprep T0008, Awlprep 400 T0170 or Awlprep Plus T0115; EU: Surface Cleaner T0340).

**PRODUCT DATA SHEET**  
**GRIPTEX FINE/COURSE/EXTRA COURSE NON SKID ADDITIVE**  
**73012/73013.73237**

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**Note:** Even on small jobs, long-term performance is improved if surfaces are primed before an AWLGRIP or AWLCRAFT 2000 Topcoat is applied.

**Application Instructions of AWLGRIP or AWLCRAFT 2000 Topcoat  
 with GRIPTEX Non-Skid Particles-Broadcast Method:**

The easiest way for beginners to obtain a non-skid finish is to use the Broadcast-Shaker Method. GRIPTEX Non-Skid is added to a still tacky application of AWLGRIP/AWLCRAFT 2000 Topcoat.

1. Clean the primed and sanded surface with Awlgrip Wipe-Down Solvent (NA: Awlprep Plus T0115; EU: Surface Cleaner T0340) using the Two Cloth Method.
2. Mask the perimeter of the non-skid areas. 3M #218 Fine Line Tape can be used in all areas except those with tight curves. Use 3M #471 Blue Vinyl Plastic Tape for sections with tight curves.
3. Apply a light, smooth coat of AWLGRIP or AWLCRAFT 2000 Topcoat by spray, brush, or roller. Allow the topcoat to flash off 10 to 20 minutes until the surface is slightly dry but still sticky.
4. Using a flour sifter, powdered sugar shaker, or the punctured container itself, sprinkle the GRIPTEX Non-Skid into the paint film. To use the GRIPTEX container, first punch holes in the lid with a nail or ice pick. Overlap the broadcasting stroke to provide a uniform pattern. Allow to dry 12 to 16 hours.
5. Vacuum or blow off loose, excess GRIPTEX Non-Skid Particles. Repeat Steps 3 and 4 on any areas that need additional non-skid particles.
6. Apply 1 or 2 sealer coats of AWLGRIP or AWLCRAFT 2000 Topcoat over the entire non-skid surface. This coat encapsulates the GRIPTEX Non-Skid Particles in the paint, maximizing durability.

**Application Instructions of AWLGRIP or AWLCRAFT 2000 Topcoat  
 with GRIPTEX Non-Skid Particles - Spray Method**

Use a siphon gun or a pressure pot with an agitator. A .070 fluid tip is required. Surround non-skid areas with 36 inches (.914 meters) of masking paper. Also, protect other areas from overspray. Each spray pass must begin and end on the masking paper.

**Warnings:**

1. Do not stop spraying until you reach the masking paper on the opposite side. Each spray pass must begin and end on the masking paper. Large areas may require walking on the surface.
2. GRIPTEX Particles can be trapped in the fluid tip when the gun is shut off, causing the gun to spit and drip. Keep a rag handy to wipe the gun tip after each pass.
3. Never use GRIPTEX Particles in an airless spray gun or an air assist airless spray gun. Mastering the spray application of non-skid finishes can be a very time consuming process. Applicators that do not apply non-skid materials on a regular basis will find the Broadcast Method much easier to master.

1. Clean the primed and sanded surface with Awlgrip Wipe-Down Solvent (NA: Awlprep Plus T0115; EU: Surface Cleaner T0340) using the Two Cloth Method.
2. Mask the perimeter of the non-skid areas. 3M #218 Fine Line Tape can be used in all areas except those with tight curves. Use 3M #417 Blue Vinyl Plastic Tape for those areas.
3. Surround all non-skid areas with 3 feet (.914 meters) of masking paper.
4. Mix AWLGRIP Color Base with Awlcat #2 and the appropriate reducer. Overall mix for this coat should be 1:1:1 by volume. Add 8-10 oz. (227-284 grams) by weight of GRIPTEX Non-Skid Particles for each mixed gallon of AWLGRIP or AWLCRAFT 2000 Topcoat.
5. Apply by triggering the gun over the masking paper and spraying across the non-skid area in one continuous pass. The spray gun should be held well off the surface. Spraying from waist high while walking is ideal. The paint will fall to the surface as a

**PRODUCT DATA SHEET**  
**GRIPTEX FINE/COURSE/EXTRA COURSE NON SKID ADDITIVE**  
**73012/73013.73237**

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light, dry coat. If using a siphon gun, shake the gun and cup at the end of each pass to keep the GRIPTEX mixed in the paint. Allow the coat to thoroughly tack.

6. Apply a coat of AWLGRIP or AWLCRAFT 2000 Topcoat to seal the surface.

The information in this Product Data Sheet is not intended to be exhaustive. Any person using the product without first making further enquiries as to the suitability of the product for the intended purpose does so at their own risk and, to the extent permitted by law, we can accept no responsibility for the performance of the product or for any loss or damage arising out of such use. The information contained in this Product Data Sheet is liable to modification from time to time in the light of experience and our policy of continuous product development.



## MODEL 7050 2" I.D. STEERING CYLINDER



The engineering features and simple design make this a very durable cylinder. All materials used are corrosion resistant. Normally the cylinders are supplied with neoprene piston seal to provide a smooth piston movement. Heavy duty polyurethane seals are also available on request.

**Materials:** Brass tube and piston. End caps and bearings are silicon bronze. Piston rod is stainless steel and hard chromed.

### ORDERING INFORMATION

**Design Pressure:** 1500 psi  
(103 bar, 10.3 MPa)

- B - Balanced cylinder
- U - Unbalanced cylinder
- 7.5 - with 7.5" stroke
- 10 - with 10" stroke
- 12 - with 12" stroke

**Weight:** 12.6 lb, (5.7 kg) for 7.5" stroke  
14 lb. (6.3 kg) for 10" stroke  
15 lb. (6.8 kg) for 12" stroke

Example: 7050-B7.5 is for balanced steering cylinder with 7.5" stroke

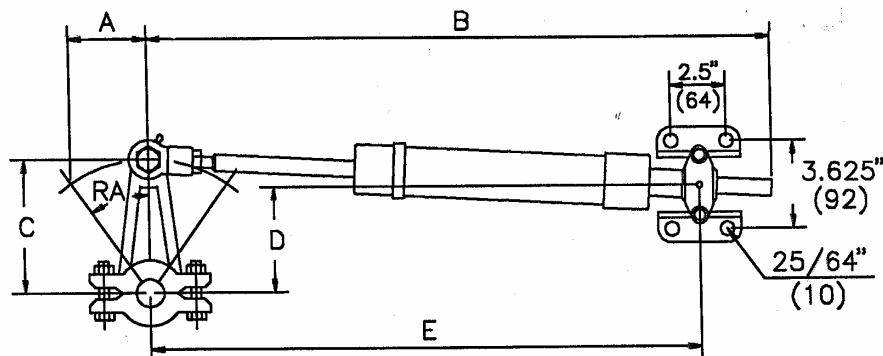
**Effective Piston Area:** 2.69 in<sup>2</sup> (17.4 cm<sup>2</sup>)

Note: Other strokes are available on request

### Rudder angle (RA) 35°

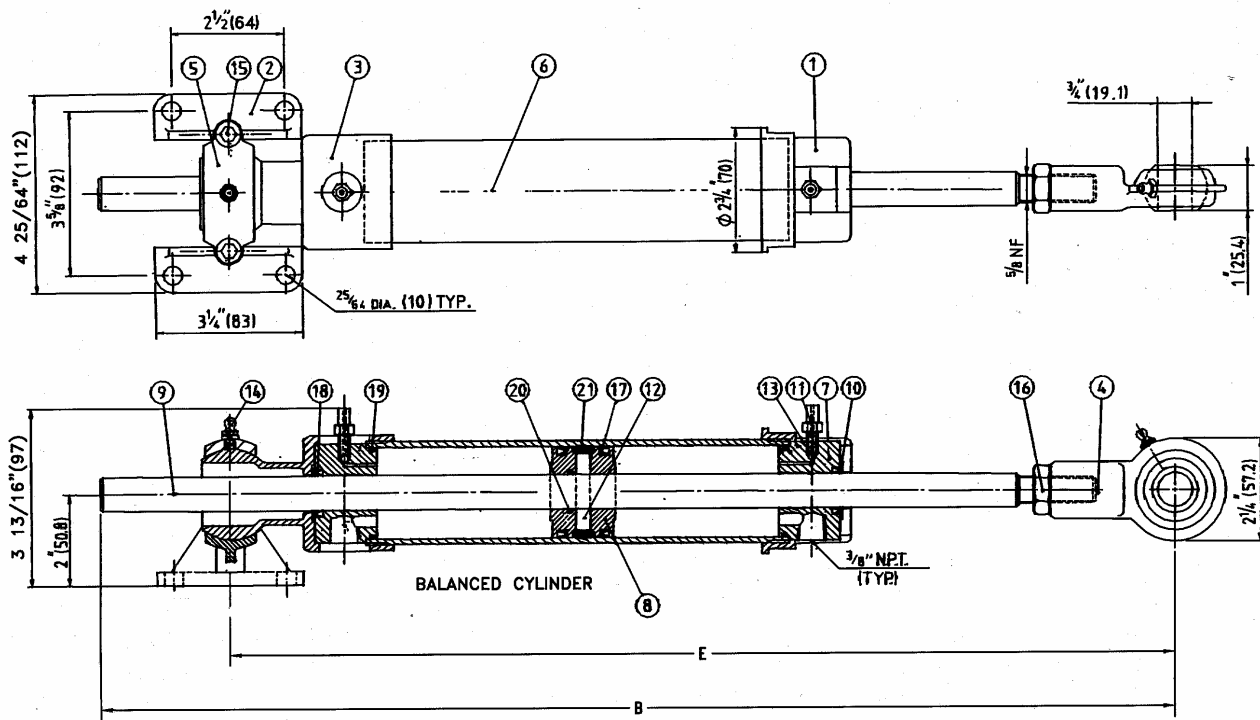
Torque		Stroke		Displacement		A		B		C		D		E	
ft-lb	kg-m	in.	mm	In <sup>3</sup>	cm <sup>3</sup>	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1205	167	7.5	191	20.3	333	3.8	95	23.8	603	6.5	166	5.9	151	20.9	530
1606	222	10	254	27	442	5	127	28.8	730	8.7	221	7.9	201	24.6	625
1927	266	12	305	32.4	531	6	152	32.8	832	10.5	266	9.5	242	27.6	701

Torque is based on one balanced cylinder at 1000 psi (69 bar)



Please visit our website <http://www.kobelt.com> for more information.

# DIMENSIONS AND PARTS LIST MODEL 7050

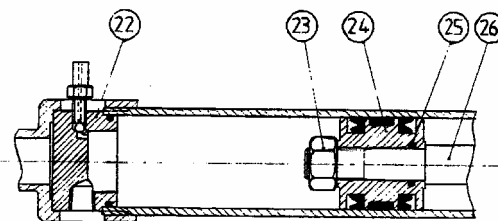


DIMENSIONS AND PARTS  
MODEL 7050

All dimensions in inches (mm)

ITEM	QTY*	QTY**	ART NUMBER	DESCRIPTION
1	1	1	7050-0001	End Cap
2	1	1	7050-0002	Trunnion foot
3	1	1	7050-0003	Trunnion End Cap
4	1	1	7050-0004	Rod End
5	1	1	7050-0005	Trunnion Cap
6	1	1	7050-0006	Cylinder Tube
7	2	1	7050-0007	Rod Guide
8	1	-	7050-0008	Piston
9	1	-	7050-0009	Piston Rod
10	2	1	7050-0010	Retaining Washer
11	2	2	7040-0011	Bleeder Screw
12	1	1	7050-0012	Pin
13	2	2	1301-0005	Ball
14	2	2	1501-0301	Grease Nipple
15	2	2	1002-1224	Socket Head Screw
16	1	1	1022-0266	Jam Nut
17	2	2	1102-2029	Urethane "U" Cup (option)
17	2	2	1102-0029	Neoprene "U" Cup (standard)
18	2	1	1102-2007	"U" Cup
19	2	2	1101-0133	"O" Ring
20	1	-	1101-0018	"O" Ring
21	1	1	7050-0013	Wear Ring
22	-	1	7050-0107	Rear End Cap
23	-	1	1022-0166	Nut
24	-	1	7050-0108	Piston
25	-	1	1101-0016	"O" Ring
26	-	1	7050-0109	Piston Rod

\* balanced version  
\*\* unbalanced version



UNBALANCED CYLINDER



**RUFNEK®**



Because  
Tough  
Enough  
Is Never  
Enough.

**Worm Gear Winches**

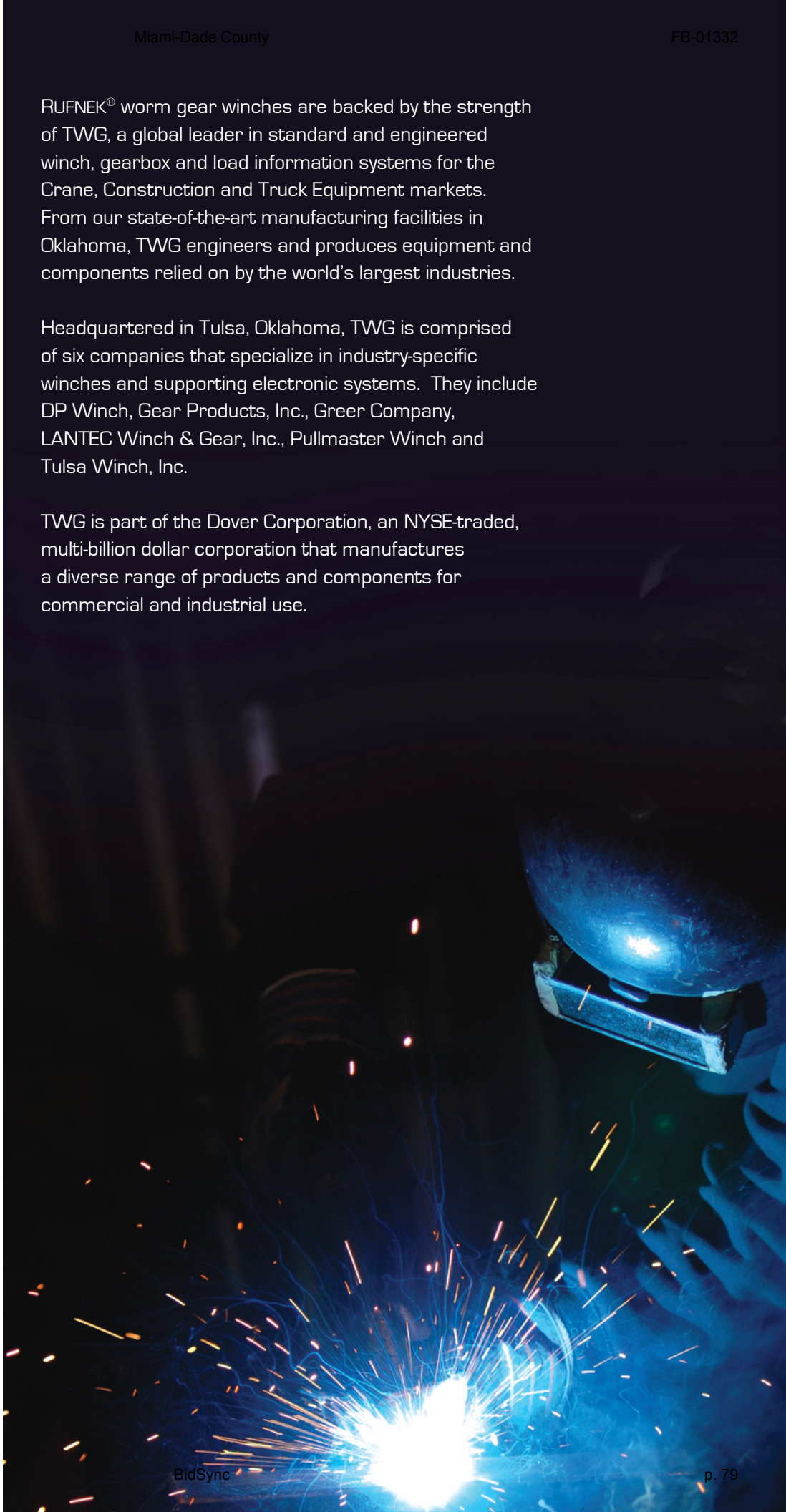
# Strength You Can Depend On



RUFNEK® worm gear winches are backed by the strength of TWG, a global leader in standard and engineered winch, gearbox and load information systems for the Crane, Construction and Truck Equipment markets. From our state-of-the-art manufacturing facilities in Oklahoma, TWG engineers and produces equipment and components relied on by the world's largest industries.

Headquartered in Tulsa, Oklahoma, TWG is comprised of six companies that specialize in industry-specific winches and supporting electronic systems. They include DP Winch, Gear Products, Inc., Greer Company, LANTEC Winch & Gear, Inc., Pullmaster Winch and Tulsa Winch, Inc.

TWG is part of the Dover Corporation, an NYSE-traded, multi-billion dollar corporation that manufactures a diverse range of products and components for commercial and industrial use.



# You Want a Winch That Works as Hard as You Do

So why would you trust your oilfield fleet to anything but RUFNEK® winches?

At Tulsa Winch, we take performance seriously—and it shows. Our RUFNEK® worm gear winches are as rugged and reliable as their name, and engineered to deliver the extra long life today's fleet managers demand.

Unlike other winches, RUFNEK® worm gear winches are designed from the very start to perform under the toughest conditions and the harshest terrains. We manufacture our heavy-duty winches and accessories with the quality construction and outstanding strength you need to get the job done, get it done right, and get it done safely.

At TWG, we continue to raise the bar on how winches should perform—and it's been that way for more than 75 years.

RUFNEK® worm gear winches are specifically designed for the world's Oilfield Industry. In the harshest terrains, on the most challenging projects, RUFNEK® worm gear winches set a new benchmark for safe, reliable operation and rugged performance.



## RUFNEK® Worm Gear Winches

### Advanced Features and Superior Benefits

#### **Mechanical input or integral hydraulic motor and air control packages for clutch and band brake operation.**

Offers optimal flexibility in selecting appropriate drives for applications.

#### **Clutch position indicator.**

Provides safe, visual means of ensuring positive clutch engagement.

#### **Sliding clutch with reverse draft.**

Assures complete and even engagement under load.

#### **Adjustable oil brake with automatic engagement during pay out.**

Enhances brake life and improves load management.

#### **Air-applied band brake.**

Prevents bird nesting of cable during free-spool operation.

**Technical and  
Customer Support**

**918.298.8300**

Product integrity. Service integrity. Just two of the strengths that have made Tulsa Winch® and RUFNEK® the Oilfield Industry's most trusted names in winch systems.

Our Technical Support and Customer Support teams are always available to answer your equipment questions or help you improve your fleet safety.



# RUFNEK®

Strong, durable,  
long lasting.

RUFNEK® worm gear winches are built for tough oilfield and heavy haul applications and available in pulling capacities from 10,000 to 130,000 pounds.

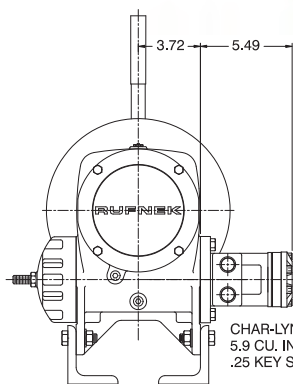
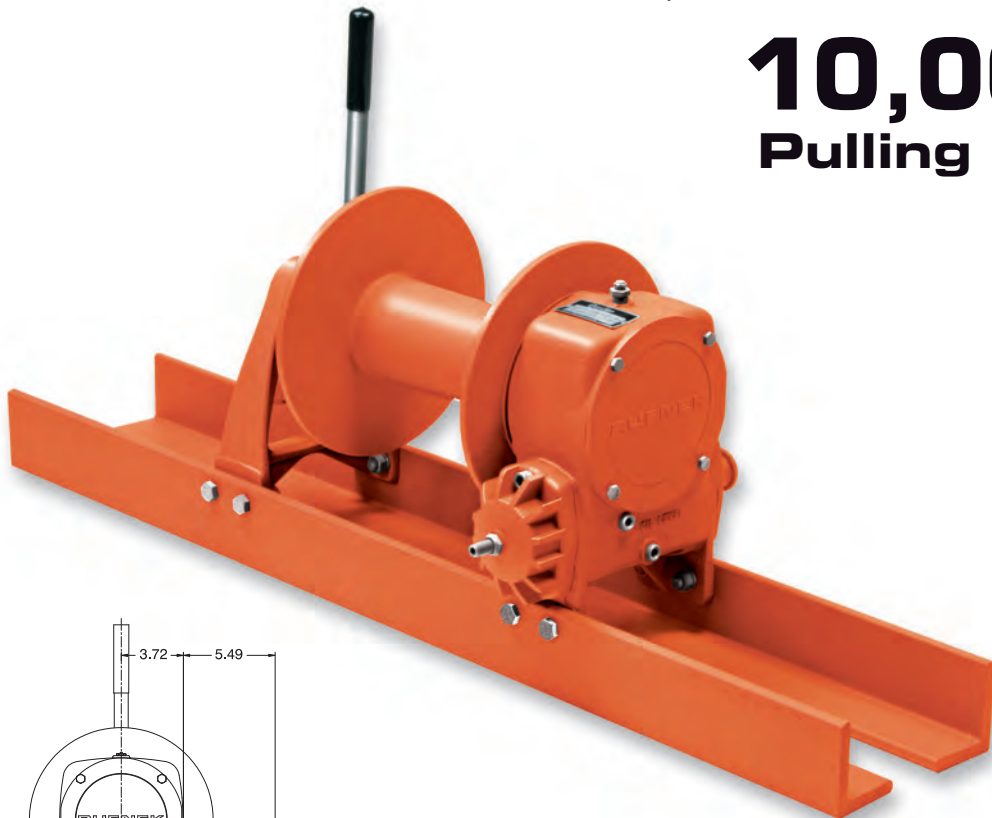


**RUFNEK®** Worm Gear Winches

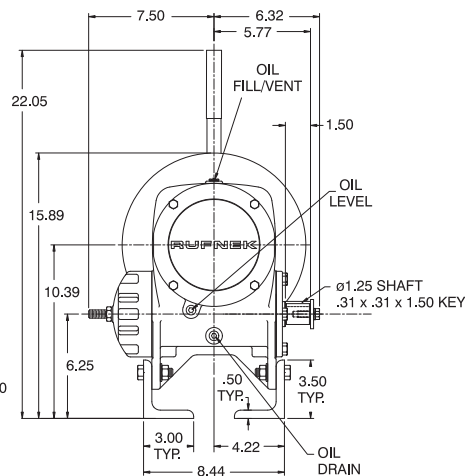
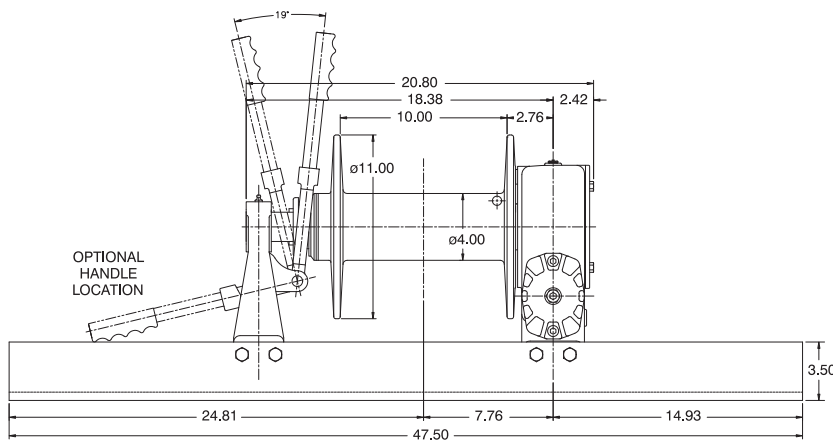
**RN10W**

**RUFNEK®** Worm Gear Winches

# 10,000 lb. Pulling Capacity



CHAR-LYNN H+ SERIES MOTOR, 5.9 CU. IN. 2 BOLT "A" MOUNT 1.00 DIA., .25 KEY SHAFT, 7/8 - 14 O'RING PORTS



Approximate weight: 215 lb Mechanical / 227 lb Hydraulic

HYDRAULIC PERFORMANCE DATA							MECHANICAL DRIVE					
Layer	Linepull (lb)	Linepull (kg)	Linespeed (fpm)	Linespeed (mpm)	Cable Cap. - .4375" Ø		Input Torque-Static		Input Torque-Dynamic		Input Speed	
					(ft)	(m)	(lb-in)	(Nm)	(lb-in)	(Nm)	(rpm)	
1	10,000	4,536	21	6	23	7	1,618	183	1,100	124	max. 800	
2	8,358	3,791	25	8	51	15	<b>HYDRAULIC DRIVE</b> (5.9 CID Motor)					
3	7,176	3,255	29	9	83	25						
4	6,287	2,852	33	10	119	36	<b>Pressure</b>		<b>Flow</b>			
5	5,594	2,537	37	11	160	49	(Δ psi)	(Δ bar)	(gpm)	(lpm)		
							1,600	103	20	76		
<b>4.00 BBI x 11.00 FL x 10.00 W</b>												
<b>⚠ CAUTION:</b>			<b>⚠ WARNING:</b>				<b>Cable Size (in)</b>	<b>Capacity (ft)</b>	<b>Capacity (m)</b>			
The last 5 wraps of cable must be left on the drum to assist the cable clamp in holding the load.			Winches and capstans are not intended to be used for lifting or moving of persons.				0.375	343	105			
							0.5	198	60			

STILL MAKIN' IT IN THE USA



# Flex-a-lite®

Performance • Cooling • Products



# 02 Bilge Pumping Systems

## INTRODUCTION



### Rule Bilge Pumps

Rule Submersible Bilge Pumps have set the standard for the industry for decades. They are the first choice of yachtsmen and fishermen throughout the world. More innovations in bilge pump design have come from Rule Industries than any other manufacturer, and we are proud to offer the broadest range of bilge pumps in the world.

Rule Industries has taken the initiative to once again set the standard. We're moving forward to redesign our bilge pumps from the 360 to the 4000 GPH pumps. As we look into the future, you'll see new designs, more options and higher efficiencies.



#### FEATURES AND BENEFITS

- Pump and switch are stand-alone products.
- Compact, efficient, long-life motors.
- Sizes: 360, 500, 800, 1000, 1100, 1500, 2000, 3700 and 4000 in 12, 24 and 32 volt versions.
- Limited three-year warranty.
- Ability to run dry for short periods.
- Easy-clean, snap-lock strainer bases.
- Stainless steel shafts.
- Completely submersible.
- Marine-grade blocked wiring.
- Rust and corrosion protection.
- Silent and vibrationless operation.
- CE and ISO 8849 certification.
- Ignition protection.
- Traditional operation activated by a float switch and/or panel switch, providing an extra level of security and protection.
- Remove the motor by pushing the side tabs, allowing easy access to clean the strainer and the impeller cavity.





# The leading marine and mobile electrical companies have come together

For decades Ancor, BEP, Blue Sea Systems, Marincos, Mastervolt, and ProMariner have worked independently to lead the industry in innovative electrical solutions. Now the six companies have come together to offer the broadest and most complete electrical product offering for marine and mobile applications.

This catalog represents one of the six independent catalogs for each of the companies and includes their primary product focus.

**ANCOR** Marine Grade Tinned Wire, Terminals, and Wire Management Products

**BEP** Battery Management and Czone Digital Switching

**BLUE SEA SYSTEMS** Battery Management, Circuit Protection, and Panels

**MARINCO** AC Shore Power, DC Power Connection, and Accessories

**MASTERVOLT** High Amp Chargers, Inverters, and Power Conversion Products

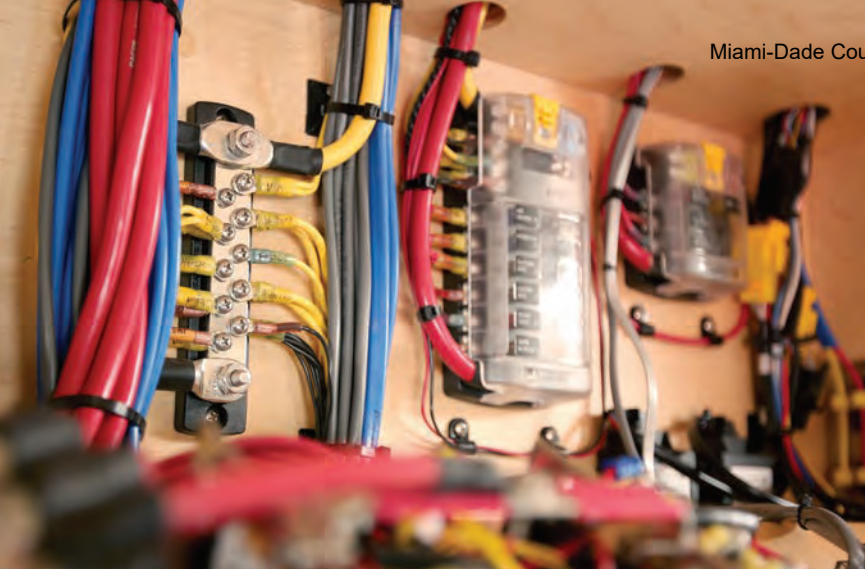
**ProMariner™** Waterproof and Open Chassis Battery Chargers

All of the company's products are designed to easily integrate into simple or comprehensive electrical systems. The world's finest boat, emergency vehicle, and RV manufacturers are recognizing the requirement for quality electrical systems and are specifying our products as original equipment.

The challenge, and our promise, is to leverage the deep product understanding in each of our companies with coordinated product development, an ABYC Certified technical sales team, and an industry-leading customer service and support group.



An ISO 9001: 2008 Certified Company



# What makes Blue Sea Systems Different:

## Selection

Over 1,000 electrical products are designed to work together as a fully integrated system

## Fast Delivery

Just in time manufacturing in Bellingham, Washington ensures rapid order fulfillment

## Worldwide Access to Product

A distribution network in over 45 countries provides access to products when they are needed

## Information

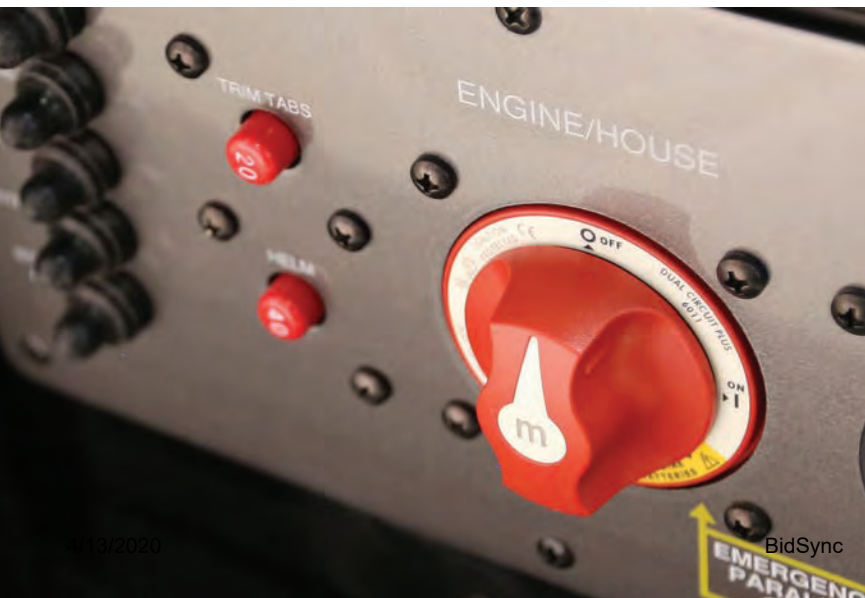
24-hour access to product information, selection tools, and technical articles online at [blueseasystems.com](http://blueseasystems.com)

## Industry Standards

Industry involvement ensures products meet ABYC, NMMA, and Coast Guard standards

## Quality

As an ISO 9001:2008 certified company, product quality is managed in a manner consistent with international standards





# CG2 & MA2 Series

## Clean Agent Fire Suppression Systems

HFC-227ea



### You need a **FIREBOY** automatic fire suppression system because:

- ▶ Continuous protection.
- ▶ Automatic operation.
- ▶ Manual operation if required.
- ▶ Peace of mind!
- ▶ Often detects and suppresses a fire before you know!
- ▶ Why would you NOT protect your boat and it's occupants?



### A CLEAN AGENT SYSTEM

- ▶ Featuring the HFC-227ea with coverage from 25-1,500 ft<sup>3</sup> (0.7-28.3 m<sup>3</sup>) for engine rooms, machinery spaces, and other enclosed spaces for Class B fires. Factory Mutual and USCG Approved - Clean Agents are approved by all notified bodies.

### SELECTING YOUR SYSTEM

1. Choose either the CG2 or MA2 Series.
2. Determine the volume of your engine compartment in cubic feet or cubic meters, L x W x H. For after-market installations, the gross volume MUST be used unless the boat manufacturer has attached a nameplate stating the volume of the fixed tanks to be deducted (CE and ISO 9094 requires NET volume calculation).
3. Based on steps 1 and 2, choose your model from the following charts. When in doubt, always choose the model that covers greater volume to ensure adequate protection.

*Example: MA20200227-BL = automatic discharge with optional manual discharge when used with a Fireboy Manual Discharge Cable, 200 cubic feet of coverage.*

4. When choosing the MA2 Series, select the length of Manual Discharge Cable required (see page 2).

### READY TO INSTALL

Each Fireboy system comes complete with a powder coated steel shelf bracket system, status indicator light, and owner's manual.

**WARNING:** Diesel engines require the installation of a Fireboy Engine Shutdown System. See separate sheet.

3M™ NOVEC™ 1230 Fire Protection Fluid Systems also available.

GA Series also available up to 3,000 ft<sup>3</sup> (85 m<sup>3</sup>)

### CG2 SERIES

- ▶ Automatic discharge only (@ 175°F / 79°C)
- ▶ Engine rooms up to 1,000 ft<sup>3</sup> (28.3 m<sup>3</sup>)
- ▶ Vertical or horizontal mounting
- ▶ Heavy-duty mounting bracket
- ▶ Helm display

### MA2 SERIES

- ▶ Automatic and manual discharge when used with a Fireboy Manual Discharge Cable (sold separately)
- ▶ Engine rooms up to 1,500 ft<sup>3</sup> (42.5 m<sup>3</sup>)
- ▶ Vertical or horizontal mounting
- ▶ Heavy-duty mounting bracket
- ▶ Helm display

# SAFETY



4/13/2020

BidSync



fireboy-xintex.com

Grand Rapids, Michigan / Poole, England

p. 88

► Designed for engine rooms and machinery spaces up to 1,000 ft<sup>3</sup> (28.3 m<sup>3</sup>), this automatic discharge series comes ready for vertical or horizontal mounting. Bracket and helm display included. Discharges at 175°F (79°C) or optional 155°F (68°C).

MODEL NUMBER	VOLUME PROTECTED		DIAMETER		TOTAL HEIGHT		AGENT WEIGHT		SHIPPING WEIGHT		SYSTEM PRESSURE
	ft <sup>3</sup>	m <sup>3</sup>	in	mm	in	mm	lbs	kgs	lbs	kgs	psi (@70° F)
CG20025227-B	25	0.7	3.3	85	9.5	241	1.1	0.5	5	2.4	240
CG20050227-B	50	1.4	3.3	85	13.3	338	2.2	1	8	3.7	240
CG20075227-B	75	2.1	4.3	110	15.6	396	3.2	1.5	13	6	240
CG20100227-B	100	2.8	4.3	110	15.6	396	4.3	2	14	6.4	240
CG20125227-B	125	3.5	4.3	110	15.6	396	5.4	2.5	15	6.9	240
CG20150227-B	150	4.3	5.1	130	17.2	436	6.5	2.9	20	9.2	240
CG20175227-B	175	4.9	5.1	130	17.2	436	7.6	3.4	21	9.6	240
CG20200227-B	200	5.7	5.1	130	17.2	436	8.6	3.9	22	10	240
CG20225227-B	225	6.4	6.3	160	17.3	439	9.7	4.4	29	13.2	240
CG20250227-B	250	7	6.3	160	17.3	439	10.8	4.9	30	13.6	240
CG20275227-B	275	7.8	6.3	160	17.3	439	11.9	5.4	31	14.1	240
CG20300227-B	300	8.5	6.3	160	17.3	439	13	5.9	32	14.5	240
CG20325227-B	325	9.2	7.1	180	17.2	437	14	6.4	37	16.9	240
CG20350227-B	350	10	7.1	180	17.2	437	15.1	6.9	38	17.4	240
CG20375227-B	375	10.6	7.1	180	17.2	437	16.2	7.4	39	17.8	240
CG20400227-B	400	11.3	7.1	180	19.4	493	17.3	7.9	43	19.5	240
CG20450227-B	450	12.7	7.1	180	19.4	493	19.4	8.8	45	20.4	240
CG20500227-B	500	14.1	7.1	180	27.4	696	21.6	9.8	55	24.8	240
CG20550227-B	550	15.6	7.1	180	27.4	696	23.8	10.8	57	25.7	240
CG20600227-B	600	17	7.1	180	27.4	696	25.9	11.8	60	27	240
CG20650227-B	650	18.4	7.1	180	27.4	696	28.1	12.8	62	28.3	240
CG20700227-B	700	19.8	7.1	180	27.4	696	30.2	13.7	64	29.2	240
<b>CG20750227-B</b>	750	21.2	7.1	180	<b>33.3*</b>	846	32.4	14.7	70	31.6	360
<b>CG20800227-B</b>	800	22.6	7.1	180	<b>33.3*</b>	846	34.6	15.7	73	33	360
<b>CG20850227-B</b>	850	24	7.1	180	<b>33.3*</b>	846	36.7	16.7	76	34.3	360
<b>CG20900227-B</b>	900	25.5	7.1	180	<b>33.3*</b>	846	38.9	17.7	77	35.1	360
<b>CG20950227-B</b>	950	26.9	7.1	180	<b>33.3*</b>	846	41	18.7	80	36.4	360
CG21000227-B	1000	28.3	10	254	21.4	544	43.2	19.6	93	42.2	360

\*Note height change - low profile version listed below.

LOW PROFILE MODELS											
CG20750227-B4	750	21.2	10	254	21.4	544	32.4	14.7	80	36.3	360
CG20800227-B4	800	22.6	10	254	21.4	544	34.5	15.6	83	37.6	360
CG20850227-B4	850	24	10	254	21.4	544	36.7	16.7	86	39	360
CG20900227-B4	900	25.5	10	254	21.4	544	38.9	17.7	88	39.9	360
CG20950227-B4	950	26.9	10	254	21.4	544	41	18.7	91	41.3	360

### MANUAL DISCHARGE CABLES

Fireboy High-Temperature Manual Discharge Cables allow for the manual discharge of an MA2 or GA system. Meets the U.S. Coast Guard flame-test guidelines. Use the shortest possible. Maximum 1440° of total bends.

MODEL	Ft	M	MODEL	Ft	M
E-4209-06	6	1.8	E-4209-36	36	10.4
E-4209-08	8	2.9	E-4209-40	40	12.1
E-4209-10	10	3	E-4209-45	45	13.6
E-4209-12	12	3.6	E-4209-50	50	15.2
E-4209-14	14	4.2	E-4209-55*	55	16.7
E-4209-16	16	4.8	E-4209-60	60	18.2
E-4209-18	18	5.4	E-4209-65*	65	19.7
E-4209-20	20	6	E-4209-70*	70	21.2
E-4209-22	22	6.6	E-4209-75*	75	22.8
E-4209-24	24	7.2	E-4209-80*	80	24.3
E-4209-26	26	7.9	E-4209-85*	85	25.8
E-4209-28	28	8.5	E-4209-90*	90	27.3
E-4209-30	30	9.1	E-4209-95*	95	28.8
E-4209-34	34	10.3	E-4209-100*	100	30

4/13/2020

### Fireboy High-Temperature Manual Discharge

Cables are fire-resistant and are required for all MA2 and GA Series installations. Sold separately. Shown to the right with optional angle adapter. CAA-0285-01



### READY TO INSTALL

Each Fireboy system includes a heavy-duty powder coated steel shelf bracket system, helm display and owner's manual.



► Ideal for engine rooms up to 1,500 ft³ (42.5 m³). Manual discharge when used with Fireboy Manual Discharge Cable which is sold separately. Vertical or horizontal mounting. Bracket and helm light included. Discharges at 175°F (79°C) or optional 155°F (68°C).

MODEL NUMBER	VOLUME PROTECTED		DIAMETER		TOTAL HEIGHT		AGENT WEIGHT		SHIPPING WEIGHT		SYSTEM PRESSURE
	ft³	m³	in	mm	in	mm	lbs	kgs	lbs	kgs	(@70° F) psi
MA20025227-BL	25	0.7	3.3	85	9.5	241	1.1	0.5	5	2.4	240
MA20050227-BL	50	1.4	3.3	85	13.3	338	2.2	1	8	3.7	240
MA20075227-BL	75	2.1	4.3	110	15.6	396	3.2	1.5	13	6	240
MA20100227-BL	100	2.8	4.3	110	15.6	396	4.3	2	14	6.4	240
MA20125227-BL	125	3.5	4.3	110	15.6	396	5.4	2.5	15	6.9	240
MA20150227-BL	150	4.3	5.1	130	17.2	436	6.5	2.9	20	9.2	240
MA20175227-BL	175	4.9	5.1	130	17.2	436	7.6	3.4	21	9.6	240
MA20200227-BL	200	5.7	5.1	130	17.2	436	8.6	3.9	22	10	240
MA20225227-BL	225	6.4	6.3	160	17.3	439	9.7	4.4	29	13.2	240
MA20250227-BL	250	7	6.3	160	17.3	439	10.8	4.9	30	13.6	240
MA20275227-BL	275	7.8	6.3	160	17.3	439	11.9	5.4	31	14.1	240
MA20300227-BL	300	8.5	6.3	160	17.3	439	13	5.9	32	14.5	240
MA20325227-BL	325	9.2	7.1	180	17.2	437	14	6.4	37	16.9	240
MA20350227-BL	350	10	7.1	180	17.2	437	15.1	6.9	38	17.4	240
MA20375227-BL	375	10.6	7.1	180	17.2	437	16.2	7.4	39	17.8	240
MA20400227-BL	400	11.3	7.1	180	19.4	493	17.3	7.9	43	19.5	240
MA20450227-BL	450	12.7	7.1	180	19.4	493	19.4	8.8	45	20.4	240
MA20500227-BL	500	14.1	7.1	180	27.4	696	21.6	9.8	55	24.8	240
MA20550227-BL	550	15.6	7.1	180	27.4	696	23.8	10.8	57	25.7	240
MA20600227-BL	600	17	7.1	180	27.4	696	25.9	11.8	60	27	240
MA20650227-BL	650	18.4	7.1	180	27.4	696	28.1	12.8	62	28.3	240
MA20700227-BL	700	19.8	7.1	180	27.4	696	30.2	13.7	64	29.2	240
MA20750227-BL	750	21.2	7.1	180	33.3*	846	32.4	14.7	70	31.6	360
MA20800227-BL	800	22.6	7.1	180	33.3*	846	34.5	15.6	73	33	360
MA20850227-BL	850	24	7.1	180	33.3*	846	36.7	16.7	76	34.3	360
MA20900227-BL	900	25.5	7.1	180	33.3*	846	38.9	17.7	77	35.1	360
MA20950227-BL	950	26.9	7.1	180	33.3*	846	41	18.7	80	36.4	360
MA21000227-BL	1000	28.3	10	254	21.4	544	43.2	19.6	93	42.2	360
MA21050227-BL	1050	29.7	10	254	21.4	544	45.3	20.5	96	43.5	360
MA21100227-BL	1100	31.1	10	254	21.4	544	47.5	21.6	99	44.9	360
MA21150227-BL	1150	33	10	254	27.5	699	49.7	22.6	108	49	360
MA21200227-BL	1200	34	10	254	27.5	699	51.8	23.6	111	50.3	360
MA21250227-BL	1250	35.4	10	254	27.5	699	54	24.5	113	51.3	360
MA21300227-BL	1300	36.8	10	254	27.5	699	56.1	25.4	116	52.6	360
MA21350227-BL	1350	38.2	10	254	27.5	699	58.3	26.5	119	54	360
MA21400227-BL	1400	39.6	10	254	27.5	699	60.5	27.5	121	54.9	360
MA21450227-BL	1450	41	10	254	27.5	699	62.6	28.5	124	56.2	360
MA21500227-BL	1500	42.5	10	254	27.5	699	64.8	29.5	126	57.2	360

\*Note height change - low profile version listed below.

LOW PROFILE MODELS											
MA20750227-BL4	750	21.2	10	254	21.4	544	32.4	14.7	80	36.3	360
MA20800227-BL4	800	22.6	10	254	21.4	544	34.5	15.6	83	37.6	360
MA20850227-BL4	850	24	10	254	21.4	544	36.7	16.7	86	39	360
MA20900227-BL4	900	25.5	10	254	21.4	544	38.9	17.7	88	39.9	360
MA20950227-BL4	950	26.9	10	254	21.4	544	41	18.7	91	41.3	360



Bracket for larger CG/MA extinguishers shown above.

### HALOTRON® CLEAN AGENT PORTABLE FIRE EXTINGUISHERS

- Model 70551 - 5 lb portable with a 5BC rating; includes a mounting bracket
- Model 71100 - 11 lb portable with a 1A10BC rating; less mounting bracket
- 11 lb mounting bracket 700228 - sold separately
- Two-year limited warranty
- Available in North America only



# ON BOARD, ON GUARD!



## THE FIREBOY ADVANTAGE

### TOTAL FLOODING, CLEAN AGENT FIRE EXTINGUISHER SYSTEMS

U.S. Coast Guard studies show that approximately 90% of all marine fires start in the engine compartment. The same studies show that only one in ten marine fires is successfully extinguished with typical dry-chemical portable fire extinguishers due to the inherent difficulties of fighting a fire manually. In addition, dry-chemical fire extinguishers leave behind a powder that can damage the engine and sensitive electronic equipment.

Since pioneering the use of Halon systems in the early 1970's, Fireboy has designed safe and effective engine room fire protection with no water or powdery residue. All systems are heat activated to discharge the clean agent gas automatically at 175°F (79°C) with no operator intervention required. With a Fireboy system, the fire extinguishing agent is released much faster than any possible crew response, resulting in a faster fire-out time and less damage.

### CONSTANT PROTECTION, NO HARMFUL RESIDUE

- ▶ Discharge is automatic at 175°F (79°C) or optional 155°F (68°C) for round-the-clock engine room fire protection
- ▶ Many marine insurance providers offer a discount to boaters who install a fixed fire extinguisher system (contact your insurer for details)
- ▶ Total flooding of the engine compartment in less than 10 seconds for fast smothering of the fire
- ▶ 3M Novec 1230 Fire Protection Fluid and HFC-227ea leave no harmful residue to clean up
- ▶ 3 year limited warranty
- ▶ All steel refillable cylinders (except systems discharged in a fire)
- ▶ Helm display LED "charged/discharged" status indicator panel included (see photo on page 2)
- ▶ Easy to read color coded pressure gauge on cylinder also identifies "charged/discharged" status
- ▶ Coverage from 25 ft<sup>3</sup> to 1,500 ft<sup>3</sup> in a broad array of increments provides maximum coverage at lowest cost
- ▶ Integrated shelf bracket mounting system (see photo on page 2)
- ▶ Safety lockout design to minimize accidental discharge during installation and maintenance
- ▶ Rugged industrial designed pressure gauge insures trouble free performance
- ▶ International system approvals (FM, USCG, CE, RINA, BV)
- ▶ HFC-227ea (Heptafluoropropane) and 3M Novec 1230 Fire Protection Fluid clean extinguishing agents are approved for marine use worldwide (EPA SNAP, European)
- ▶ Approved for Class B fires in engine rooms, machinery spaces and similar industrial applications

**FIREBOY® - XINTEX®** [fireboy-xintex.com](http://fireboy-xintex.com)



Fireboy-Xintex is an ISO 9001:2008 company

#### Approvals & Certifications

All Fireboy CG2/MA2 models are approved by Factory Mutual, U.S.C.G., RINA (ISO 9004 (2015)) and are CE certified (B.V.)

Fireboy-Xintex, Inc. 616.735.9380  
O-379 Lake Michigan Drive NW  
Grand Rapids, MI 49534

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Dorset BH166LT / United Kingdom



WPS 2.4	WD 2.9	WPS FLOW MASTER 5.0
WPS 2.9	WD 3.5	WPS UNO MAX 2.9 & 3.5
WPS 3.5	WD 5.2	WPS UNO 3.5 & 5.2
WPS 4.0		WPS DUO 10.4
WPS 5.2		

# Aqua Jet Water Pressure Systems

WATER PRESSURE SYSTEMS, WASH DOWN



At the heart of SPX Johnson Pump water pressure systems you will find our Aqua Jet pumps. Quiet and pulsation-free even at low speeds, the Aqua Jet five chamber diaphragm pump provides the perfect water pressure or wash down solution for mobile homes, campers, summer homes and boats.

Efficient and compact, Aqua Jet pumps are particularly suitable where low amperage and sound levels in relation to water flow are placed at a premium - such as in shower and kitchen applications. Compared to conventional three or four-chamber diaphragm pumps, the Aqua Jet demonstrates dramatically lower noise and water pulsation characteristics. Integrated pressure switch for automatic operation. It is recommended to install the Aqua Jet-pumps with an accumulator tank. Always use a PUMProtector inlet strainer before the pump intake.

Based in Charlotte, North Carolina, SPX is a multi-industry manufacturing company with operations in more than 35 markets worldwide, approximately \$5 billion in annual revenue and more than 14,000 employees.

SPX's innovative, world-class products and highly-engineered solutions are helping to meet the needs of a constantly developing world and growing global population. You'll find our innovative solutions in everything from dairy plants and power plants to oil and gas pipelines, the power grid and bus fare collection systems. SPX is really everywhere you look.

We help our customers around the globe expand and enhance their food and beverage, power and energy and industrial production processes.

### AQUA JET FEATURES

- Quiet operation
- Smooth flowing
- Self priming
- Integrated pressure switch turns pump on and off automatically when tap is opened and closed
- Dry running without damage
- Built-in by-pass valve which reduces the need for storage tank (only WPS 3.5)
- Built-in thermal protection
- Low power consumption
- Quick disconnect fittings

### 5 DIFFERENT MODELS; 12 V OR 24 V



WPS 2.4 & 2.9

WPS 3.5

WPS 4.0 & 5.2

MODEL	MOTOR	ORDER NO.	CAPACITY	PRESSURE CUT OFF *	FUSE SIZE	CONNECTION **
<b>WPS 2.4</b>	85 W 12V OR 24V	10-24604-03 12V	9 L/MIN (2.4 GPM)	2.8 BAR (41 PSI)	10 A (12 V) 5 A (24 V)	3/8" BSP / HOSE 1/2"
		10-24604-04 24V				
<b>WPS 2.9</b>	85 W 12V OR 24V	10-13405-03 12V	11 L/MIN (2.9 GPM)	2.8 BAR (41 PSI)	10 A (12 V) 5 A (24 V)	3/8" BSP / HOSE 1/2", 1/2" BSP / HOSE 3/4"
		10-13405-04 24V				
<b>WPS 3.5</b>	85 W 12V OR 24V	10-13395-03 12V	13 L/MIN (3.5 GPM)	2.8 BAR (41 PSI)	10 A (12 V) 5 A (24 V)	3/8" BSP / HOSE 1/2", 1/2" BSP / HOSE 3/4"
		10-13395-04 24V				
<b>WPS 4.0</b>	100 W 12V OR 24V	10-13406-03 12V	15 L/MIN (4.0 GPM)	2.8 BAR (41 PSI)	10 A (12 V) 5 A (24 V)	3/8" BSP / HOSE 1/2", 1/2" BSP / HOSE 3/4"
		10-13406-04 24V				
<b>WPS 5.2</b>	150 W 12V OR 24V	10-13406-07 12V	20 L/MIN (5.2 GPM)	2.8 BAR (41 PSI)	15 A (12 V) 8 A (24 V)	3/8" BSP / HOSE 1/2", 1/2" BSP / HOSE 3/4"
		10-13406-08 24V				

\* Cut off pressure 2.1 bar (30 psi) and 1.4 bar (20psi) available on request

\*\* NPT-connections available on request

### ALSO AVAILABLE AS COMPACT, ALL-IN-ONE UNITS

Including PUMProtector inlet strainer and a 2 liter prepressurized accumulator tank



**Aqua Jet Uno Max WPS 2.9 & 3.5**  
Medium demand unit with single Aquat Jet WSPump. Capacity 11 l/min or 13 l/min. Mounted on wooden panel.

**Aqua Jet Uno WPS 3.5 & 5.2**  
Medium demand unit with single Aquat Jet WSPump with a capacity of 13 l/min or 20 l/min.

**Aqua Jet Duo WPS 10.4**  
High demand unit with two parallel-connected Aquat Jet WSPumps with a capacity of 40 l/min.

MODEL	ORDER NO.	CAPACITY	PRESSURE CUT OFF*	FUSE SIZE	CONNECTION **
<b>WPS UNO MAX 2.9</b>	10-13410-01 12V	11 L/MIN (2.9 GPM)	2.8 BAR (41 PSI)	10 A (12 V) 5 A (24 V)	3/4" HOSE
	10-13410-02 24V				
<b>WPS UNO MAX 3.5</b>	10-13411-01 12V	13 L/MIN (3.5 GPM)	2.8 BAR (41 PSI)	10 A (12 V) 5 A (24 V)	3/4" HOSE
	10-13411-02 24V				
<b>WPS UNO 3.5</b>	10-13408-01 12V	13 L/MIN (3.5 GPM)	2.8 BAR (41 PSI)	10 A (12 V) 5 A (24 V)	3/4" HOSE
	10-13408-02 24V				
<b>WPS UNO 5.2</b>	10-13408-03 12V	20 L/MIN (5.2 GPM)	2.8 BAR (41 PSI)	15 A (12 V) 8 A (24 V)	3/4" HOSE
	10-13408-04 24V				
<b>WPS DUO 10.4</b>	10-13409-01 12V	40 L/MIN (10.4 GPM)	2.8 BAR (41 PSI)	25 A (12 V) 15 A (24 V)	3/4" HOSE
	10-13409-02 24V				

# Typical product applications

## VARIABLE FLOW

### AQUA JET FLOWMASTER WPS 5.0

The whisper quiet Flow Master 5.0 incorporates state-of-the-art electronics to automatically control pump speed. The digital controller adjusts water flow as the demand is increased and decreased while maintaining a very smooth flow. The unique variable flow feature of the Flow Master pump allows the pump to be mounted without an accumulator tank and still maintain an even flow regardless if one or multiple taps are being used.



#### WATER PRESSURE SYSTEMS

12V or 24V water pressure systems for busses, trains, recreational vehicles, leisure boats and summer homes

MODEL	ORDER NO.	CAPACITY	PRESSURE CUT OFF *	FUSE SIZE	CONNECTION **
<b>FLOW MASTER 5.0</b>	10-13329-03 12V	19 L/MIN (5 GPM)	3.5 BAR (50 PSI)	15 A (12 V)	3/8" BSP / HOSE 1/2", 1/2" BSP / HOSE 3/4"
	10-13329-04 24V			8 A (24 V)	

## AQUA JET WASH DOWN SYSTEMS

The quiet and pulsation-free Aqua Jet five-chamber diaphragm wash down pumps from SPX, Johnson Pump brand, provide the perfect wash down solution for cleaning recreational equipment. With a higher pressure of up to 5 bar, clean-up is faster and easier than ever before. Complete with trigger nozzle, PUMProtector inlet strainer and hose connections for 1/2" hose. Both BSP and NPT connections included.



#### EQUIPMENT AND DECK WASHDOWN

12V or 24V washdown pumps for cleaning recreational equipment and boat decks

### 3 DIFFERENT MODELS; 12 V OR 24 V

MODEL	MOTOR	ORDER NO.	CAPACITY	PRESSURE CUT OFF	FUSE SIZE	CONNECTION
WDS 2.9	90 W	10-24728-03 12V	11 L/MIN (2.9 GPM)	2.8 BAR (41 PSI)	10 A (12 V)	3/8" BSP / HOSE 1/2"
	12V OR 24V	10-24728-04 24V			5 A (24 V)	
WDS 3.5	120 W	10-13399-03 12V	13 L/MIN (3.5 GPM)	5 BAR (70 PSI)	15 A (12 V)	3/8" BSP / HOSE 1/2"
	12V OR 24V	10-13399-04 24V			8 A (24 V)	
WDS 5.2	185 W	10-13407-07 12V	20 L/MIN (5.2 GPM)	5 BAR (70 PSI)	20 A (12 V)	3/8" BSP / HOSE 1/2"
	12V OR 24V	10-13407-08 24V			10 A (24 V)	

# Aqua Jet Water Pressure Systems



Water Pressure Systems,  
Wash Down

## WATER PRESSURE SYSTEMS ACCESSORIES



Universal Strainer



Inlet Strainer

### PUMPROTECTOR™ STRAINER

The PUMProtector™ Universal and Inlet strainers from SPX Johnson Pump prevent debris and other particles from damaging the pump or passing through the system to the final outlet. They also make your life simpler.

Both of these strainers feature transparent covers for simple inspection, a wide variety of KlickTite™ port connectors for simple installation and removal, and high quality materials for simple maintenance. The design and connectors make it possible to remove the entire unit for thorough cleaning wherever it's most convenient. We recommend 40 mesh for water pressure and wash down pumps and 20 mesh for general purpose pumps.

MODEL	MESH SIZE	ORDER NO.	MAX. LIQUID TEMP.	MAX. TEMP. FOR DRINKING WATER	KLICKTITE™ CONNECTOR
UNIVERSAL	40	09-24652-01	50°C (120°F)	30°C (85°F)	2x 1/2" HOSE / 3/8" BSP, 2x 3/4" HOSE / 1/2" BSP
	20	09-24652-03			
INLET	40	09-24653-01	50°C (120°F)	30°C (85°F)	BUILT-IN KLICKTITE 1x 1/2" HOSE / 3/8" BSP, 1x 3/4" HOSE / 1/2" BSP
INLET	40	09-24653-03	50°C (120°F)	30°C (85°F)	BUILT-IN KLICKTITE, BULK PACK W/O CONNECTERS



### ACCUMULATOR TANK

With an accumulator tank incorporated in the system, the intervals between cut-in and cut-out will be longer when only small amounts of water are drawn off. Less wear and tear on the pump with fewer starts and stops.

The accumulator tank is pre-charged to 0.8 bar. Capacity 2 liters. maximum operating pressure 12 bar. It prolongs pump life and is also easy to fit to new or existing systems.

MODEL	ORDER NO.	CONNECTION
ACC. TANK	09-46839-01	1/2" HOSE
ACC. TANK	09-46839-02	3/4" HOSE



### INLINE STRAINER

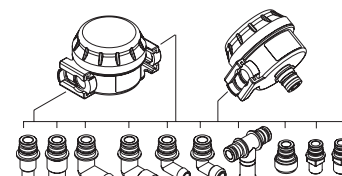
The Inline Strainer is recommended to be installed together with water pressure pumps to protect the pump from impurities. It is easy to disassemble for cleaning.

ORDER NO.	CONNECTION
48-80035	1/2" HOSE
48-80036	3/4" HOSE

### KLICKTITE™ PORT CONNECTOR ACCESSORIES

KlickTite™ port connectors are available for virtually any hose diameter and make it possible to remove the entire unit for thorough cleaning wherever it's most convenient. They also make it possible to drain the system quickly for effortless winterizing without the use of any tools.

ORDER NO.	KLICKTITE™ CONNECTOR	PCS/PACKAGE
09-46783	2x 1/2" HOSE AND 3/8" BSP	2
09-46784	2x 3/4" HOSE AND 1/2" BSP	2
09-46939	2x 90°, 3/4" HOSE	2
09-47087	2x 90°, 1/2" BSP	2
09-46938	2 90°, 1/2" HOSE	2
09-47026	2x 90°, 3/8" BSP	2
09-47096	2x 3/8" BSP	2
09-47098	2x 1/2" BSP	2
09-47092	1x T-CONNECTION, 3/4" BARB	1
09-47094	GARDEN HOSE ADAPTER	2



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SPX reserves the right to incorporate our latest design and material changes without notice or obligation.

Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information visit [www.spx.com](http://www.spx.com) and [www.johnson-pump.com](http://www.johnson-pump.com).

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# DEVTHANE® 379UVA

Aliphatic Urethane Gloss Enamel  
(White, Ready-Mixed & Custom Colors)

Cat. # 379BXXXX/379C0910

## PRODUCT DESCRIPTION

**Generic:** Aliphatic Acrylic Polyurethane

**General Description:** A high performance, two-component chemically-cured aliphatic urethane gloss enamel for use in areas where maximum gloss & color retention are required.

**Typical Uses:** For use on properly prepared and primed steel, concrete or steel floors, masonry, drywall, plaster, metal, concrete block, galvanized, aluminum, poured concrete, and glazed brick. Ideal for use on exterior or interior structural steel, piping, metal buildings, control cabinetry, conveyors, pumps, storage tank exteriors, motors, machinery, and transportation vehicles.

## SPECIFICATION DATA

**Color:** White (379K1000), ready-mixed & custom colors

**Finish:** Gloss (90 units @ 60°)

**Reduction Solvent:** T-9 or T-17 Thinner – see Thinning

**Clean-up Solvent:** T-9 Thinner

**Weight/Gallon:** 11.0 lbs./gal. (1.32 kg/L) – varies with color

**VOC (EPA 24):** 2.60 lbs./gal. (311 g/L) – varies with color

**Solids By Volume (ASTM 2697-7 days):** 63% ± 2%

**Theoretical Coverage at 1.0 Mil (25 microns) Dry:** 1011 sq. ft./gal. (24.9 m<sup>2</sup>/L)

**Recommended Film Thickness:** 2.0-3.0 mils (50-75 microns) dry – 3.2-4.8 mils (80-120 microns) wet

**Systems:** Please consult the appropriate system guide, the particular job specification or your ICI Paints' Representative for proper systems using this product. Systems must be selected considering the particular environment involved.

**Minimum Dry Time (ASTM D 1640):** 2 mils (50 microns) DFT

Substrate Temperature	40°F (4°C)	60°F (16°C)	80°F (27°C)	100°F (38°C)
Minimum Recoat	10 Hours	6 Hours	3 Hours	4 Hours
Dry Hard Maximum Recoat	>32 Hours	24 Hours	16 Hours	12 Hours
Self	2 Weeks	2 Weeks	2 Weeks	7 Days

Ventilation, film thickness, humidity, thinning and other factors can influence the rate of dry.

**Warning:** The above table provides general guidelines only. Always consult your ICI Paints Representative for appropriate recoat windows since the maximum aged recoat time of this product may be significantly shortened or lengthened by a variety of conditions, including, but not limited to humidity, surface temperature, and the use of additives or thinners. The use of accelerators or force curing may shorten the aged recoat of individual coatings. The above recoat windows may not apply if recoating with a product other than those listed above. If the maximum aged recoat window is exceeded, please consult your ICI Paints Representative for appropriate recommendations to enhance adhesion. Failure to observe these precautions may result in intercoat delamination.

**Shelf Life:** Over 12 months at 77°F (25°C) – unopened.

**Mix Ratio By Volume:** 4 (base): 1 (converter) – see mixing instructions.

**Induction:** None

**Pot Life:** 4 hours @ 77°F (25°C)

## FEATURES

**Advantages:**

- Exceptional gloss and color retention
- Excellent abrasion and chemical resistance
- Easily applied by brush, roller or spray
- Wide color selection, including safety colors
- Excellent resistance to marring, chipping, and scratching
- Contains ultraviolet light absorber

**Graffiti Resistance:**

Excellent resistance to most graffiti materials such as spray paint, magic markers and lipstick. Contact your ICI Paints' Representative for more information on the graffiti removing cleaner to service your needs.

**Limitations of Use:** Color may change as temperature approaches 250°F (121°C) limit, but the film will remain intact.

## PERFORMANCE DATA

**Adhesion:** (ASTM D 4541) – Excellent

**Salt Spray Resistance:** (ASTM B 117) – Excellent

**Abrasion Resistance:** (ASTM D 4060) – Excellent

**Humidity Resistance:** (ASTM D 4585) – Excellent

**Exterior Exposure:** 45° South Florida – Excellent

**Service Temperature Limits:** 250°F (121°C) dry

**Hardness:** (ASTM D 3363), 7 day cure@77°F (25°C) 4H

**Chemical Resistance:** (ASTM D 1308 – 24 hour contact) resists splash and spillage of alkalis, salts, moisture, oils, greases, foodstuffs and detergents.

**Stain Resistance:** (ASTM D 1308 – 1 week contact) Excellent.

Resists stains such as crayon, lipstick, coffee, soil medium, shoe polish, grape juice, ink pen, marker, and spray paint.

**DANGER! FLAMMABLE. HARMFUL OR FATAL IF SWALLOWED.** Read label and Material Safety Data Sheet Prior to Use. See other cautions on last page. DSF3-0696

9 FINISHES SPECIAL COATINGS (9800)

DEVOE COATINGS



DEVOE COATINGS

9 FINISHES SPECIAL COATINGS (9800)

## GENERAL SURFACE PREPARATION

All surfaces must be sound, clean, dry, and free of oil, grease, mildew, form release agents, laitance, and foreign matter. To insure the best appearance, the primer or undercoat should be smooth and free of any surface defects such as runs, dry spray or heavy orange peel. Use only products that are in compliance with local VOC regulations.

**New Surfaces:** Steel – Clean and prime with DEVTRAN® 205, DEVTRAN 220, DEVTRAN 224HS, BAR-RUST® 231, BAR-RUST 233H, BAR-RUST 235, or TRU-GLAZE- WB™ 4030 primers. Concrete Block – Fill with DEVTRAN 220, DEVTRAN 224HS primers or TRU-GLAZE-WB 4015 or BLOXFIL® 4000 blockfillers. Fiberglass – Solvent wipe, scuff sand and solvent wipe again. Prime with DEVTRAN 201 epoxy. Concrete Floors, Poured Concrete – Cure at least 30 days. pH must be 10.0 or lower before painting. Acid etch or abrasive blast slick, glazed concrete or concrete with laitance. Prime with DEVTRAN 220, DEVTRAN 224HS, BAR-RUST 231, BAR-RUST 233H, BAR-RUST 235, or TRU-GLAZE- WB 4030 primers or use PRE-PRIME™ 167 Penetrating Sealer. Galvanized Steel and Aluminum – Remove dirt and oils by solvent cleaning

or with DEVPREP® 88 Cleaner or other suitable cleaner followed by a thorough water rinsing. Prime with DEVTRAN 205, DEVTRAN 201 or DEVTRAN 203 epoxy primers. Galvanized substrates must be test patched for adhesion prior to use due to the high variability of surface treatments.

**Previously Painted Surfaces:** Remove loose and peeling paint. Scuff sand glossy areas. Old coatings should be tested for lifting and bleeding. If they lift or bleed, remove them. Prime bare areas with a primer specified under New Surfaces.

**WARNING!** If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to [www.epa.gov/lead](http://www.epa.gov/lead).

## DIRECTIONS FOR USE

**Tinting:** Tint the appropriate base with CHROMA-CHEM® 844 colorants. (Do not use water based or other colorants.) Add colorants to only the base portion. Mix thoroughly before adding the converter portion.

**Thinning:** Thinning is not normally required or desired, and excessive thinning can adversely affect application and appearance properties. However, at lower temperatures, small amounts (5% or less) of T-9 Thinner may be added depending on local VOC and air quality regulations. Small amounts (5% or less) of T-17 Thinner will improve roller or brush application on hot substrates. For end uses such as transportation vehicles where the smoothest, orange peel-free appearance is desired, additional thinning may be needed.

**Mixing:** DEVTHANE® 379UVA Enamel is a two-component product supplied in 5 gallon or 1 gallon kits, which contain the proper ratio of ingredients. The entire contents of each container must be mixed together. It is important that all mixing equipment is free of moisture and that moisture does not contaminate the coating. Mix the base portion to obtain a smooth, homogeneous condition. After mixing the base portion, add the converter slowly with continued agitation. Mix thoroughly. The pot life of the mixed material is 4 hours at 77°F (25°C). Higher temperatures will reduce working life of the coating; lower temperatures will increase it. Avoid storing or placing containers in direct sunlight.

**Application:** Apply by airless spray, air spray, roller or brush. For airless spray, any air, electric, or gas operated airless sprayer capable of 3,000 psi (207 bars) and able to support .011" to .017" tip sizes can be used. Multiple guns and long fluid lines require pumps with adequate capacity. For air spray application, use a professional grade conventional gun with a 0.70" or larger fluid tip. Adjust fluid and air pressure to get a good spray pattern.

**Note:** Be sure all spray equipment and fluid lines are clean, and free of water or non-compatible solvents. For brush application, use good quality, dry, clean brushes. For roller application use new, short nap mohair rollers. Do not apply over wet surfaces or under very humid conditions where condensation or fog could settle on the coating during the cure process. Brushing and rolling may require multiple coats to achieve correct film thickness and/or hiding.

**Spreading Rate:** For maximum protection in corrosive areas, apply at 335 sq. ft. per gallon (8.2 m<sup>2</sup>/L) or 3.0 mils (75 microns) dry-4.8 mils (120 microns) wet. In mild to moderate exposures, apply at 500 sq. ft. per gallon (12.25 m<sup>2</sup>/L) or 2.0 mils (50 microns) dry-3.2 mils (80 microns) wet. Make allowance for any losses due to over-spray or surface irregularities.

**Dry Time (ASTM D 1640):** At 80°F (27°C) & 50% R.H., dries to recoat in 3 hours and dries hard in 16 hours.

**Clean-up:** Use T-9 Thinner.

**Cure Acceleration:** DEVTHANE Cure Accelerator 070A0000 may be used to accelerate cure of this urethane at or below 40°F (5°C). 070A0000 is prepackaged (5 fluid ounces in a one-half pint container) for field addition. The addition of one to two ounces per gallon of urethane (one to two containers per five gallons of urethane) will decrease the dry hard time approximately one-third to one-half respectively. The pot life will be reduced one-half to three-fourths.

**Ultraviolet Light Absorbers (UVA):** DEVTHANE Ultraviolet Light Absorber 080A0000 is already contained in DEVTHANE 379UVA Enamel. Additional Ultraviolet Light Absorber is not required nor desired.

## PRECAUTIONS

**DANGER! FLAMMABLE LIQUID AND VAPOR. HARMFUL OR FATAL IF SWALLOWED. ASPIRATION HAZARD - CAN ENTER LUNGS AND CAUSE DAMAGE. HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION. OVEREXPOSURE MAY CAUSE BLOOD, LIVER, KIDNEY DAMAGE. USE ONLY WITH ADEQUATE VENTILATION. KEEP OUT OF THE REACH OF CHILDREN. NOTICE: Products in this series contain solvents.** Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. For emergency information call (800) 545-2643. **Note: These warnings encompass the product series. Prior to use, read and follow product-specific MSDS and label information.** Keep away from heat, sparks and flame. **Do not smoke.** Vapors may ignite. Extinguish all flames, burners, stoves, heaters and pilot lights and disconnect all electrical motors and appliances before use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. If sanding is done, wear a dust mask to avoid breathing of sanding dust. Do not breathe vapors or spray mist. Ensure fresh air entry during application and drying. Avoid contact with eyes and skin. If you experience eye watering, headaches, or dizziness, leave the area. If properly used, a respirator may offer additional protection. Obtain professional advice before using. Close container after each use. **FIRST AID:** For skin contact, wash thoroughly with soap and water. If any product remains, gently rub with petroleum jelly, vegetable or mineral/baby oil then wash again with soap and water. Repeat as needed. Remove contaminated clothing. For eye contact, flush immediately with plenty of water for at least 15 minutes. **Get medical attention.** If swallowed, **get medical attention immediately.** If inhalation causes discomfort, remove to fresh air. If discomfort persists or breathing difficulty occurs, get medical attention. **KEEP FROM FREEZING.** DS174-1005

## SHIPPING

Flash Point:	80°F (27°C)	
Packaging:	1 gallon kit (3.785L)	5 gallon kit (18.925L)
	0.80 gallon base	4.00 gallon base
	0.20 gallon converter	1.00 gallon converter

Shipping Weight:	4 - 1 gallon kits - 49 lbs. (24.5 kg)
	5 gallon kit - 59 lbs. (26.8 kg)

379UVA (05/07)  
Add Stock #68659H

\*CHROMA-CHEM is a Registered Trademark of Degussa GmbH.



Strongsville, Ohio U.S.A.  
800-654-2616  
[www.devecoatings.com](http://www.devecoatings.com)

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# BAR-RUST® 235

## Multi-Purpose Epoxy Coating

Cat. # 235BXXXX/235C0910 (235C0980 for tint bases)

### PRODUCT DESCRIPTION

Generic: Advanced Technology Epoxy

General Description: A high performance, multipurpose, surface tolerant, two-component chemically-cured epoxy semi-gloss coating.

Typical Uses: For use on properly prepared steel or masonry surfaces including immersion (non-potable water) service. Ideal for structural steel, piping, storage tank exteriors, machinery, and equipment in petroleum refineries, pulp and paper mills, chemical and fertilizer plants, and sewage treatment plants.

Special Qualifications: Performance alternate for Federal Specifications TT-C-550 and TT-C-545, Mil-P-24441-Type I & II, Mil-C-22750D-Type I, and Mil-P-23377E-Type I, Mil-P- 23236B-Type I & IV, Class 2, and Mil-P-24647B. Meets AWWA D102.

### SPECIFICATION DATA

Color: Off White, ready-mixed and custom colors

Finish: Semi-Gloss

Reduction Solvent: T-10 Thinner. For application over aged alkyds use T-5 Thinner.

Clean-up Solvent: T-10 Thinner

Weight/Gallon: 11.0 lbs./gal. (1.3 kg/L) – varies with color

VOC (EPA 24): 2.40 lbs./gal. (292 g/L) – varies with color

Solids By Volume (ASTM D 2697 – 7 days): 68% ± 2%

Theoretical Coverage at 1.0 Mil (25 microns) Dry: 1091 sq. ft./gal. (28.0 m<sup>2</sup>/L)

Recommended Film Thickness: 4.0-8.0 mils (100-200 microns) dry – 5.9-11.7 mils (147-293 microns) wet. (Make allowances for loss due to overspray & irregular surfaces.)

Systems: Please consult the appropriate system guide, the particular job specification or your ICI Paints Representative for proper systems using this product. Systems must be selected considering the particular environment involved.

Minimum Dry Time (ASTM D 1640): At 5 mils (125 microns) DFT

Temperature	20°F (-7°C)	40°F (4°C)	60°F (16°C)	80°F (27°C)	120°F (49°C)
Minimum Recoat	28 Hours	11 Hours	6 Hours	3 Hours	2 Hours
Dry Hard	46 Hours	18 Hours	9 Hours	5 Hours	3 Hours
Maximum Recoat					
Self	30 Days	30 Days	30 Days	30 Days	3 Days
359DTM,359H,389	7 Days	6 Days	5 Days	5 Days	1 Day
389H,378,378H,					
379UVA,379H,					
224HS,229H					

Ventilation, film thickness, humidity, thinning and other factors can influence the rate of dry.

Warning: The above table provides general guidelines only. Always consult your ICI Paints Representative for appropriate recoat windows since the maximum aged recoat time of this product may be significantly shortened or lengthened by a variety of conditions, including, but not limited to humidity, surface temperature, and the use of additives or thinners. The use of accelerators or force curing may shorten the aged recoat of individual coatings. The above recoat windows may not apply if recoating with a product other than those listed above. If the maximum aged recoat window is exceeded, please consult your ICI Paints Representative for appropriate recommendations to enhance adhesion. Failure to observe these precautions may result in intercoat delamination.

Shelf Life: Over 24 months at 77°F (25°C) – unopened

Mix Ratio By Volume: 4(base):1(converter)–see mixing instructions.

Induction: None

Pot Life: 4.5 hours @ 77°F (25°C) & 50% R.H.

### FEATURES

Advantages:

- Exceptional corrosion protection
- Suitable for salt & fresh water immersion
- Low temperature cure to 0°F (-18°C)
- Surface tolerant
- Good adhesion to damp surfaces
- Self-priming for steel & masonry substrates
- Fast Recoat
- High solids – high film build
- Low VOC

Limitations of Use: Exterior exposure will cause a color change, early dulling, and loss of gloss, but this does not affect protective properties. Epoxy coatings may yellow during application and cure if exposed to the combustion by-products of improperly vented fossil fuel burning heaters. Commonly finished with DEVTHANE® Urethane Enamel for maximum exterior color & gloss retention. Do not use for fuel or solvent immersion.

### PERFORMANCE DATA

Adhesion: (ASTM D 4541) – Excellent

Salt Spray Resistance: (ASTM B 117) – Excellent

Direct Impact Resistance: (ASTM D 2794) – Very Good

Abrasion Resistance: (ASTM D 4060) – Excellent

Humidity Resistance: (ASTM D 4585) – Excellent

Water Immersion: (ASTM D 1308) – Excellent

Service Temperature Limits: 250°F (121°C) dry

Hardness: (ASTM D 3363), 7 day cure @ 77°F (25°C) 3H

Chemical Resistance: (ASTM D 1308 – 24 hr. contact) Excellent. Resists splash and spillage of alkalis, salts, moisture, oils, greases, foodstuffs and detergents, 50% Sodium Hydroxide, 28% Ammonia, 5% Trisodium Phosphate, 25% Citric Acid, 25% Lactic Acid, 10% Sulfuric Acid, Crude Oil, 10% Hydrochloric Acid, 20% Tannic Acid, 5% Sodium Chloride, 10% Ammonium Hydroxide, sewage.

Read Label and Material Safety Data Sheet Prior to Use. See other cautions on last page. DSF1-0690

FINISHES SPECIAL COATINGS (9800)

DEVOE COATINGS



DEVOE COATINGS

FINISHES SPECIAL COATINGS (9800)

## GENERAL SURFACE PREPARATION

Surfaces must be dry, clean, free of oil, grease, form release agents, curing compounds, laitance, other foreign matter and be structurally sound. Remove all loose paint, mortar spatter, mill scale, and rust. All direct to metal coatings provide maximum performance over near white metal blasted surfaces. There are situations and cost limitations which preclude blasting. BAR-RUST® 235 epoxy was designed to provide excellent protection over less than ideal surface preparation. The minimum standard for non-immersion service is SSPC-SP2 or ISO-SI2; for immersion service the minimum standard is SSPC-SP3 or ISO-SI3. These minimum surface preparation standards apply to steel that has been previously abrasive blasted, coated and deteriorated. Where very rusty surfaces still remain after cleaning use PRE-PRIME™ 167 Sealer before application of BAR-RUST 235 epoxy. All direct to metal coatings provide maximum performance over near white blasted surfaces.

**New Surfaces:** Steel – Blast to near-white metal surface cleanliness in accordance with SSPC-SP10 or ISO-Sa2 1/2 for immersion service, or commercial blast cleanliness in accordance with SSPC-SP6 or ISO-Sa2 for non-immersion service. Blast profile on steel should be 1.5 to 2.5 mils (38-62 microns) in depth and be of a sharp, jagged nature as opposed

To a “peen” pattern (from shot blasting). Surfaces must be free of grit dust. Concrete Block – Remove loose aggregate and repair voids. Fill with this product or TRU-GLAZE-WB™ 4015 blockfiller. Concrete Floors, Poured Concrete – Cure at least 30 days. Acid etch or abrasive blast slick, glazed concrete or concrete with laitance. Prime with PREPRIME 167 sealer or this coating. Galvanized Steel – Remove dirt and oils by solvent cleaning or with DEVPREP® 88 Cleaner or other suitable cleaner followed by a thorough water rinsing. Prime with DEVRAN® 203 or DEVRAN 205 epoxy primers for non-immersion. For immersion or severe moisture condition, abrasive blasting is recommended before priming with this product or DEVRAN 201 epoxy primer.

**Previously Painted Surfaces:** Old coatings should be tested for lifting. If lifting occurs, remove the lifted coating. Otherwise scuff sand glossy areas and aged epoxy coatings. Clean aged epoxy or urethane coatings with DEVPREP® 88 Cleaner or other suitable cleaner. Remove cracked and peeling paint. Prime bare areas with primer specified under New Surfaces. If thinning is required, thin with T-5 thinner only when used over aged alkyd coatings. Use only products that are in compliance with local VOC regulations.

## DIRECTIONS FOR USE

**Tinting:** Tint the appropriate base with CHROMA-CHEM® 844 colorants. (Do not use water based or other colorants.) Add colorants to only the base portion. Mix thoroughly before adding the converter portion.

**Thinning:** Thinning is not normally required or desired; however, at extreme environmental conditions, small amounts (15% or less by volume) of T-10 thinner can be added depending on local VOC and air quality regulations. When using BAR-RUST 235 epoxy over aged alkyds, use T-5 thinner. Any solvent addition should be made after the two components are thoroughly mixed.

**Mixing:** BAR-RUST 235 epoxy is a two component product supplied in 5 gallon and 1 gallon kits that contain the proper ratio of ingredients. The entire contents of each container must be mixed together. Power mix both portions first to obtain a smooth, homogeneous condition. Then add the converter slowly with continued agitation. After the converter add is complete, continue to mix slowly. Avoid storing or placing containers in direct sunlight.

**Application:** Spray is preferred for appearance and film build control. For air spray application, use a fluid tip of .070" or larger, a professional grade conventional gun and an air cap with good break-up. The fluid pressure should be kept low

with just enough air pressure to get good break-up of the coating. Excessive air pressure can cause over-spray problems. Where airless equipment is used, an airless spray pump capable of 3,000 psi (207 bars) and .019" to .025" tip size will provide a good spray pattern. Ideally, fluid hoses should not be less than 3/8" ID and not longer than 50 feet to obtain optimum results. Longer hose length may require an increase in pump capacity, pressure, and/or thinning. BAR-RUST 235 epoxy may also be applied by brush or roller. Care should be taken that proper and uniform thicknesses are obtained. For roller work use a clean synthetic roller with 1/4"-1/2" nap. New rollers should be thoroughly wet with the specified thinner and spun vigorously to remove loose fibers. Brushing and rolling may require multiple coats to achieve correct film thickness and/or hiding.

**Spreading Rate:** Apply at 130-250 ft<sup>2</sup>/gal. (3-6m<sup>2</sup>/L) depending on surface texture and porosity. Make allowance for any losses due to over-spray or surface irregularities.

**Clean-up:** Use T-10 Thinner or other appropriate thinner in compliance with local VOC regulations.

## PRECAUTIONS

**DANGER! COMBUSTIBLE LIQUID AND VAPOR. CAUSES EYE AND SKIN BURNS. HARMFUL OR FATAL IF SWALLOWED. ASPIRATION HAZARD - CAN ENTER LUNGS AND CAUSE DAMAGE. HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DIZZINESS, HEADACHE OR NAUSEA. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. OVEREXPOSURE MAY CAUSE BLOOD, LIVER, KIDNEY DAMAGE. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE LUNG CANCER AND OTHER LUNG DAMAGE IF INHALED. CONTAINS MICA WHICH MAY CAUSE PNEUMOCONIOSIS. USE ONLY WITH ADEQUATE VENTILATION. KEEP OUT OF THE REACH OF CHILDREN.**

**NOTICE:** Products in this series contain solvents. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. For emergency information call (800) 545-2643. **Note:** These warnings encompass the product series. Prior to use, read and follow product-specific MSDS and label information. Keep away from heat, sparks and flame. **Do not** smoke. Vapors may ignite. Extinguish all flames, burners, stoves, heaters and pilot lights and disconnect all electrical motors and appliances before use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. If sanding, wear a dust mask to avoid breathing of sanding dust. Do not breathe vapors or spray mist. Ensure fresh air entry during application and drying. Avoid contact with eyes and skin. If you experience eye watering, headaches, or dizziness, leave the area. If properly used, a respirator may offer additional protection. Obtain professional advice before using. Close container after each use. **FIRST AID:** For skin contact, wash thoroughly with soap and water. If any product remains, gently rub with petroleum jelly, vegetable or mineral/baby oil then wash again with soap and water. Repeat as needed. Remove contaminated clothing. For eye contact, flush immediately with plenty of water for at least 15 minutes. **Get medical attention.** If swallowed, **get medical attention immediately.** If inhalation causes discomfort, remove to fresh air. If discomfort persists or breathing difficulty occurs, get medical attention. **KEEP FROM FREEZING.**

DS238-0706

## SHIPPING

Flash Point:	100°F (38°C)	
Packaging:	1 gallon kit (3.785L)	5 gallon kit (18.925L)
	0.80 gallon base	4.00 gallon base
	0.20 gallon converter	1.00 gallon converter

Shipping Weight::	4 - 1 gallon kits - 45 lbs. (20.4 kg)
	5 gallon kit - 56 lbs. (25.4 kg)

235 (05/07)  
Ad Stock #68637F

\*CHROMA-CHEM is a Registered Trademark of Degussa GmbH.



Strongsville, Ohio U.S.A.  
800-654-2616  
www.devoecoatings.com

**LIMITATION OF LIABILITY:** To the best of our knowledge, the technical data contained herein are true and accurate at the date of issuance but are subject to change without prior notice. We guarantee our product to conform to the specifications contained therein. WE MAKE NO OTHER WARRANTY OR GUARANTEE OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE. Liability, if any, is limited to replacement of the product or refund of the purchase price. LABOR OR COST OF LABOR AND OTHER CONSEQUENTIAL DAMAGES ARE HEREBY EXCLUDED.

## MANUFACTURER'S LIMITED WARRANTY

*This warranty applies to new Aquatic Plant Harvesters, Aquatic Vegetation Cutters, Aquatic Weed Tow Boats, Trash Hunters, Amphibious Excavators and Support Equipment supplied by Aquarius Systems, a Division of D&D Products Inc., hereafter referred to as "D&D Products." D&D Products warrants the equipment to be free from defects in material and workmanship for a period of one (1) year from the date of delivery of the equipment to the customer or end user of the product/s.*

*Any parts will be either replaced or repaired free of charge if there is sufficient proof that the cause of breakage during the period of warranty is due to defect in the material or manufacturing. Any parts replaced will become the property of D&D Products. Disassembling and reassembling costs will be charged to the customer.*

*In every instance where an original supplier's guarantee or warranty exists (i.e.: engines, pumps, motors, etc.), the liability of D&D Products shall not exceed the duration or conditions of the original supplier's guarantee or warranty.*

*As a condition of this warranty, the customer shall promptly notify D&D Products in writing, specifically describing the part alleged to be defective and the specific manner in which it is alleged to be defective. Upon request of D&D Products, the customer shall ship said part to D&D Products at the address specified, all carriage and freight costs prepaid, for inspection by D&D Products and the original supplier or manufacturer, as applicable.*

*D&D Products' obligations under this warranty, upon its determination that such defectiveness did in fact exist within the warranty period provided, shall be limited to either repairing or replacing said defective part, in its sole discretion, but in no event shall it be responsible for any other charges or costs incurred by the customer in the replacement or repair of the defective part.*

*Examples of specific consumable items not covered by this warranty are parts made of rubber, leather, wood or glass; all cutting components; cables; conveyor belting; and any material subject to corrosion. Proper maintenance of these parts and equipment is the responsibility of the customer, per the verbal and written maintenance instructions provided by D&D Products, as requested.*

*D&D Products' liability does not extend to any condition caused by or arising from neglect; misuse or abnormal use in any manner; or caused by an accident, sabotage or force majeure; or from failure to properly maintain and service the product or regularly inspect it; or where it has been modified or altered in any way so as to affect the stability or reliability of the equipment.*

*This warranty is expressly in lieu of all other warranties expressed, implied or statutory in origin, including any implied warranty of merchantability or fitness on the part of D&D Products. No representative or agent of D&D Products has the authority to change the terms of this warranty in any manner whatsoever. No assistance by D&D Products or its representatives or agents in the repair or operation of the products covered by this agreement shall constitute a waiver of this warranty, nor shall such assistance extend or revive it.*

*Any claims against this warranty will be denied if repairs are carried out by any unauthorized repair person, or if a machine is sold to a third party without the consent of D&D Products. Pending warranty claims do not entitle the buyer to delay payments due and owing to D&D Products or any of its sales representatives or agents.*

*Warranty claims should be submitted to: Aquarius Systems, Division of D&D Products Incorporated, PO Box 215, 200 North Harrison Street, North Prairie, Wisconsin 53153; Phone: 800-328-6555 or 262-392-2162; Fax: 262-392-2984; Email: info@aquarius-systems.com.*

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/3/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> R&R Insurance Services Inc N14 W23900 Stone Ridge Drive Waukesha WI 53188		<b>CONTACT NAME:</b> Jennifer Bellante, CISR <b>PHONE (A/C, No, Ext):</b> (262)574-7000 <b>FAX (A/C, No):</b> (262)574-7080 <b>E-MAIL ADDRESS:</b> Jennifer.Bellante@rrins.com	
<b>INSURED</b> D&D Products Inc 200 North Harrison Street PO Box 215 North Prairie WI 53153-0215		<b>INSURER(S) AFFORDING COVERAGE</b> <b>INSURER A:</b> The Travelers Indemnity Company of <b>INSURER B:</b> Travelers Property Casualty <b>INSURER C:</b> Travelers Property Casualty <b>INSURER D:</b> <b>INSURER E:</b> <b>INSURER F:</b>	
		<b>NAIC #</b> 25682 25674 36161	

### COVERAGES

CERTIFICATE NUMBER: CL201397756

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			Y6303L746072TCT19 CGD246-Additional Insd CGD458-WOS	1/1/2020	1/1/2021	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO ALL OWNED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS			BA3L747529 CAT353-Additional Insured CAT353-WOS	1/1/2020	1/1/2021	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ limit \$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB <input checked="" type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 0			CUP3L975667	1/1/2020	1/1/2021	EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ 2,000,000
A	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	UB3L748077	1/1/2020	1/1/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

EPLI limit \$1,000,000 with \$2,500 deductible  
Fiduciary limit \$1,000,000  
Third Party EPLI Coverage limit \$1,000,000 w/ \$2,500 deductible  
James Dauffenbach & David Dauffenbach are excluded from Workers Compensation.

### CERTIFICATE HOLDER

### CANCELLATION

** FOR INFORMATIONAL PURPOSES ONLY **	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE Mike Walden/JB695
---------------------------------------	--

# Wisconsin Business Tax Registration Certificate

**Expiration date:** April 30, 2020

**Legal/real name:** D & D PRODUCTS INCORPORATED

- This certificate confirms that you are registered with the Wisconsin Department of Revenue for the tax types shown below.
- This registration certificate is not a seller's permit, and should not be used as proof that you hold a seller's permit.
- You may not transfer this certificate to any other individual or business.

<b>Tax Type</b>	<b>Account Type</b>	<b>Number</b>
Sales & Use Tax	Sales & Use Tax	456-0000286605-03
Withholding Tax	Withholding Tax	036-0000286605-04

United States of America  
State of Wisconsin

DEPARTMENT OF FINANCIAL INSTITUTIONS  
Division of Corporate & Consumer Services



To All to Whom These Presents Shall Come, Greeting:

I, Patti Epstein, Administrator of the Division of Corporate and Consumer Services, Department of Financial Institutions, do hereby certify that

**D & D PRODUCTS INCORPORATED**

is a domestic corporation or a domestic limited liability company organized under the laws of this state and that its date of incorporation or organization is February 24, 1966.

I further certify that said corporation or limited liability company has, within its most recently completed report year, filed an annual report required under ss. 180.1622, 180.1921, 181.1622 or 183.0120 Wis. Stats., and that it has not filed articles of dissolution.



IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the Department on March 27, 2020.

*Patti Epstein*

PATTI EPSTEIN, Administrator  
Division of Corporate and Consumer Services  
Department of Financial Institutions

DFI/Corp/33

**To validate the authenticity of this certificate**

Visit this web address: <http://www.wdfi.org/apps/ccs/verify/>

Enter this code: **263124-0CD55D69**

4/13/2020

BidSync

p. 103



STATE OF WISCONSIN  
DEPARTMENT OF ADMINISTRATION

Tony Evers, Governor  
Joel Brennan, Secretary  
James M. Langdon, Administrator

CERTIFICATION

WI-8866 - WBE

The Department of Administration  
Division of Enterprise Operations  
having determined that

**D&D Products Inc.**

*Has successfully met the certification requirements as outlined in  
Wisconsin Administrative Code Adm. 83 and the policies adopted thereunder,  
hereby grants the designation of*

**Woman-Owned Business Enterprise**

and is recognized as such until the expiration of registration and certification on

**Expiration: March 21, 2022**

**NAICS Codes:**

- 221310 Water Supply and Irrigation Systems
- 333111 Farm Machinery and Equipment Manufacturing
- 333120 Construction Machinery Manufacturing
- 333922 Conveyor and Conveying Equipment Manufacturing

**NIGP Codes:**

See online business directory at: <https://wisdp.wi.gov>

**Product:**

100% MANUFACTURING of Surface Water Management Equipment under the Aquarius Systems trade name, which includes: Aquatic plant harvesters, marine trash skimmers, amphibious excavators, canal cleaning boats, and the Swamp Devil aquatic vegetation cutter. We also build large bulk loading conveyors which fill railroad cars and trucks with dry products and the trade name for that equipment line is Dynatek.

Authorized By:   
Libby Schmiedlin, Equal Opportunity Specialist



# Aquarius Systems' Parts & Service

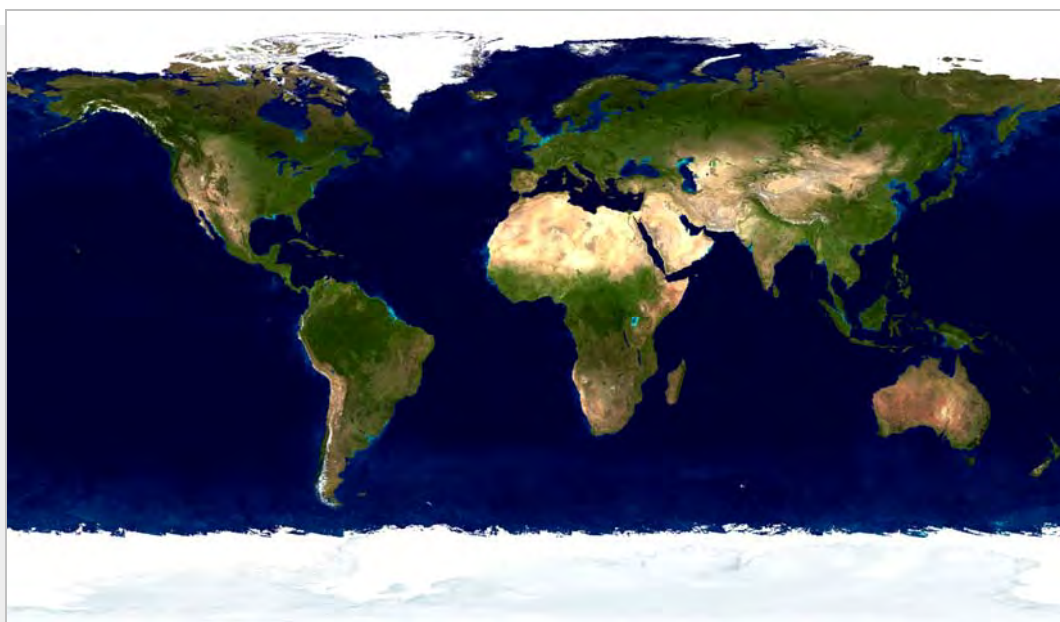


At Aquarius Systems we realize that your time is valuable and equipment downtime is costly. We have technical staff on hand to provide help and guidance, and maintain a 1,000 square foot fully stocked parts room.

With thousands of parts in stock and quick access to thousands more, Aquarius Systems employs multiple courier and shipping options to ensure our customers receive parts in a timely manner. And if you phone before 3:00 p.m. Central time, most orders ship out the same day.



# History & Experience



## History & Experience of Aquarius Systems in Surface Water Management



2020 Edition



## HISTORY & EXPERIENCE OF AQUARIUS SYSTEMS

**Over the last six decades, D&D Products Inc.** has designed and manufactured surface water management equipment that has been sold worldwide. Our initial product line - the aquatic plant harvesters - cleared recreational waterways of nuisance aquatic plants. More importantly however, they provided a safe alternative to the highly toxic herbicides commonly used at the time.



We offer seven standard sized harvesters ranging from 4' to 11' (1,22 to 3,35 meters) wide and a full line of support equipment, including: transport barges, shore conveyors, pier conveyors, standard trailers, combination trailer conveyors, tilt deck trailers and tilt deck trailer conveyors.

In the 1970s, growing environmental concerns about pollution pressured governments into cleaning up lakes, rivers and oceans. The critical need to improve water quality came to the forefront of public awareness, and the dire condition of our waterways called for immediate action.



Our existing harvester design was easily evolved into a vessel that could pick up floating debris, and thus the trash skimmer was born.

Those early trash skimmers have since developed into the sleek, highly efficient Trash Hunters offered today.



### HISTORY & EXPERIENCE OF AQUARIUS SYSTEMS

**Our product line has since expanded** to serve a wide variety of waterways management needs.



The powerful Swamp Devil® is a heavy duty aquatic restoration tool. Designed to plow through densely matted vegetation, the Swamp Devil effortlessly shreds water hyacinth, cattails, bogs, small trees, tussocks and other vegetation that cannot be managed with traditional harvesting equipment.



The Amphibious Excavator is a specialized machine that features a barge mounted backhoe and stabilizer legs. The Amphibious Excavator is designed to work in wetlands, along shorelines and in other areas that are often inaccessible to conventional track mounted diggers.



The Weed Tow Boats are designed to clean nuisance aquatic plants out of deep water drainage canals. Outfitted with a plow that is lowered off the stern and dragged along the channel bottom, vegetation is ripped loose at the roots. The severed weeds then float to the surface and are scooped up in the front end loader to be deposited on shore for disposal.





## HISTORY & EXPERIENCE OF AQUARIUS SYSTEMS

**Our headquarters is located in North Prairie, Wisconsin U.S.A.,** about 90 miles (150 kilometers) north of Chicago. We also maintain sales offices in Southeast Asia, Australia, Africa and South America.



Our manufacturing facility was specifically designed for the fabrication of our surface water management equipment. Our facilities include 43,500 square feet (4040 m<sup>2</sup>) of manufacturing and office space.



Many outstanding points distinguish Aquarius Systems as the industry leader. We are the oldest and most experienced manufacturer of aquatic plant harvesters *in the world*. We have produced thousands of machines that have been sold across the U.S. and in nearly 55 countries worldwide. We are also the only major manufacturer to offer equipment built in the United States - an important consideration in the U.S., where federal regulations known as "The Jones Act" restrict and often prohibit the use of foreign built harvesters, trash skimmers, and amphibious excavators.

Our engineering department is in-house, allowing full time monitoring of manufacturing and quality control systems. Our engineers use 3D mechanical design and engineering software to completely model the equipment prior to fabrication.



The equipment is designed with current principles of marine engineering to ensure that all vessels are of heavy-duty construction while still allowing for maximum payload. The manufacturing takes place at our headquarters in Wisconsin so that we can control all facets of construction.

With a fully stocked parts department and two courier stops per day, our aftermarket support is unrivaled. Parts orders received by 2 p.m. Central Time are typically shipped out the same day. Express shipping is available for next day delivery to nearly all areas in the U.S. and three day delivery to most international destinations.



Our service technicians are available via telephone or email during normal business hours year-round, with extended hours during peak operating seasons.



## HISTORY & EXPERIENCE OF AQUARIUS SYSTEMS

**D&D Products was founded in 1964** by John Dauffenbach and his brother Doug. John had been active in manufacturing similar equipment since the 1950s, and his innovative ideas provided the basis for much of the equipment in service today. D&D Products remains a family owned business now offering water management equipment under the brand name “Aquarius Systems”.



As the largest and oldest manufacturer of surface water management in the industry, Aquarius continues to forge new relationships for the improvement of water quality worldwide.

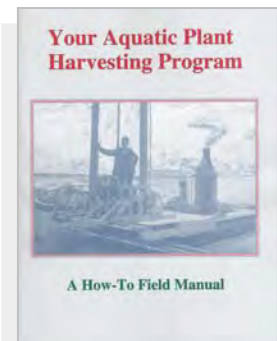
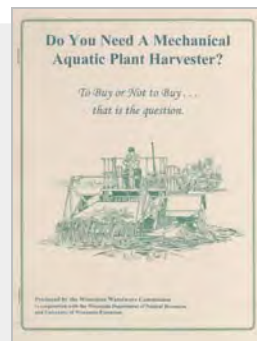
Our dedication to water conservation efforts around the globe has earned many accolades including: Wisconsin Governor's Corporate Civic Award; the Wisconsin Association of Lakes' Outstanding Lake Stewardship Award; the North American Lake Management Society's Outstanding Corporation Award (twice); and the Aquatic Plant Management Society's Excellence Award.

**The National Geographic Channel** featured an Aquarius Systems water hyacinth management project on Lake Victoria in Kenya, Africa. This program continues to periodically appear on the National Geographic cable channel.



The Lake Victoria project was also featured in the popular children's weekly news magazine **Time for Kids**.

Aquarius is also frequently called upon to author articles for periodicals, give presentations, conduct secondary education courses (credit & non-credit) and contribute to educational materials on the use of surface water management equipment.





# AQUARIUS SYSTEMS

A Division of D&D Products Inc.

## Weed Tow Boat Model WT-34

More than 20 of these machines are currently at work  
in the canal systems around Miami, Florida U.S.A.

A demonstration of the vessels follows.



Boarding the Weed Tow Boat



Checking out the diesel engine



The Weed Tow Boat clears low bridges



A plow is mounted on the back of the Weed Tow Boat



A winch lowers the plow into the canal



The plow is dragged along the bottom of the canal



The plow is winched back onto the Weed Tow Boat



Dumping the weeds onto the canal bank



The bucket can push or collect the weeds, Water Hyacinth, and trash



## *D&D PRODUCTS INC.*

PROCEDURE NUMBER: SOP 400-7.4.1

SUBJECT: SUPPLIER SELECTION AND MONITORING

PAGE 2 OF 3

REVISION NUMBER: 0

### **5.0 Quality Activities**

#### 5.1

The Purchasing Manager is responsible for assessing suppliers and subcontractors. The Purchasing Manager may rely upon any one of the following in his or her decision to qualify a vendor for inclusion as an approved supplier:

- Customer specification of the vendor
- Industry reputation (recommendation by at least two companies or favorable rating in trade journals)
- Review and approval of samples or specifications by Engineering
- Quality system certification to ISO 9001
- Provision of a copy of the vendor's quality manual that indicates compliance with ISO 9001 (Requires QA approval)
- Sole source provider of material or service
- "Grand fathered" on the basis of satisfactory past performance (see 5.2 below)

The Purchasing Manager is responsible for maintaining all approved suppliers using the Peachtree software Maintain/Vendors function. The field names on the Maintain/Vendors function will serve as work instructions for its completion. The vendor type used for approved suppliers will be "Approved". The approval method is entered in the Peachtree software maintain/vendors/custom fields/approval method field.

An Approved Supplier List can be printed using the Peachtree software Reports/Account Payable/Vendor List function. The information printed for each supplier can be designated using the Peachtree software Reports/Account Payable/Vendor List/Design/Fields function so that an approved supplier list with relevant information is available. This is a perpetual (dynamic) list.

#### 5.2

Suppliers that have had at least six months of history of supplying D&D Products as of 6/01/02 are considered to be approved suppliers and are not subject to initial qualification

## *D&D PRODUCTS INC.*

PROCEDURE NUMBER: SOP 400-7.4.1

SUBJECT: SUPPLIER SELECTION AND MONITORING

PAGE 3 OF 3

REVISION NUMBER: 0

### 5.3

The Purchasing Manager maintains a Supplier Nonconformity Logbook (Form 400-7.4.1). All nonconformities (product, late shipment, packaging, labeling) are recorded in the logbook as nonconformities arise.

Suppliers are contacted and informed of the nonconformities. The Purchasing Manager or buyer may issue a formal request for corrective action in the event of product nonconformity.

The Purchasing Manager reviews the Supplier Nonconformity Logbook monthly to identify any adverse trends in performance. Formal requests for corrective action may be initiated (see SOP 600-8.5). Records of these monthly reviews are noted with a signature on the Supplier Nonconformance Log (Form 400-7.4.1) and maintained for 2 years. Suppliers that show continued evidence of poor performance and no indication of improvement will be removed from the approved suppliers list, assuming that other acceptable sources of supply can be found.

The Purchasing Manager is responsible for informing the Quality Manager of any problem suppliers so that QA can decide upon changes to be made to incoming inspection procedures as a result of changes in supplier performance.

### **6.0 Amendments**

Rev.	Date	Sections Affected / Description
0	4/10/2002	Document Established



## ADDENDUM NO. 1

DATE: April 7, 2020  
TO: ALL PROSPECTIVE PROPOSERS  
SUBJECT: FB-01332 – Aquatic Weed Harvester Boats

This Addendum becomes a part of the subject solicitation.

A. The following are the pre-proposal questions received and corresponding County responses:

1. When & where were your present boats built? Who built them? What is your current budget for each boat?

Answer: The units were manufactured in June 2017 by D & D Products, Inc. dba Aquarius Systems Division and built in North Prairie, Wisconsin. The current budget for each unit is \$228,998.

2. Would you be interested in looking into another type of Amphibious machine, as the unit shown in the attachments with the bid do not look amphibious. And for the budget you have in mind you could be obtaining at least two of the Amphibious machines we have in mind.

Answer: No.

All other information remains the same.

Miami-Dade County,

Marie Williams  
Procurement Contracting Officer

c: Clerk of the Board

**Supplier: Aquarius Systems**



Submittal Form

Solicitation No.		Solicitation Title:	
Bidder's Legal Company Name (include d/b/a if applicable): D&D Products Inc. DBA Aquarius Systems Division*		Bidder's Federal Tax Identification Number: 39-1053448*	
If Corporation - Date Incorporated/Organized: 02/24/1966		State Incorporated/Organized: Wisconsin*	
Company Operating Address: 200 North Harrison Street*	City North Prairiew*	State WI*	Zip Code 53153*
Miami-Dade County Address (if applicable):	City	State	Zip Code
Company Contact Person: Nicholas Ward*	Email Address: nickw@aquarius-systems.com*		
Phone Number (include area code): 262-392-2162*	Company's Internet Web Address: www.aquarius-systems.com		

**Pursuant to Section 2-8.6 of the Code of Miami-Dade County (County), any individual, corporation, partnership, joint venture or other legal entity having an officer, director, or executive who has been convicted of a felony during the past ten (10) years shall disclose this information prior to entering into a contract with or receiving funding from the County.**  
 Place a check mark here **only** if the Bidder has such conviction to disclose to comply with this requirement.

**LOCAL PREFERENCE CERTIFICATION:** For the purpose of this certification, and pursuant to Section 2-8.5 of the Code of Miami-Dade County, a "local business" is a business located within the limits of Miami-Dade County that has a valid Local Business Tax Receipt issued by Miami-Dade County at least one year prior to bid submission; has a physical business address located within the limits of Miami-Dade County from which business is performed and which served as the place of employment for at least three full time employees for the continuous period of one year prior to bid submittal (by exception, if the business is a certified Small Business Enterprise, the local business location must have served as the place of employment for one full time employee); and contributes to the economic development of the community in a verifiable and measurable way. This may include, but not be limited to, the retention and expansion of employment opportunities and the support and increase to the County's tax base.  
 Place a check mark here **only** if affirming the Bidder meets the requirements for Local Preference. **Failure to affirm this certification at this time may render the Bidder ineligible for Local Preference.**  
**IN ACCORDANCE WITH CFR 200.319(b), LOCAL PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASE.**

**LOCALLY-HEADQUARTERED BUSINESS CERTIFICATION:** For the purpose of this certification, and pursuant to Section 2-8.5 of the Code of Miami-Dade County, a "locally-headquartered business" is a Local Business whose "principal place of business" is in Miami-Dade County.  
 Place a check mark here **only** if affirming the Bidder meets the requirements for the Locally-Headquartered Preference (LHP). **Failure to affirm certification at this time may render the Bidder ineligible for the LHP.**  
**The address of the Locally-Headquartered office is:**  
**IN ACCORDANCE WITH CFR 200.319(b), LOCALLY-HEADQUARTERED BUSINESS PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASE.**

**LOCAL CERTIFIED VETERAN BUSINESS ENTERPRISE CERTIFICATION:** A Local Certified Veteran Business Enterprise is a firm that is (a) a local business pursuant to Section 2-8.5 of the Code of Miami-Dade County; and (b) prior to bid submission is certified by the State of Florida Department of Management Services as a veteran business enterprise pursuant to Section 295.187 of the Florida Statutes.  
 Place a check mark here **only** if affirming Bidder is a Local Certified Veteran Business Enterprise. **A copy of the certification must be**

submitted with the bid.

**IN ACCORDANCE WITH CFR 200.319(b), LOCAL CERTIFIED VETERAN BUSINESS ENTERPRISE PREFERENCE SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASE.**

**SMALL BUSINESS ENTERPRISE CONTRACT MEASURES (if applicable):**

A Small Business Enterprise (SBE) must be certified by the Division of Small Business Development (SBD) for the type of goods and/or services the Bidder provides in accordance with the applicable Commodity Code(s) for this solicitation. For certification information, contact SBD at (305) 375-3111 or access <http://www.miamidade.gov/smallbusiness/certification-programs.asp>. The SBE must be certified by the solicitation's submission deadline, at contract award, and for the duration of the contract to remain eligible for the preference. Firms that graduate from the SBE Program during the contract may remain on the contract.

Place a check mark here **only** if affirming Bidder is a Miami-Dade County Certified Small Business Enterprise.

**IN ACCORDANCE WITH CFR 200.319(b), SMALL BUSINESS ENTERPRISE MEASURES SHALL NOT APPLY TO FEDERALLY FUNDED PURCHASE**

**SCRUTINIZED COMPANIES WITH ACTIVITIES IN SUDAN LIST, THE SCRUTINIZED COMPANIES WITH ACTIVITIES IN THE IRAN PETROLEUM ENERGY SECTOR LIST, OR THE SCRUTINIZED COMPANIES THAT BOYCOTT ISRAEL LIST:**

By executing this bid through a duly authorized representative, the Bidder certifies that the Bidder is not on the Scrutinized Companies with Activities in Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List, as those terms are used and defined in Sections 287.135, 215.473, and 215.4725 of the Florida Statutes. The County shall have the right to terminate any contract resulting from this solicitation for default if the Bidder is found to have submitted a false certification or to have been placed on the Scrutinized Companies for Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Section List, or the Scrutinized Companies that Boycott Israel List.

**OR**

In the event that the Bidder is unable to provide such certification, but still seeks to be considered for award of this solicitation, the Bidder shall execute the bid through a duly authorized representative and shall **also initial** this space: \_\_\_\_\_. In this event, the Bidder shall furnish together with its bid a duly executed written explanation of the facts supporting any exception to the requirement for certification that it claims under Section 287.135 and/or 215.4725 of the Florida Statutes. The Bidder agrees to cooperate fully with the County in any investigation undertaken by the County to determine whether the claimed exception could be applicable.

**IT IS HEREBY CERTIFIED AND AFFIRMED THAT THE BIDDER SHALL ACCEPT ANY AWARDS MADE AS A RESULT OF THIS SOLICITATION. BIDDER FURTHER AGREES THAT PRICES QUOTED WILL REMAIN FIXED FOR A PERIOD OF ONE HUNDRED AND EIGHTY (180) DAYS FROM DATE SOLICITATION IS DUE.**

**WAIVER OF CONFIDENTIALITY AND TRADE SECRET TREATMENT OF BID:**

The Bidder acknowledges and agrees that the submittal of the Bid is governed by Florida's Government in the Sunshine Laws and Public Records Laws, as set forth in Florida Statutes Section 286.011 and Florida Statutes Chapter 119. As such, all material submitted as part of, or in support of, the bid will be available for public inspection after opening of bids and may be considered by the County in public.

**By submitting a bid pursuant to this solicitation, Bidder agrees that all such materials may be considered to be public records. The Bidder shall not submit any information in response to this solicitation which the Bidder considers to be a trade secret, proprietary or confidential.** In the event that the bid contains a claim that all or a portion of the bid submitted contains confidential, proprietary or trade secret information, the Bidder, **by signing below**, knowingly and expressly **waives** all claims made that the bid, or any part thereof no matter how indicated, is confidential, proprietary or a trade secret and authorizes the County to release such information to the public for any reason.

**Acknowledgment of Waiver:**

<b>Bidder's Authorized Representative's Signature:</b> Nicholas Ward*	<b>Date</b> 03/30/2020*
<b>Representative's Name:</b> Nicholas Ward*	
<b>Representative's Title:</b> Technical Sales Representative*	

**THE EXECUTION OF THIS FORM CONSTITUTES THE UNEQUIVOCAL OFFER OF THE BIDDER TO BE BOUND BY THE TERMS OF ITS OFFER. FAILURE TO SIGN THIS SOLICITATION WHERE INDICATED BELOW BY AN AUTHORIZED REPRESENTATIVE SHALL RENDER THE BID NON-RESPONSIVE. THE COUNTY MAY, HOWEVER, IN ITS SOLE DISCRETION, ACCEPT ANY RESPONSE THAT INCLUDES AN EXECUTED DOCUMENT WHICH UNEQUIVOCALLY BINDS THE BIDDER TO THE TERMS OF ITS OFFER.**

<b>Bidder's Authorized Representative's Signature:</b> Nicholas Ward*	<b>Date</b> 03/30/2020*
<b>Representative's Name:</b> Nicholas Ward*	
<b>Representative's Title:</b> Technical Sales Representative*	

Supplier: Aquarius Systems

Miami-Dade County

Contractor Due Diligence Affidavit

Per Miami-Dade County Board of County Commissioners (Board) Resolution No. R-63-14, County Vendors and Contractors shall disclose the following as a condition of award for any contract that exceeds one million dollars (\$1,000,000) or that otherwise must be presented to the Board for approval:

- (1) Provide a list of all lawsuits in the five (5) years prior to bid or proposal submittal that have been filed against the firm, its directors, partners, principals and/or board members based on a breach of contract by the firm; include the case name, number and disposition;
(2) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has defaulted; include a brief description of the circumstances;
(3) Provide a list of any instances in the five (5) years prior to bid or proposal submittal where the firm has been debarred or received a formal notice of non-compliance or non-performance, such as a notice to cure or a suspension from participating or bidding for contracts, whether related to Miami-Dade County or not.

All of the above information shall be attached to the executed affidavit and submitted to the Procurement Contracting Officer (PCO)/ AE Selection Coordinator overseeing this solicitation. The Vendor/Contractor attests to providing all of the above information, if applicable, to the PCO.

Contract No. : FB-01332 Federal Employer Identification Number (FEIN): 39-1053448
Contract Title: Aquatic Weed Harvester Boats

Nicholas Ward Technical Sales Representative Nicholas Ward
Printed Name of Affiant Printed Title of Affiant Signature of Affiant
D&D Products Inc. Aquarius Systems Div. 04/10/2020
Name of Firm Date
200 North Harrison Street, North Prairie, WI 53153 WI 53153
Address of Firm State Zip Code

Notary Public Information

Notary Public - State of \_\_\_\_\_ County of \_\_\_\_\_

Subscribed and sworn to (or affirmed) before me this \_\_\_\_\_ day of, \_\_\_\_\_ 20\_\_

by \_\_\_\_\_ He or she is personally known to me or has produced identification

Type of identification produced \_\_\_\_\_

Signature of Notary Public Serial Number

Print or Stamp of Notary Public Expiration Date Notary Public Seal

## Supplier: Aquarius Systems

Solicitation Number FB-01332

\* Vendor Name D&D Products Inc. DBA Aquarius Systems Division

\* FEIN # 39-1053448

Complete "A" or "B":

A.  No subcontractors or direct suppliers will be utilized pursuant to this solicitation.

B.  The below listed subcontractors and/or suppliers will be utilized pursuant to this solicitation:

Business Name and Address of First Tier Subcontractor/ Subconsultant	Name of Principal Owner	Scope of Work to be Performed by Subcontractor /Subconsultant	Subcontractor / Subconsultant License (if applicable)
<u>Symet Inc. 3282 N. 35th St. Milwaukee, WI 53216</u>	<u>Stacey Ash</u>	<u>Paint</u>	<u>N/A</u>
<u>Heckel Tool &amp; Mfg. W356s8920 Godfrey Ln. Eagle, WI 53119</u>	<u>Lori Heckel</u>	<u>Machined Parts</u>	<u>N/A</u>
Business Name and Address of First Tier Direct Supplier	Name of Principal Owner	Supplies, Materials, and/or Services to be Provided by Supplier	
<u>Superior Diesel, 3250 S Fox Ranch Rd, Rhinelander, WI 54501</u>	<u>Richard Freeman</u>	<u>Engine</u>	
<u>Palmer Johnson Power Systems, 1835 Haynes Dr, Sun Prairie, WI 53590</u>	<u>Mike Kelsey</u>	<u>Transmission</u>	
<u>Applied Industrial Technologies, 11701 W Bradley Rd, Milwaukee, WI 53224</u>	<u>Neil Schrimsher-CEO Publicly Held Corp.</u>	<u>Industrial Components</u>	
<u>Russel Metals, 999 W Armour Ave, Milwaukee, WI 53221</u>	<u>John Reid- CEO Publicly Held Corp.</u>	<u>Steel Supplier</u>	

And

Below and/or attached is a detailed statement of the firm's policies and procedures for awarding subcontractors:

See Attached D&D Products Inc. SOP 400-7.4.1

(Duplicate this form if additional space is needed to provide the required information)

When Subcontracting is allowed and subcontractors will be utilized, the Contractor shall comply with Section 2-8.8 of the Code - Fair Subcontracting Practices; (1) Prior to contract award, the Bidder shall provide a detailed statement of its policies and procedures for awarding subcontracts and (2) As a condition of final payment under a contract, the Contractor shall identify subcontractors used in the work, the amount of each subcontract, and the amount paid and to be paid to each subcontractor via the BMWS at <http://mdcsbd.gob2g.com>.

Pursuant to Section 2-8.1(f) of the Code - Listing of subcontractors required on certain contracts, for all contracts which involve the expenditure of one hundred thousand dollars (\$100,000) or more, the entity contracting with the County must report to the County the race, gender, and ethnic origin of the owners and employees of its first tier subcontractors and suppliers via the BMWS at <http://mdcsbd.gob2g.com>. The race, gender, and ethnic information must be submitted via BMWS as soon as reasonably available and, in any event, prior to final payment under the Contract. The Contractor shall not change or substitute first tier subcontractors or direct suppliers or the portions of the Contract work to be performed or materials to be supplied from those identified except upon written approval of the County.

*I certify that the information contained in this form is to the best of my knowledge true and accurate.*

Nicholas Ward

Nicholas Ward

Technical Sales  
Representative

04/01/2020

\_\_\_\_\_  
\* Signature of Vendor's  
Representative

\_\_\_\_\_  
\* Print Name

\_\_\_\_\_  
\* Print Title

\_\_\_\_\_  
\* Date

## No Bids

Texas Aquatic Harvesting Inc Currently working other long term projects that will not allow us to dedicate manpower and facilities to this project.

## Williams, Marie (ISD)

---

**From:** Jimmy Mourey <jmourey@gcc-na.com>  
**Sent:** Friday, April 17, 2020 5:12 PM  
**To:** Williams, Marie (ISD)  
**Cc:** Clerk of the Board (COC)  
**Subject:** Re: Repairs Rep for D&D Products, Inc. for FB-01332

EMAIL RECEIVED FROM EXTERNAL SOURCE.

---

Maria  
Yes GCC is in an agreement with D and D products to preform warranty and service.  
Thanks  
Jimmy

Get [Outlook for iOS](#)

---

**From:** Williams, Marie (ISD) <Marie.Williams@miamidade.gov>  
**Sent:** Friday, April 17, 2020 5:05:21 PM  
**To:** Jimmy Mourey <jmourey@gcc-na.com>  
**Cc:** Clerk of the Board (COC) <Clerk.Board@miamidade.gov>  
**Subject:** [EXTERNAL] Repairs Rep for D&D Products, Inc. for FB-01332

Good afternoon,

D&D Products, Inc. is currently being evaluated for award of Contract FB-01332 for Aquatic Weed Harvester Boats with Miami-Dade County. As a condition of award, the contract requires that D&D Products, Inc. have and provide contact information of its local representative in the South Florida Tri-county region (Palm Beach, Broward and Miami-Dade Counties) that will be used to perform warranty repairs and services. Nick Ward has provided your contact information and advised that D&D Products, Inc. will utilize your firm for this requirement.

I am requesting affirmation from you confirming that Gulf Control Company is aware of and will be performing warranty repairs and services for D&D Products, Inc. as stated above. **Your confirmation is greatly appreciated, as soon as possible.**

Thanks,  
F  
**S. Marie Williams, CPPB**  
Procurement Contracting Officer 2  
Miami-Dade County Internal Services Department  
111 NW 1st Street, Suite 1300, Miami, FL 33128  
Phone: (305) 375-3248

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## Williams, Marie (ISD)

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**From:** Nick Ward <nickw@aquarius-systems.com>  
**Sent:** Friday, April 17, 2020 4:43 PM  
**To:** Williams, Marie (ISD)  
**Cc:** Clerk of the Board (COC); Jane Dauffenbach  
**Subject:** RE: Action Item - FB-01332 Aquatic Weed Harvester Boats

EMAIL RECEIVED FROM EXTERNAL SOURCE.

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Good Afternoon Marie,

Thank you for your note. For clarification, John is correct and will be the contact for warranty work performed on the transmission. Our local representative for general warranty and repair issues will be Gulf Control Company. See below for contact information.

Gulf Controls Company

DBA Action Hydraulics

7399 NW 74<sup>th</sup> Street

Medley, FL 33166

Jimmy Mourey

305-537-2930

[jmourey@gcc-na.com](mailto:jmourey@gcc-na.com)

If you have any additional questions, please don't hesitate to contact me.

Stay safe and healthy,

Nick

---

**From:** Williams, Marie (ISD) <Marie.Williams@miamidade.gov>  
**Sent:** Thursday, April 16, 2020 3:41 PM  
**To:** Jane Dauffenbach <janed@aquarius-systems.com>; Nick Ward <nickw@aquarius-systems.com>  
**Cc:** Clerk of the Board (COC) <Clerk.Board@miamidade.gov>  
**Subject:** Action Item - FB-01332 Aquatic Weed Harvester Boats

Good afternoon,

Please see the below email from Great Lakes Power and advise me. Otherwise, revise and provide the contact information for your local representative expeditiously.

Thanks,

**S. Marie Williams, CPPB**  
Procurement Contracting Officer 2  
Miami-Dade County Internal Services Department  
111 NW 1st Street, Suite 1300, Miami, FL 33128  
Phone: (305) 375-3248

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**From:** Williams, Marie (ISD)  
**Sent:** Thursday, April 16, 2020 3:45 PM  
**To:** John Heneghan <[jheneghan@glpower.com](mailto:jheneghan@glpower.com)>  
**Cc:** Lewis, Sherman (ISD) <[Sherman.Lewis@miamidade.gov](mailto:Sherman.Lewis@miamidade.gov)>  
**Subject:** RE: D & D Products, Inc.

Good afternoon,

Thanks for the prompt response below. I will follow up with D&D, and will be in touch with you directly if needed.

Regards,

**S. Marie Williams, CPPB**  
Procurement Contracting Officer 2  
Miami-Dade County Internal Services Department  
111 NW 1st Street, Suite 1300, Miami, FL 33128  
Phone: (305) 375-3248

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**From:** John Heneghan [<mailto:jheneghan@glpower.com>]  
**Sent:** Thursday, April 16, 2020 3:42 PM  
**To:** Lewis, Sherman (ISD) <[Sherman.Lewis@miamidade.gov](mailto:Sherman.Lewis@miamidade.gov)>  
**Cc:** Williams, Marie (ISD) <[Marie.Williams@miamidade.gov](mailto:Marie.Williams@miamidade.gov)>  
**Subject:** RE: D & D Products, Inc.

EMAIL RECEIVED FROM EXTERNAL SOURCE .