Totes, Portables & Custom Fermentation Tanks
Skid Systems
Mix Tanks
Storage Tanks
Process Vessels
Company Profile

JVNW is a premier design-build company providing cost effective solutions from concept through installation. The vessels, mixers, and systems manufactured by JVNW are an integral part of production for the following key industries:

- Food
- Bio-Pharm
- Beverage/Juice
- Cosmetic
- Pure water
- Beer/Wine
- Nutraceutical
- Chemical
- Alternative energy

We pride ourselves on the collaborative nature of our customer relationships. The result is a rich history of repeat business.

What We Do

Service is an essential part of our products. Our goal is to accept nothing short of total customer satisfaction. To accomplish this, JVNW operates on the following principles:

- We make a point to understand your business. We encourage feedback, we want to continually improve and learn.
- Price quotations are prepared quickly, often within a day.
- A Project Manager is assigned to every order.
- Every piece of equipment is subjected to extensive quality control. Every single weld is checked and signed. We are an ASME code shop and adhere to 3A standards. cGMP procedures are followed.
- Projects are completed and delivered on time. Period.
- Full year warranty. All defects in parts or workmanship are fixed or replaced for one year. If our good customers think a defect is our fault, then it’s our fault. We run our business honestly and we assume the same of others.
JVNW Vessels & Process Systems

- WFI Vessels
- Bioreactors
- Portable Transfer Vessels
- Sterile Surge Vessels
- Fermentation Vessels
- Bio-storage Tanks
- Kettles
- Pilot Scale and R&D Vessels
- Agitation Systems

One Source:

- Mixer laboratory
- Ultra-sanitary Sanifoil Impeller, solid shafts
- Factory electropolishing
- Controls, instrumentation, wiring:
  - level
  - pressure
  - DO
  - RPM sensors
  - temperature
  - pH
  - conductivity
  - pressure relief
  - displays

- Complete mixer installation
- Cleaning devices, fixed positioning, testing
- Mixer and tank performance tested prior to delivery (FAT)
- Pre-validation documentation packages
The Geometry of a Process Vessel

The Complete Process Vessel is one where all components are perfectly matched for efficiency and performance. Cleaning devices must reach every corner but must not interfere with shafts and impellers. Instrumentation must be properly located to avoid false readings. Heat transfer jacketing must be sized for batch loads or zoned for flexibility. The same mechanical engineering talent that invented the patented Sanifoil and Easy Change mechanical seal (patent pending) continually solve the most difficult processing challenges. Instrumentation, mixer and vessel are designed as one, and undergo complete performance testing prior to shipment. JVNW pre-validation support is thorough and on time.
**JVNW Holding Tanks**

The JVNW manufacturing plant accommodates large tank fabrication. The 65 foot tall building allows one piece vertical assembly for tanks up to 50 feet tall. Vertical assembly is an economical manufacturing method for large tanks. Vessels exceeding 50 feet in height can utilize the vertical assembly method with the exception of the final circumferential weld.

The actual building site or installation constraints may require on-site tank assembly. Seismic conditions are always considered.

**Venting**

Venting is especially critical in large volume tanks. General rules and calculations are compiled with weather related effects to vent large tanks built for outdoor service.

**Tank Skirts**

Large tanks can be outfitted with an enclosed skirt allowing tanks in exterior locations to safely house instrumentation and monitoring equipment.

**Legs**

Mild steel or stainless steel legs, diagonal cross bracing and center supports are used in place of bases when applications require on-site adjustability.

**Load Cells**

Load cells are mounted on sidewall brackets or legs. Sidewall bracket mounting facilitates suspended vessels, and are braced structurally within the tank wall. Leg-mounted load cells can be supplied during tank construction.

**Base**

Economical sectional bases are available in coated structural steel. The egg crate design can accommodate sloping or flat bottom tanks.

Storage tanks are most often sized using multiples of tanker load capacity.

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15,000 gallon Bulk Wine Storage Tanks, bench mounted for outdoor service.
50,000 gallon Bulk Storage Tank preparing for transit.

Tip-up Formula
Clearance (C) needed for tip up: \( C = \sqrt{A^2 + B^2} \)

6,000 gallon single wall Storage Tank. 2B (mill) finish, caged ladder, top rail, sloping bottom.

8,000 gallon dished bottom Storage Tank with shadowless access door.
Mix Tanks

Storage Tanks

“revolutionary performance”

Mixers
- Double/Triple counter-motion mixers
- High shear mixers
- Ribbon style blenders
- Scrape mixers
- Gate style mixers
- Multiple Agitation systems

Integral Parts
- Sanifoil impellers (patented)
- Turbine impellers
- Full/Partial sweeps
  - side sweeps
  - scrapers
  - counter rotating scraper turbines

5,500 gallon jacketed Mix Tanks (for high viscous products), with scrape surface mixers and high efficiency gear motors/reducers (right). 3,400 gallon BioDiesel Reactors with explosion-proof mixer motors (left).
The Complete Mix Tank

All aspects of a desired mixing process are thoroughly researched before designing a JVNW mix tank. A JVNW mixer testing laboratory is available to check viscosity and mixing characteristics of customer supplied samples. The data is evaluated by the engineering department to determine proper mixer design.

The rheology of the fluid to be agitated is an important factor, as well as the desired mixing levels, utilities available, time constraints, and any unusual environmental considerations such as explosive atmospheres, foaming, burn on, etc. The whole process from shaft sizing to seal design is most effective when incorporated into the tank design.

JVNW combines tank fabrication experience with applications knowledge.

**JVNW Mixer Features**

- Plate or clamp mounting
- Electropolish finish for wetted surfaces available
- Gear-reduced drive for low-shear mixing
- Non-toxic, edible lubricants used in gear reducers
- Solid shafts to eliminate potential source of contaminates
- Wide selection of sealing systems:
  - Dry running, single mechanical seals with debris capture well
  - Split mechanical seals for ease of maintenance
  - Single and double cartridge-type mechanical seals
    - Low pressure lip seals
    - CIP containment seals and slingers

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Process Mix Tanks — removable tops, right angle and parallel gear motors.

Ointment Processor, full scrape mix tank batch homogenizer.

CAD modeling and rendering

Interior view, High Shear Mixer.
“simplify the process”

**Skid Mounted Process Systems**

- Cosmetics – Personal Care
- Food-Juice
- Alternative energy
- Nutraceutical
- Water reclamation
- Bio/Pharm
- Microbrewing

**Modular Systems**

To expedite installation and avoid unwelcome surprises in the field, many JVNW customers prefer to skid mount portions of their process equipment. The modular approach has helped simplify the installation of complicated processes, and has gained wide acceptance in the bio-pharmaceutical industry. Partial or fully skid-mounted systems have also proven to be popular with food, beverage, cosmetic, and alternative energy industries. JVNW has developed small flexible, expandable units with high levels of customer satisfaction for these industries.

JVNW prides itself on its record of breakthrough innovation, attention to detail and on-time delivery. Complete confidentiality for OEMs.

**Turn-key Systems**

JVNW provides experienced, professional installation and commissioning services for domestic as well as international locations. We apply creative and innovative techniques in adverse situations.

**JVNW vessels provided to OEM system integrator.**
Automated Pilot Plant, large scale brewery.

Engineering

- 3-D modeling
- P&IDs
- Flow diagrams
- Mechanical and electrical schematics
- Full/Partial automation controls
- Custom system components

Manufacturing and Project Management

- Comprehensive system maintenance manual
- Documentation package
- FAT
- Commissioning
- Full parts department

Modular 7BBL Brewing System.

Sanitary Color Supply Blending Skid.

In-line Dairy Ingredient Incorporation Skid.

Water Reclamation Module, 500,000 gallons per day capacity.
JVNW Wine Tanks

JVNW is a leader in manufacturing innovative tanks for cutting edge fermentation technology. All tanks are available in 2B (mill) finish or polished stainless steel.

- Drains, sump style for complete drainage
- Racking ports can be outfitted with drain screens or angled and reinforced for mixer use.
- Sample ports
- Braced temp wells
- Vent ports

Dimpled heat transfer surfaces (HTS) allow economical cooling/heating jackets to regulate the heat of fermentation. Multiple or split jackets offer precise control.

Legs/bases are adjustable and can always accommodate fork lifts. Legs can be replaced with anchor pads for bench mounted vessels. Tank sizing specifications reflect seismic conditions.
**Brewing Vessels**

- Turn-key systems
- Brewhouses 7bbls to 50bbls
  - Lauter Tun
  - Brew Kettle
  - Mash Kettle
  - Whirlpool
- Fermenters
- Hot liquor tanks
- Control panels
- Lautering stations
- Cellar tanks
- Brewers platforms

**JVNW Craft Brewing Vessels**

JVNW Inc is an original partner in the pioneering efforts to revive the craft brewing industry. The JVNW craft brewing system is a flexible turnkey system with sturdy components built for the brewhouse segment.

JVNW supplies custom fermentation and cellar tanks as well as complete automated brewhouses to microbreweries.

Services include design, layout, equipment manufacturing, installation, piping, system testing, and commissioning. A large parts department maintains detailed brewery records, and stocks spare parts for the majority of craft breweries.

Stainless steel and copper brewhouses, in production.
Totes & Portable Tanks

ASME Transfer Tanks, cosmetic compounding.

Portable Open Top Totes small lot fermentation.

Two Ton Totes, jacketed stackable wine totes with manways.

Custom Fabrication

Horizontal Vegetable Oil storage tank.

Small-scale R&D vessel.

Vacuum Chambers with hinged heads.

Thickness (gauge)

14 Gauge
12 Gauge
10 Gauge

Gauge material
Stainless steel
Actual size

Pressure Drop (PSIG per Foot of Travel)

JVNW RSW Jackets

JVNW MD Jackets
Standard (commonly used) Stainless Steel Welds & Finishes

Weld sample parent material: 150 grit polished stainless steel, unless otherwise noted.

**MIG Welds**

<table>
<thead>
<tr>
<th>Process</th>
<th>Condition</th>
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</thead>
<tbody>
<tr>
<td>MIG</td>
<td>As-welded</td>
</tr>
<tr>
<td>MIG-Double Pass</td>
<td>As-welded</td>
</tr>
<tr>
<td>MIG</td>
<td>Buffed/Polished</td>
</tr>
<tr>
<td>MIG-Double Pass</td>
<td>Buffed/Polished</td>
</tr>
<tr>
<td>MIG</td>
<td>Buffed/Polished 2B Mill finish</td>
</tr>
<tr>
<td>MIG-Double Pass</td>
<td>Buffed/Polished 2B Mill finish</td>
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**TIG Welds**

<table>
<thead>
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<th>Process</th>
<th>Condition</th>
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<tbody>
<tr>
<td>TIG</td>
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<tr>
<td>TIG</td>
<td>Buffed/Polished</td>
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<tr>
<td>TIG</td>
<td>Ground smooth to 150 grit</td>
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<tr>
<td>TIG</td>
<td>Buffed/Polished</td>
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<tr>
<td>TIG</td>
<td>Ground smooth to 180 grit</td>
</tr>
<tr>
<td>TIG</td>
<td>Ground Smooth to 240 grit and Electropolished</td>
</tr>
</tbody>
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**Roughness Average**

The peaks and valleys of the stainless surface are measured by a profilometer and averaged together to determine the roughness average (Ra) of the surface. The Ra is measured in micro inches—One-million micro inches = one inch.

- Ra 50 = 100 grit
- Ra 35 = 120 grit
- Ra 30 = 150 grit
- Ra 25 = 180 grit
- Ra 18 = 240 grit
- Ra 10 = 320 grit