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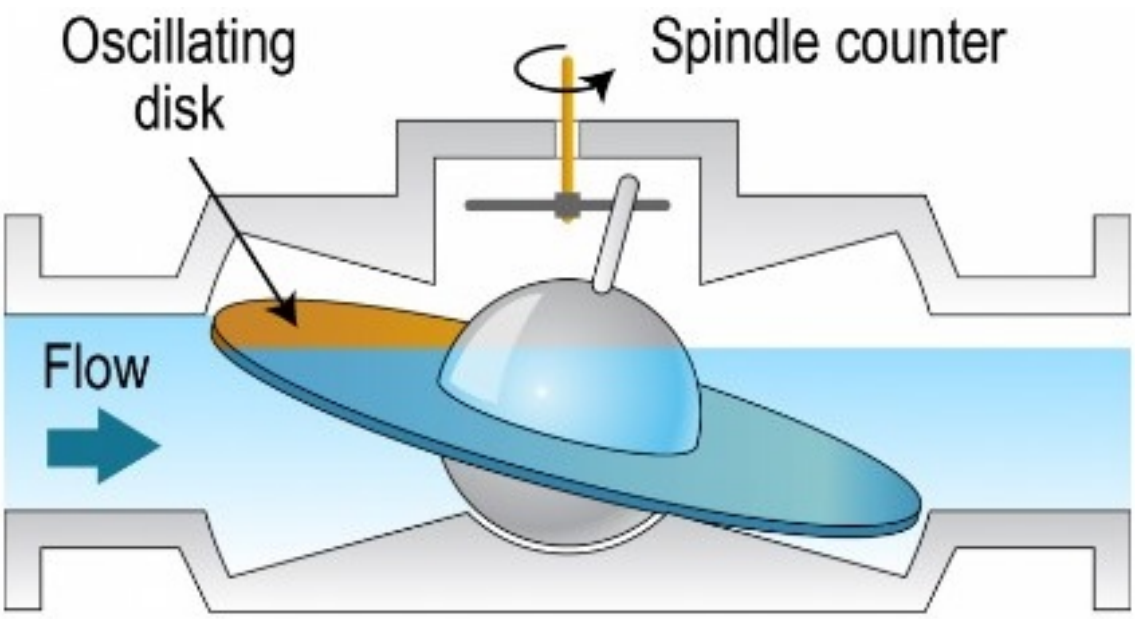
The World Market for Positive Displacement Flowmeters, 3rd Edition

Overview



Cross section view of a nutating disc meter
Image from www.energy.gov/eere

December 2021

www.FlowPD.com

The World Market for Positive Displacement Flowmeters, 3rd Edition

Flow Research has completed a new market study on the worldwide positive displacement (PD) flowmeter market. The primary goal was to determine the size of the positive displacement flowmeter market in 2019 and 2020, with forecasts through 2024. We selected these years so we could determine the effects of the pandemic on the PD flowmeter market. The study is called ***The World Market for Positive Displacement Flowmeters, 3rd Edition***.

Reasons for Growth

Positive displacement flowmeters are the workhorses of today's flowmeter world. They perform many important flow measurements that many people take for granted. Most notably, they are widely used for water and gas billing in residential, commercial, and industrial applications.

The large, saturated PD market makes revenue growth challenging. However, at the same time, the PD market overall benefits from the strength of a large installed base.

Rationale for Study

Even though PD meters face stiff competition from new-technology meters in some segments, they still remain the best solution for certain applications. PD meters excel where many other flowmeters have difficulties: low flowrates and high viscosity liquids.

Key positive displacement flowmeter market issues addressed in this study:

- Growth outlook for PD flowmeters
- Use in water, gas, oil and other process applications
- Replacement by other technology types
- Competitive price pressure
- End-user needs
- Features that end-users are looking for
- How to compete in this highly competitive market

Positive displacement flowmeters remain one of the most widely used types of flowmeters for measuring the flow of water, gas, and petroleum liquids. They remain a solid choice for many applications in today's modern process control environment.

We believe it is important to stay current with this market. Our research has determined how well PD flowmeters are holding their own in today's competitive environment.

The study plans to accomplish multiple purposes:

- Determine worldwide market size for the PD flowmeter market in 2019 and 2020
- Determine worldwide market shares for the PD flowmeter market in 2019
- Forecast market growth for all types of positive displacement flowmeters through 2024
- Identify the industries where positive displacement flowmeters are used, and identify market growth sectors
- Provide a product analysis for the main companies selling into the positive displacement flowmeter market
- Provide strategies to manufacturers to sell into the positive displacement flowmeter market
- Provide company profiles of the main suppliers of positive displacement flowmeters

Background

Flow Research has been following the positive displacement flowmeter market since we published the first edition of our worldwide PD flowmeter study in 2002. We published a second edition in 2012 and provide quarterly updates on the market in our ***Market Barometer***.

In conducting this study, we contacted all known manufacturers of positive displacement flowmeters worldwide to assemble a picture of the total PD flowmeter market. We asked suppliers to provide detailed information about geographic segmentation, industries sold into, types of PD flowmeters sold, and many other product segments. As a result, the study identifies where growth is occurring in the market, and the underlying factors driving that growth.

When analyzing target markets, Flow Research uses the perspective of all three segments – manufacturer, distributor/representative, and end user. We maintain regular communication with all three of these groups in order to be best positioned to note important shifts in technologies or buying patterns. We also use this steady flow of new information in support of our two Worldflow quarterly publications, ***Market Barometer*** and ***Energy Monitor***. (www.worldflow.com.)

Illustrations of Principles of Operation

For the first time in this new study, we write out the principles of operation of the different types of positive displacement flowmeters. We have also asked the manufacturers to supply illustrations of the different types. See below for one example.

Segmentation

Geographic Segmentation

- North America (U.S. and Canada)
- Western Europe
- Eastern Europe/FSU
- Mideast/Africa
- Japan
- China
- Asia/Pacific
- Latin America

Technology Types

- Oval Gear
- Rotary
- Gear
- Helical
- Nutating Disc
- Piston
- Diaphragm
- Spur Gear
- Other

Fluid Types

- Municipal/Industrial Water
- Municipal/Industrial Gas
- Petroleum Liquids
- Non-petroleum Liquids (other than water)

Casing Types

- Single
- Double

Line Sizes

- ≤ 2 inches
- > 2–4 inches
- > 4–8 inches
- > 8 inches

Accuracy Levels

- ≤0.25%
- >0.25% to ≤0.50%
- >0.50% to ≤1.00%
- >1.00% to ≤2.00%
- >2.00%

Industries

- Oil & Gas (Production)
- Oil & Gas (Midstream)
- Refining
- Gas Distribution
- Oil Distribution
- Gas Utility (Commercial / Industrial)
- Chemical
- Food & Beverage
- Pharmaceutical
- Pulp & Paper
- Metals & Mining
- Power
- Water & Wastewater
- District Energy
- Other

This study also includes:

Supplier Market Shares

- Worldwide and
- by geographic region

Growth Factors and Strategies for Success

- Discussion of market forces at work
- Factors contributing to growth
- Factors limiting growth
- Strategic action perspectives
- Real-world success stories

PD Operating Principle

A positive displacement flowmeter measures process fluid flow by continually filling and emptying compartments of known and fixed volume. In its most basic design, these compartments are placed between rotors that serve as measuring elements as they are rotated. Flowrate is calculated based on the number of times these compartments are filled and emptied in a period of time. The number of rotations of the rotor is typically counted by a pulse transmitter and converted to fluid volume and flowrate.

Company Profiles

The following is a partial list of the companies profiled in this study:

- Aichi Tokei Denki
- Badger Meter
- Bopp & Reuther
- Brodie Int'l.
- Diehl Metering
- Dresser Utility Solutions
- Flow Technology Inc.
- Goldcard Smart Group
- Great Plains Industries
- Honeywell Elster
- IDEX companies
- ISOIL Impianti
- Itron
- KRAL
- Macnaught
- Max Precision Flow Meters
- OVAL Corporation
- Red Seal Measurement
- Satam Metering Solutions
- TASI Group companies
- TechnipFMC
- Tuthill Transfer

Flow Research, Inc. is the only market research company whose primary mission is to research instrumentation markets. We create these studies through interviews with suppliers, distributors, and end-users. Topics include all of the flowmeter technologies – both new and conventional – and pressure transmitters; temperature transmitters; and studies on the oil & gas industry. Flow Research also started a working group focusing on flowmeter calibration, and has completed two studies on flowmeter calibration facilities. For further information on studies, links for articles and more visit the Flow Research website at www.flowresearch.com or call us at +1 781-245-3200.

Dr. Jesse Yoder, President of Flow Research and the lead analyst for this study, has 34 years of experience writing about and analyzing process control and instrumentation markets, beginning as president and founder of Idea Network. In addition to the years he has spent writing market studies, Dr. Yoder spent 10 years as a technical writer. Almost four years of this were spent writing technical manuals and training guides for the process control division of Siemens. He also taught technical writing at the graduate level at Northeastern University and the University of Massachusetts Lowell. Dr. Yoder spent 10 years as an adjunct philosophy professor at the University of Massachusetts Lowell and Lafayette College.

Dr. Yoder has received two patents for new flowmeter designs. Several prototypes of these designs have been built and tested AT CEESI and in manufacturer labs. He has led the research of over 250 market studies, published nearly 300 articles on flow and instrumentation in industry journals, and two books. His latest book, *The Tao of Measurement: A Philosophical View of Flow and Sensors*, with Richard E. Morley as co-contributor, was published in 2015 by the International Society of Automation (ISA). Topics covered include temperature, pressure, flow, time, length, and area. Dr. Yoder is currently writing two books called *Advances in Flow Measurement* that will be published in 2022 by CRC Press. One book focuses on new-technology flowmeters and the other book focuses on conventional flowmeters.

Belinda Burum, Vice President, worked in journalism and advertising before entering high tech as a writer, marketing communications manager, and customer references consultant. She joined Flow Research in 2002, and has worked on many projects, studies and publications. She is currently working on promotional materials and company profiles

Norm Weeks, Senior Market Analyst, joined Flow Research in November 2004 after 24-years with Verizon specializing in innovative solutions for major enterprises, introducing new products and lifecycle management strategies, and product marketing. He also served as Director of the Urban Fellows Institute in New York. At Flow Research, he has a major involvement in and his contributions to project development, research, analysis and writing are significant. Custom projects are a specialty.

Leslie Buchanan, Publication Production Associate, and Research Assistant, joined Flow Research in March 2010, with skills from a variety of work and life experiences here and abroad. Early on, she worked with the contacts database, assisted with customer liaison, and took on our publication formats. She has since become increasingly involved in many capacities with Flow Research studies, projects, Worldflow and other publications.

Victoria Tuck, Administrative Assistant, joined Flow Research in June 2012. She has experience in both the fast-paced law firms of Boston, and in various nonprofit organizations. She handles a variety of office functions – essential to keep any business running – as well as assisting in other ways, including the contacts database and news for the Worldflow publications.

Kaleigh Flaherty, Social Media Manager, joined Flow Research in June 2020. She is in charge of our social media outreach, and has brought her graphic design talents to our marketing efforts. Kaleigh is also assisting in our customer contacts and outreach.

The World Market for Coriolis Flowmeters, 8th Edition	flowresearch.com/coriolis
The World Market for Magnetic Flowmeters, 8th Edition	flowresearch.com/mag
The World Market for Ultrasonic Flowmeters, 8th Edition	flowresearch.com/ultrasonic
The World Market for Vortex Flowmeters, 8th Edition	flowresearch.com/vortex
The World Market for Thermal Flowmeters, 3rd Edition	flowresearch.com/thermal
The World Market for Mass Flow Controllers, 4th Edition	flowresearch.com/mfc
The World Market for Multiphase Flowmeters, 2nd Edition	flowresearch.com/multiphase
Multiphase: Module A: The World Market for Watercut Meters	flowresearch.com/watercut

Conventional Flowmeter Studies

The World Market for Pressure Transmitters, 5th Edition	flowresearch.com/pressure
The World Market for Primary Elements, 2nd Edition	flowresearch.com/flowplate
The World Market for Positive Displacement Flowmeters, 3rd Edition	flowresearch.com/pd
The World Market for Turbine Flowmeters, 3rd Edition	flowresearch.com/turbine
The World Market for Variable Area Flowmeters	flowresearch.com/va

Cross-Technology Flowmeter Studies

Volume X: The World Market for Flowmeters, 10th Edition	flowresearch.com/volumex
Volume X: Module A: Strategies, Industries, and Applications	flowresearch.com/volumex
The World Market for Gas Flow Measurement, 5th Edition	flowresearch.com/gasflow
Gas Module A: Hydrogen, Natural Gas, and Other Applications	flowresearch.com/gasflow
Flowmeters in the Oil & Gas Industry	flowresearch.com/oilflow

Flow Calibration Studies

Core Study: Worldwide Gas Flow Calibration Facilities and Markets	flowresearch.com/calibration
Module A: Worldwide Liquid Flow Calibration Facilities and Markets	flowresearch.com/calibration

Temperature

Market for Temperature Sensors in the Americas, 3rd Edition

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Blaise Pascal

The Flow Research Gold Partner Program

To produce studies that most closely match our clients' needs, Flow Research has instituted the Gold Partner Program. This program enables companies who wish to participate at a high level in a study's research to influence its scope and segmentation. In addition, Gold Partners receive regular updates from Flow Research on study progress, and receive a significant discount on the regular price of the study.

Procedure: Early in the planning phase of a study, Gold Partners receive a proposal that includes the proposed segmentation. Gold Partners can propose additional segmentation, and can also suggest changes to the proposed segmentation. While the decision to adopt particular segmentation ultimately lies with Flow Research, and is based on input from all contributors, we do our best to accommodate the specific needs of each of our clients.

During the research phase of a study, Flow Research will issue regular reports that provide updates on the progress of the research. These reports will be sent to Gold Partners, who are then invited to provide any additional input or comments into the study.

Being a Gold Partner requires making an early commitment to purchase the study. However, in return, Gold Partners receive a significant discount off the regular price of the study. Payment can be made either in one amount at the beginning of the study, or split into two, with the second payment due upon delivery of the study.

For additional details, or to find out how the Gold Partner Program applies to any particular study, please contact Flow Research. We look forward to working with you!

For answers to any questions you have regarding the above, please contact Jesse Yoder at +1 781 245-3200, or jesse@flowresearch.com.

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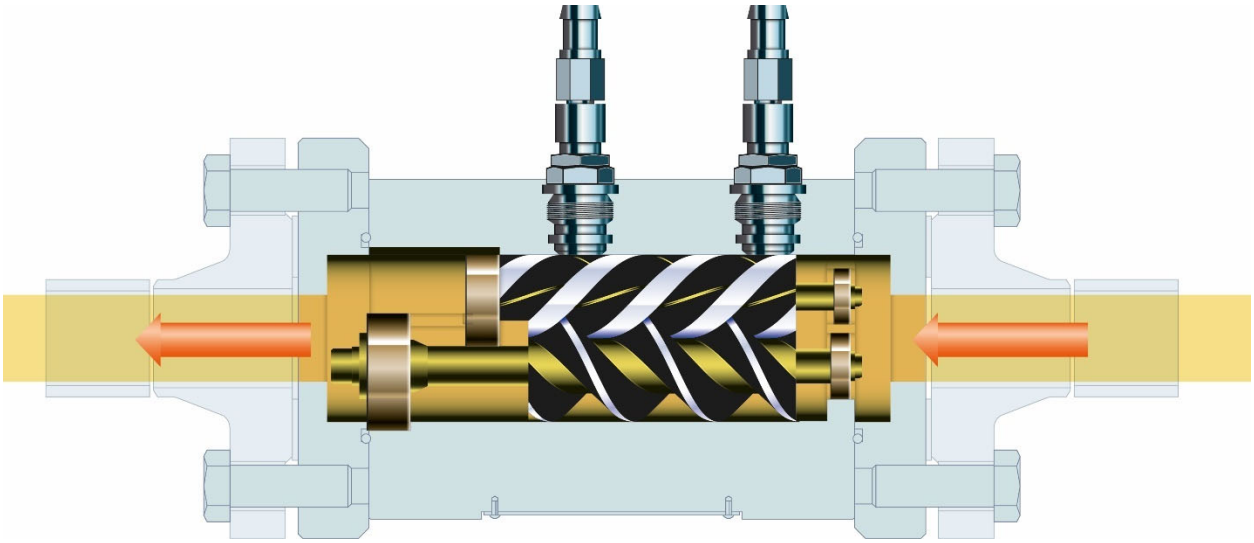

(Cut-away illustration of OMP meter courtesy of KRAL)

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Why Flow Research?

- We specialize in flowmeter markets and technologies.
- We research both new-technology and traditional technology flowmeters.
- We contact every known supplier for each study.
- We have data on the flowmeter market going back to 1992 and have been actively following it since then.
- We offer our studies in both electronic and color-printed hardcopy format.

www.flowresearch.com/pd