

FLOWAY® PUMPS

Vertical Turbine Pumps

Oil & Gas Industry

Excellent
Minerals
Solutions



71476 Edna Street
Covington, LA 70433

985.871.5173



Meeting the needs of the oil & gas industry worldwide

Floway Pumps takes pride in the fact that all of our products are manufactured in house giving total control and maximum capabilities.

Unlike our competitors, Floway's unparalleled pump product is manufactured all under one roof. That means that every step from designing to manufacturing and the finished product is controlled in our state of the art facility in Fresno, California, USA

Setting the standard for vertical turbine pumps

By concentrating solely on the vertical pump product line, Floway has become a dominant force in today's highly diversified market. Floway pumps are recognized worldwide for superior quality, top hydraulic performance and long service life.

In applications where the cost of ownership often outweighs capital cost as a priority, we help our customers address such issues as longevity, efficiency of operation and ease of maintenance.

- Through continuous improvements to materials, product design, engineering and manufacturing, we minimise downtime and reduce the risk of disruption to our customers' operations.
- By ensuring that we have a global presence, on site wherever our customers require us to be, we help release the synergy benefits of standardised processes worldwide.
- Working in close partnership with our customers allows us to develop end-to-end engineering solutions to the technical challenges they face, delivering genuine competitive advantage.

Dynamic products with global outreach

Floway Pumps combined with Weir Minerals has the capability to support customer operations worldwide with consistent products and local engineering expertise. As part of The Weir Group, we have the reach and resource to grow into emerging markets alongside our customers.

Weir Minerals has operations across:

- North America
- South America
- Africa
- Europe & UK
- Australasia
- Former Soviet Union



Top: API discharge head

Above: Bowl assembly

Right: Floway's testing facility



Above: Fabrication

Left: Floway's state of the art facility is located in Fresno, California, USA.

Far left: Stainless steel impellers



Excellence through innovative design and precision manufacturing is why Floway® Pumps are used extensively in the oil and gas industry.

End Users

- Shell Oil
- BP Arco
- Amoco Oil Co.
- Fina Oil
- Pemex
- Andarko
- Chevron/Texaco
- All-American Pipeline
- Koch Oil
- Occidental Petroleum
- Kinder Morgan Energy Partners
- Petro-Canada Refinery, Edmonton
- Enbridge Pipelines
- CNRL Horizon Oil Sands
- Suncor
- Syncrude

Typical Services

- Vertical process
- Light hydrocarbon, high vapor pressure (low NPSHA)
- Pipeline, pipeline booster
- Offshore platform/sea water lift (crude oil transfer)
- Refinery service
- LPG transfer
- Secondary recovery
- Cryogenic liquid
- Cooling water
- Aircraft fueling
- Terminal/Transfer



Weir Floway pumps are built around the versatility of the vertical pump design. Depending upon exact job specifications, our engineers select the best combination of pump components and materials of constructions to meet virtually any oil and gas application.

Engineering capabilities

Floway utilizes an in house staff of licensed professional engineers to ensure maximum control over design specifications. Engineering capabilities include:

- 3D CAD modeling
- In-house hydraulic design
- Products engineered to customer specifications
- Special material selection
- Flow analysis
- Intake design review
- Stress, torsional and seismic analysis
- Natural frequency analysis and construction for VFD operation
- Low vibration design (PMLV™)

Industry leading low vibration

Weir Floway is dedicated to manufacturing pumps with industry leading low vibration levels. We offer Precision Machined Low Vibration (PMLV™) pumps with vibration levels at one half of the standards set by the Hydraulic Institute.

PMLV features:

- Premium machined and balanced motor
- Specially toleranced motor coupling machined by Weir Floway
- Jacking posts for precise motor/pump shaft alignment
- Impellers balanced per API 610
- Reduced run-out on motor base
- Extends MTBF by more than 200%

Customer focused product development

As a service to our customers, Weir Floway has developed two specification selection programs to allow customers to specify projects and product details.

The SCORE selector program is a web based program which allows customers to search pump selection by flow and head specifics.

Build A Spec™ is a specification assistance program that breaks down the following components:

- Discharge head design
- Sealing arrangements
- Column construction
- Bowl construction

The Weir Floway specification tools can be accessed through www.weirminerals.com.

In house manufacturing capabilities

Fabrication - The Weir Floway fabrication facility is staffed by ASME Boiler Code Section IX certified welders.

Machining - Computer controlled lathes, large boring mills, and individual production equipment ensure an efficient and flexible manufacturing process.

Balancing - Dynamic and static balancing of rotating elements ensure low vibration performance

Final Assembly - All pump components are assembled to customer specifications for top efficiency, long service life, and high quality appearance.

Flow testing

A major engineering function of any pump manufacturer is hydraulic flow testing under a variety of operational conditions. Testing ensures that pump performance matches specifications and that all components are operating properly.

Testing and analysis capabilities include:

- Three testing pits for flows to 40,000 GPM (9,085 M3/HR)
- Hydrostatic testing equipment for pressures to 5,000 PSI (345 Bars)
- NPSH testing equipment available for flows to 30,000 GPM (6,814 M3/HR)
- Pressures to 2,500 PSI (172 Bars)
- Electrical power through 2,500 HP (1864 KW)
- All pressure flow measuring equipment calibrated on a scheduled basis with traceability to National Bureau of Standards
- Four Vibration monitors available including full spectrum real time analysis. Proximity probes available for measuring dynamic shaft run-out
- Critical "Reed" Frequency testing - three exciter sizes available for pump and motor structural testing
- Capable of testing a complete engine driven pump
- Both 50 Hz and 60 Hz power available
- Variable Frequency Driven pump testing up to 400 HP with VFD. Higher HP testing available upon request
- Coating spark test (low voltage high voltage)
- Non-Destructive testing, NDT includes dye penetrant, magnetic particle, radiography, ultrasonic and noise level

Weir Floway utilizes the ISO 9000 and ISO 14001 process control systems.



Floway® Pumps VHP Series

VHP VS1 Single Casing

VHP VS6 Double Casing



Our VHP Series is compliant with the current API 610 standards.

VHP Series features include:

- Compliant with API 610 current edition.
- Multi-staging in the medium specific speed range from 1,300 Ns through 5,000 Ns.
- High pressures with premium efficiencies and low operating costs.
- Low NPSH first stage construction with Nss below 11,000 is available which allows for a reduction in can length for double casing pumps (VS6) and minimum submergence for wet pit single casing pumps (VS1).
- Pressure and flow variations are achieved by changing number of stages or impeller type.
- Pump bowl assembly is characterized as low energy per stage resulting in a broad flow range with excellent hydraulic stability.
- Thrust balanced impellers are available for pump axial thrust reduction and assist in obtaining the desired thrust bearing rating/life.
- Thrust pot assembly is available in applications where non-thrust carrying motors are required.

Type of Pump	VHP VS6	VHP VS1
Pump Configuration	Vertical close coupled single or multistage turbine with closed suction	Vertical close coupled single or multistage turbine. Wet pit
API-610 Class Type	Vertical suspended, double casing can type.	Vertical suspended, single casing wet pit type.
Capacity	To 35,000 USGPM (8,000 M3/HR)	To 35,000 USGPM (8,000 M3/HR)
Pressure	To 3,000 PSI (200 Bars)	To 1,500 PSI (100 Bars)
Liquid Handled	Water, chemical solutions, petroleum, condensates, L.P.G., and hydrocarbons.	Water, chemical solutions, (acidic or alkaline), and hydrocarbons.
Temp. Range	-130°F (-90°C) To +450°F (+220°C)	+450°F (+220°C)
HP Range	To 2,500 HP (1,864 KW)	To 2,500 HP (1,864 KW)
Drivers	Electric motors, steam turbines, engine/gear drives, and variable speed drives.	Electric motors, steam turbines, engine/gear drives, and variable speed drives.
Materials of Construction	Any machinable and weldable alloys or combinations available.	Any machinable and weldable alloys or combinations available.



71476 Edna Street
Covington, LA 70433
985.871.5173

For more information on any of these products or support services please contact your nearest and most appropriate Weir Floway sales office or visit:

www.weirminerals.com

North America	flowayna@weirminerals.com
South America	flowaysa@weirminerals.com
Europe & UK	flowayukeurope@weirminerals.com
Middle East	flowaymiddleeast@weirminerals.com
Asia	flowayasia@weirminerals.com
Floway Sales	flowaysales@weirminerals.com
Floway Parts	flowayparts@weirminerals.com

Weir Floway, Inc.

2494 S Railroad Avenue
PO Box 164
Fresno, CA 93707 USA

Tel: +1 559 442 4000
Fax: +1 559 442 3098
Email: floway@weirminerals.com

Excellent
Minerals
Solutions

