

# Sector Guide



**TIGERFLOW** Systems, LLC



# Why TIGER



## First Cost

**TIGERFLOW** Packaged Systems offer significant first cost savings. Packages turn the variable cost of construction into the fixed cost of manufacturing. A packaged system will improve the critical path of any project and moves the commissioning process from the field into a factory calibrated test facility.



## Quality & Reliability

**TIGERFLOW** is the industry leader in quality and performance. All **TIGERFLOW** systems are manufactured in our ISO 9001 registered facility. Every system is tested in our NIST traceable factory test rig under the direction of degreed and licensed engineers. **TIGERFLOW** stands behind every system we build.



## Established Leader

**TIGERFLOW** is a strong, global leader in the value added manufacturer of packaged pumping systems. Since 1985 our flexibility in providing the end user with the components of their choice has been the key to our success. As an independent systems integrator we provide the most efficient components for custom design requirements.

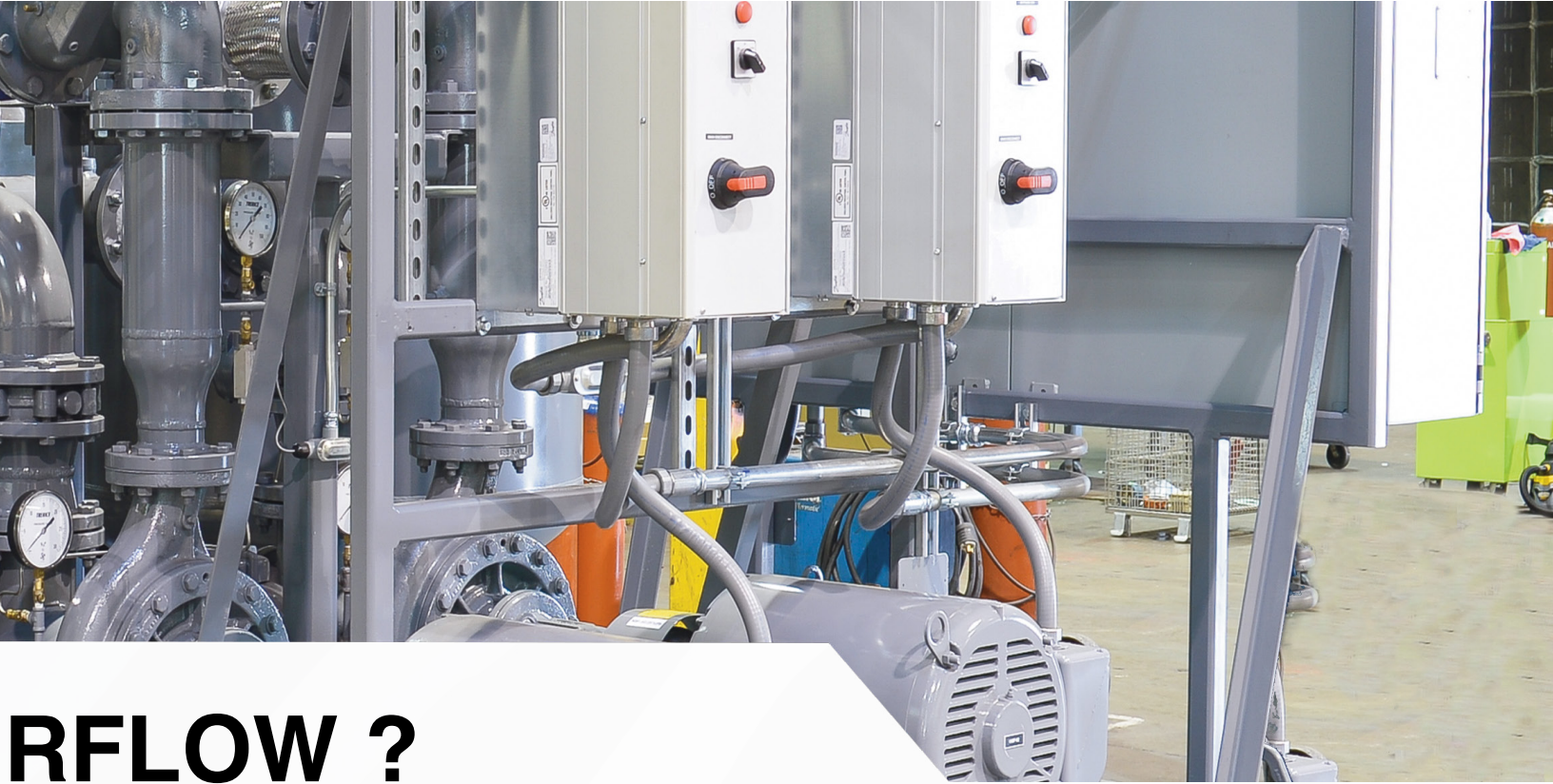


## Project Scheduling

**TIGERFLOW** systems enable dramatic reduction in time lines due to our highly efficient project managers.







# RFLOW ?



## Customer Support

**TIGERFLOW's** system components are easily serviceable, with state-of-the-art control features, and are optimized to fit the smallest possible footprint. System installation, maintenance and operation manuals are provided with every packaged system via **TIGERFLOW's GREENDOC™** program. Our team members are happy to assist you with your queries.



## Manufacturing Plant

- 88,000 sq ft dedicated manufacturing facility on 8 acres
- (6) Manufacturing bays with bridge cranes.
- All welding by AWS & ASME certified welders
- NIST traceable testing facility
- In-house UL 508 panel shop
- In-house electrical & mechanical, design & engineering
- In-house controls design & engineering



## Efficiency

**TIGERFLOW** understands the connection between water and energy. We have been a pioneer in developing PLC controlled pumping systems optimized for efficiency. We offer ASHRAE 90.1 compliant variable speed systems. **TIGERFLOW ACTIVE PERFORMANCE (TAP)** implement on the **TIGERFLOW MARK** series controller ensures our system utilizes the latest technology to save energy.

- 3rd Party Certified to ensure standards are met or exceeded
- Full integration of all systems, including controls, mechanical & EMS interfaces
- Trouble-free maintenance and long term service
- Reliable: Industry -Standard components & maintenance-friendly layouts
- Full factory support for installation, operation & maintenance



## TIGERCUB

Simplex close coupled end suction domestic water booster system.

### Benefits

- 3<sup>rd</sup> party certified – UL/C-UL listed systems
- Prefabricated and factory tested
- Single source responsibility

### Applications

- Medium size apartment projects
- Shopping centers
- Medium buildings. 4, 5 levels
- Municipal

### Certifications



## HOUSECAT

### Benefits

- 3<sup>rd</sup> party certified – UL/ C-UL listed systems.
- Prefabricated and Factory tested.
- Single source responsibility.
- Small foot print.
- Pre-pressurized NSF-61 Certified bladder tank.
- 1 HP close coupled pump and motor.
- Light weight.
- Cost effective for wholesalers and contractors.

### Applications

- Residential Homes
- Town homes
- Small Apartment Projects
- Shopping Centers
- Stand Alone Office Buildings
- Landscape Irrigation

### Certifications





# STANDARD BOOSTER SYSTEM

## Benefits

- NSF Certified
- Prefabricated and factory tested
- 3<sup>rd</sup> party UL/C-UL listed system
- ANSI/NSF-61 Certified (IAPMO N-5169)
- Low Lead Certification (IAPMO 6940) meets NSF 372  $\leq 0.25\%$  weighted average lead content
- TAP Technology Control algorithm meets ASHRAE 90.1 requirements
- Designed to fit through standard 36" doorway
- Space saving design
- PLC-VFD direct Modbus communication offers unrivaled response

## Applications

- Commercial Plumbing
- Municipal
- Institutional
- Process
- Industrial

## Certifications



# ENGINEERED-TO - ORDER

## Benefits

- Certificate of Product Liability Insurance
- Prefabricated and factory tested - NIST Traceable Test Facility
- UL/C-UL Listed Packaged Pumping Systems (QCZI)
- ASME Section IX Certified Pipe Welders
- AWS D1.1 Certified Structural Welders
- UL Standard 508A - Standard for Industrial Control Panels
- Engineered to Order Designs

## Applications

- Commercial
- Institutional
- Municipal
- Process and Industrial

## Certifications



## FIRE PROTECTION SYSTEMS

**SERIES FPS-7000 - Cost-effective engineered fire protection systems for commercial, institutional, municipal, and industrial applications.**

### Benefits

- 3<sup>rd</sup> Party ETL/C-ETL Labeled Systems ASME Section 9 Certified Welding
- UL Listed/FM Approved Components
- NFPA 20 & NEC 70 Compliance
- Factory Tested
- Single Source Responsibility
- Start-up & Field Training
- NFPA Pamphlet 20 Full Compliance

### Applications

- Commercial
- Institutional
- Municipal
- Industrial

### Certifications



## Prefabricated Units with Environmental Enclosures



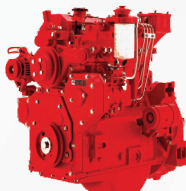


# CE FOR ENGINEERED ION SYSTEMS

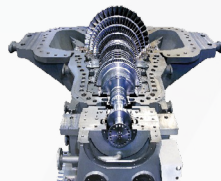
## Driver Options



Electric Motors



Diesel Engine



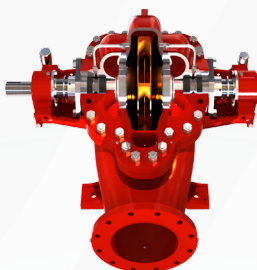
Steam Turbine



## Pump Options



End Suction



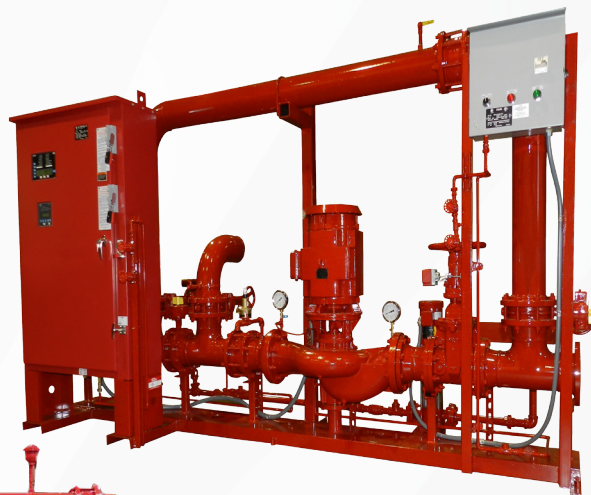
Horizontal Split Case



In-line

Vertical Turbine

## Prefabricated Skid Mounted Units



# VERTICAL TURBINE SYSTEM



## Benefits

- Single source responsibility
- Certificate of Product Liability Insurance
- Prefabricated and factory tested - NIST Traceable Test Facility
- UL/C-UL Listed Packaged Pumping Systems (QCZI)
- ASME Section IX Certified Pipe Welders
- AWS D1.1 Certified Structural Welders
- UL Standard 508A - Standard for Industrial Control Panels
- Engineered to Order designs

## Applications

- Commercial
- Institutional
- Municipal
- Process and Industrial

## Certifications



# ENGINEERED - TO - ORDER

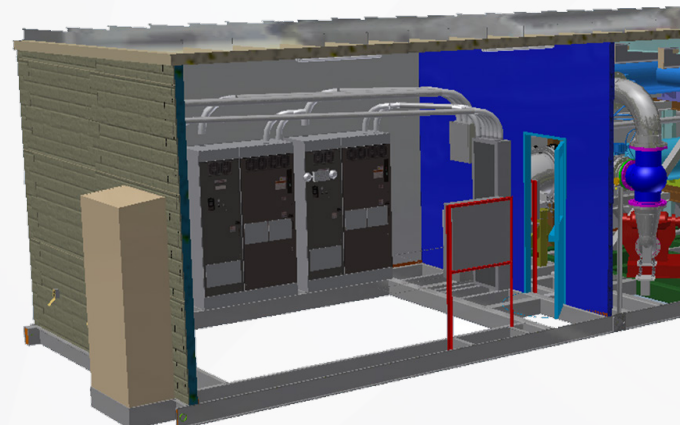
## Benefits

- Certificate of Product Liability Insurance
- Prefabricated and factory tested - NIST Traceable Test Facility
- UL/C-UL Listed Packaged Pumping Systems (QCZI)
- ASME Section IX Certified Pipe Welders
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- UL Standard 508A - Standard for Industrial Control Panels
- Engineered to Order Designs

## Applications

- Commercial
- Institutional
- Municipal
- Process and Industrial

## Certifications





# GUIDE TO MUNICIPAL PUMP SYSTEM SIZING

System Operating Control: \_\_\_\_\_ Pressure  
 \_\_\_\_\_ Flow  
 \_\_\_\_\_ Level  
 \_\_\_\_\_ Telemetry  
 \_\_\_\_\_ PRV's  
 \_\_\_\_\_ PCV's  
 \_\_\_\_\_ Surge  
 \_\_\_\_\_ VDF's  
 \_\_\_\_\_ ATL Starting  
 \_\_\_\_\_ Reduced Starting

Water Source: Elevated Tank \_\_\_\_\_ Ft.  
 City Water \_\_\_\_\_ PSI  
 Static \_\_\_\_\_ PSI  
 Residential \_\_\_\_\_ PSI  
 Hydropneumatic \_\_\_\_\_ PSI

Startic Head: Highest Elevation \_\_\_\_\_ Ft.  
 Lowest Elevation- \_\_\_\_\_ Ft.  
 Static Head= \_\_\_\_\_ Ft.  
 Total Supply Pipe Length= \_\_\_\_\_ Ft.

Pump Selection: \_\_\_\_\_ End Suction  
 \_\_\_\_\_ Vertical Multi-Stage  
 \_\_\_\_\_ Horizontal Split Case  
 \_\_\_\_\_ Vertical Turbine  
 \_\_\_\_\_ 1750 RPM  
 \_\_\_\_\_ 3500 RPM

Power \_\_\_\_\_ PH / 60 Hz / \_\_\_\_\_ Volt

Total Supply Pipe Length.....= \_\_\_\_\_ Ft.

Pump Design Specifications		MIN	MAX
REQ'D Water Pressure			
Static Head _____ Ft. x .433 =	_____ 5 _____		
Pipe Loss, Use 5#/1,000 Ft			
Discharge Pressure			
Less Supply Pressure			
Required Boost			
Pump System Loss			
Total Pump Boost Req'D			

User Flow Rate Domestic \_\_\_\_\_ GPM  
 Fire \_\_\_\_\_ GPM

Pump System Specifications: No. of Pumps \_\_\_\_\_  
 Pump Split \_\_\_\_\_ %  
 Pump Capacity \_\_\_\_\_ GPM



# PACKAGED CENTRAL UTILITY SYSTEM

Full System integration of all systems: Controls, Mechanical and EMS interfaces.  
Easy menu driven operation: easy to understand operator interface and control.  
Trouble-free maintenance, long term service.  
Reliable industry-standard components.  
Full Factory installation, operation & maintenance manuals.

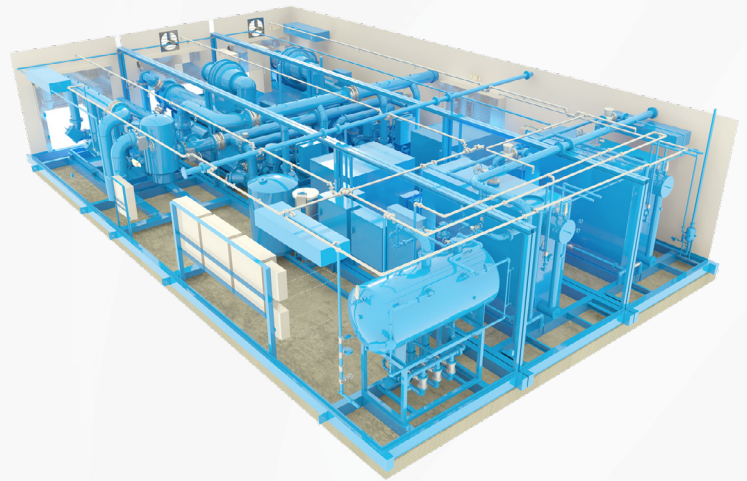
## Benefits

- Single Source Responsibility
- Certificate of Product Liability Insurance
- Prefabricated and factory tested - NIST Traceable Test Facility
- UL/C-UL Listed Packaged Pumping Systems (QCZI)
- ASME Section IX Certified Pipe Welders
- AWS D1.1 Certified Structural Welders
- Engineered to Order Designs
- Start-up and Commissioning Performed by Factory Trained Controls Engineers

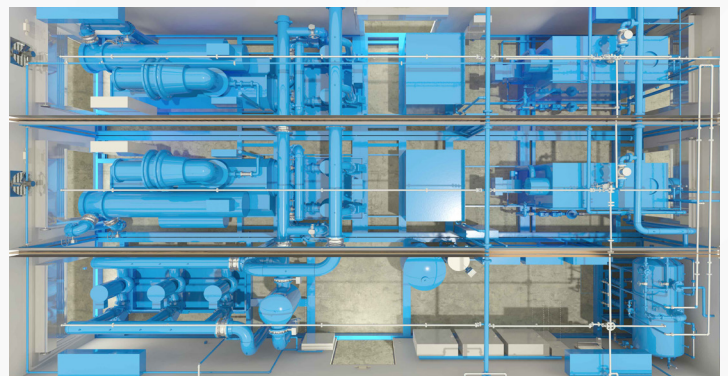


## Applications

- Modular Constant and Variable Speed Chiller Plants
- Hot Water Plants
- Steam Generating Boiler Room Systems
- Mission Critical Facilities
- Data Centers
- Commercial Buildings
- Industrial Facilities
- Process Cooling
- Institutional Facilities
- Health Care Facilities
- Educational Facilities
- Entertainment Facilities
- Food and Beverage Processing



## Certifications





# HEAT TRANSFER SYSTEM

## Benefits

- Prefabricated and factory tested
- 3<sup>rd</sup> party UL/C-UL listed system
- ASME section IX certified pipe welders
- AWS D1.1 certified structural welders
- UL 508 labeled power and controls
- Constant and variable speed designs
- Single source responsibility
- Start-up and field training by factory trained controls engineers (optional)
- Every system is electrically and hydrostatically tested before shipment
- 5 Standard configurations available

## Applications

- Closed loop heating systems
- Chilled water systems
- Process systems

## Certifications



# GLYCOL MAKE-UP UNIT

## Benefits

- Certificate of Product Liability Insurance
- Prefabricated and factory tested - NIST Traceable Test Facility
- UL/C-UL Listed Packaged Pumping Systems (QCZJ)
- ASME Section IX Certified Pipe Welders
- AWS D1.1 Certified Structural Welders
- UL Standard 508A - Standard for Industrial Control Panels
- Engineered to Order Designs

## Applications

- Closed loop heating systems
- Chilled water systems
- Process systems

## Certifications



## RAINWATER HARVESTING

The **TIGERFLOW** ATLANTIS Rain Water system offers the latest in water reuse technology. The ATLANTIS package is a single source turn-key solution for the collection, storage, filtration, disinfection and end-use delivery of harvested rain water.

### Why Harvest the rain?

Water scarcity has dramatically affected the cost and availability of potable water. Many municipalities now place restrictions on how and when water can be used. In addition, the cost of water will continue to increase as water supplies are further stressed.

### Advantages of Rain Water Harvesting

- Save water and energy
- Lower water bills
- LEEDS points
- Storm Water Mitigation
- Freedom of use

### Rain Water harvesting Methods

- Storage Cisterns
- Pump Selections:
  - » Submersible
  - » End Suction
  - » Vertical Multi-Stage
- Filtration:
  - » Bag Filter
  - » Cartridge Filter
  - » Auto-Flush Screen Filter
- Disinfection:
  - » Ultraviolet
  - » Ozone
  - » Chlorine
  - » Dye Injection
- City Water Bypass
- Make-up Water
- Recirculation
- Pre-Filtration
- Day Tank
- Condensate Collection





# RAINWATER HARVESTING SYSTEM

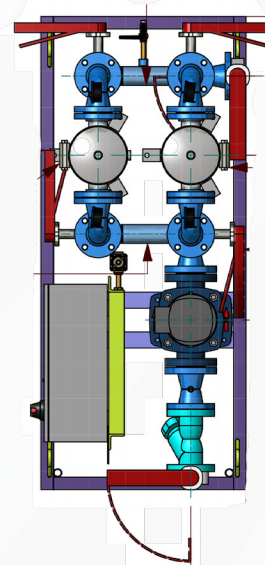
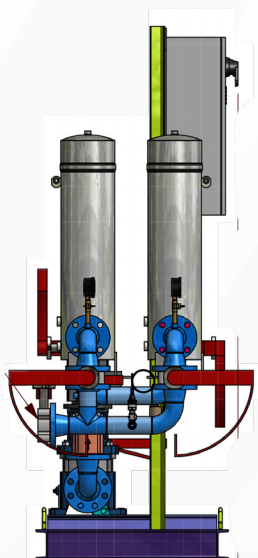
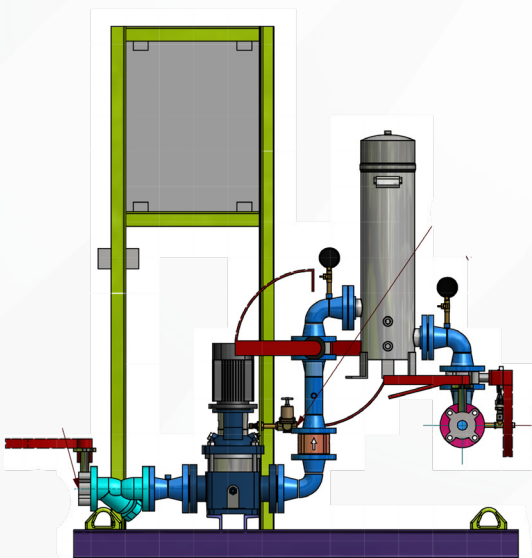
## Benefits

- Single source responsibility
- Certificate of Product Liability Insurance
- Prefabricated and factory tested - NIST Traceable
- Test
- UL/C-UL Listed Packaged Pumping Systems (QCZJ)
- ARCSA 63 Compliant systems
- ASME Section IX Certified Pipe Welders
- AWS D1.1 Certified Structural Welders
- UL Standard 508A - Standard for Industrial Control
- Engineered to Order Designs
- Certified Performance Test

## Applications

- Plumbing: Flushing toilets & urinals
- Cooling Tower make-up
- Landscape/Irrigation: Sprinklers

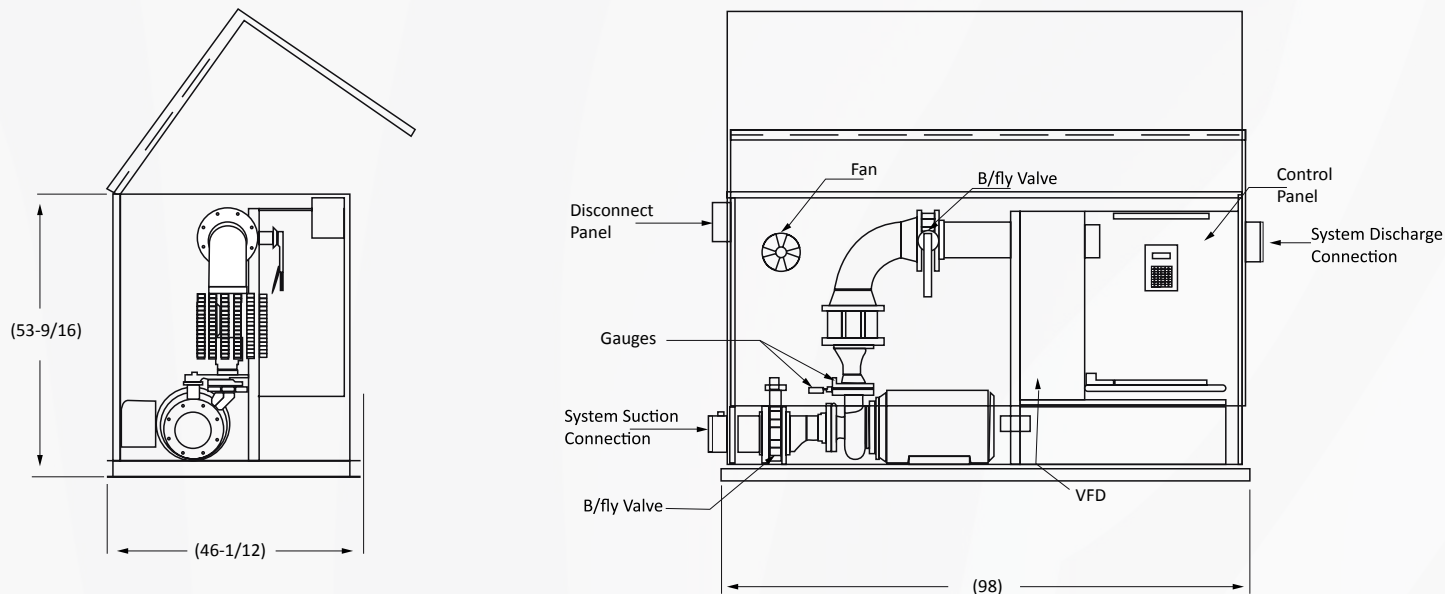
## Certifications



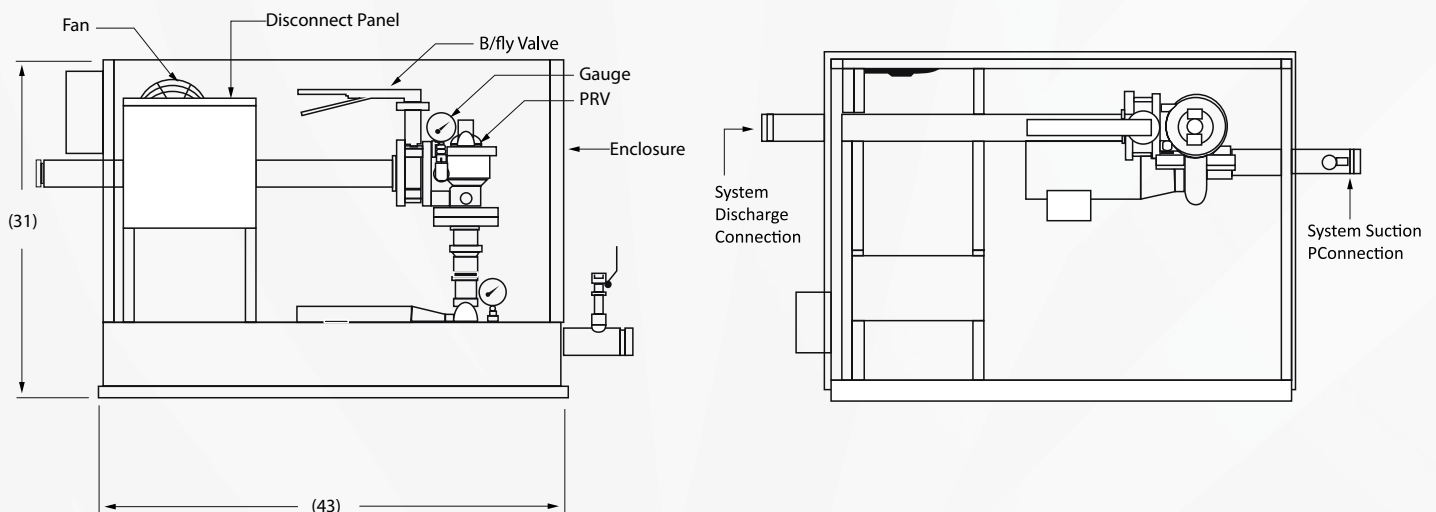
# WHAT IS AN IRRIGATION SYSTEM?

Irrigation is the replacement or supplementation of rainwater with another source of water. The main idea behind irrigation systems is that your lawns and plants are maintained with the minimum amount of water required. The implementation of an irrigation system will help conserve water, while saving you time, money, preventing weed growth and increasing the growth rate of your lawns, plants, crops and flowers.

## Standard VDF Configuration



## Standard PRV Configuration





# JUNGLECAT -TIGERFLOW'S IRRIGATION SYSTEM

The TIGERFLOW Junglecat is a complete turn-key solution for small to mid-size lift pump applications to help conserve water and save money.

## Benefits

- Single source responsibility
- Certificate of Product Liability Insurance
- Prefabricated and factory tested - NIST Traceable Test Facility
- UL/C-UL Listed Packaged Pumping Systems (QCZJ)
- ASME Section IX Certified Pipe Welders
- AWS D1.1 Certified Structural Welders
- UL Standard 508A - Standard for Industrial Control Panels
- Engineered to Order designs

## Applications

- Parks
- Sport Facilities
- Apartment Project
- Shopping Center
- Streetscapes
- Commercial Landscape

## Standard Features

- Simplex, Duplex, Units
- Fiberglass or Aluminum Enclosure
- Pumps: Vertical Multistage, End Suction, Self-Priming
- Manifolds: 304/316 Stainless Steel, NSF-61 Epoxy Coated Carbon Steel
- Isolation Valves: Lug and Grooved Butterfly, or Full Port Ball
- Control Valves: Silent Checks Valves or Pressure Reducing/Check Piloted Valves
- Skid: Structural Steel (Open or Deck plate)
- Controls:
  - » PLC and HMI based controls technology
  - » Constant Speed or Variable Speed
- ASHRAE 90.1-2010 Compliant Control Algorithm (Variable Speed Systems)
- Performance Test

## Certifications





**TIGERFLOW®**  
Engineered Systems to the World

# STANDARD TIGER'S EYE CONTROLLERS - THE MARK SERIES

- Mark II Pressure Booster - Constant Speed
- Mark III Tank Level
- Mark IV HVAC Multi-Zone - Constant Speed
- Mark V Pressure Booster - Variable Speed
- Mark VI HVAC Multi-Zone - Variable Speed
- Mark VII Chiller Sequencing - Variable Speed
- Mark VIII Data Center Control
- Mark X Plant Controller
- Mark R Variable Speed with Filter

STANDARD TIGER'S EYE CONTROLLER							
	MARK II	MARK III	MARK IV	MARK V	MARK VI	MARK VII	MARK VIII
Function	Booster	Level	HVAC	Booster	HVAC	Chiller Seq	Data Center
Constant Speed	S	S	S				S
Variable Speed Pumps				S	S	S	S
PLC with touch screen HMI	S	S	S	S	S	S	S
Maximum pumps per controller	4*	4*	4*	4*	4*	4*	4*
Tank level control		S					
System Pressure transducer	S	S	S	S			
Suction Pressure Transducer	S	S	S	S			
Differential Pressure Transducer			!		S	S	S
Flow Meter	!	!	!	!	!	!	!
Float / Level Switch	E	E		E			
Flow Switch	E	E		E			
Common alarm horn & dry contacts	S	S	S	S	S	S	S

\* Custom programming available to accommodate more than 4 pumps.

S - Standard feature

E - Enabled feature for field supplied switch

! - Optional feature

N/A - Not applicable



# MARK V CONTROLLER

## Benefits

- ❑ Single source responsibility
- ❑ Certificate of Product Liability Insurance
- ❑ Prefabricated and factory tested - NIST Traceable Test Facility
- ❑ UL/C-UL Listed Packaged Pumping Systems (QCZJ)
- ❑ ARCSA 63 Compliant systems
- ❑ ASME Section IX Certified Pipe Welders
- ❑ AWS D1.1 Certified Structural Welders
- ❑ UL Standard 508A - Standard for Industrial Control Panels
- ❑ Engineered to Order Designs

## Applications

- ❑ Plumbing: Flushing toilets & urinals
- ❑ Cooling Tower make-up
- ❑ Landscape/Irrigation: Sprinklers
- ❑ Washing clothes, vehicles etc.
- ❑ Fire protection systems
- ❑ Agricultural Process Water
- ❑ Pubic Fountains
- ❑ Ice Rinks
- ❑ Other non potable applications

## Certifications



## TIGERFLOW Control Sequences:

- |                               |                                      |
|-------------------------------|--------------------------------------|
| ❑ Pressure Sequencing         | ❑ Boiler Sequencing                  |
| ❑ Flow Sequencing             | ❑ BTU Calculations & Sequences       |
| ❑ Suction, Discharge Pressure | ❑ Variable Volume, Constant Speed    |
| ❑ Level Sequencing            | ❑ Cooling Tower Control              |
| ❑ Best Efficiency Monitoring  | ❑ Automated Valve Control            |
| ❑ Wire to Water Efficiency    | ❑ Temperature Control                |
| ❑ Variable Primary Control    | ❑ Data Logging                       |
| ❑ Primary/Secondary Control   | ❑ Energy Management System Interface |
| ❑ Chiller Sequencing          |                                      |

“Have **PRIDE** in  
everything you do!”





**P**ersonal  
**R**esponsability  
**I**n  
**D**elivering  
**E**xcellence





**TIGERFLOW®**  
*Engineered Systems to the World*