



# Contract Manufacturing

Quality Machining and Fabrication Done Right



800 Wellington Avenue, Cranston RI 02910 (401) 461-6366



Proudly Manufactured in the USA



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# Our Capabilities

- MACHINING
- FORMING
- WELDING
- INSPECTION AND EXAMINATION
- ENGINEERING
- REVERSE ENGINEERING



1 | Note: Image shown above is an EGR venturi designed and manufactured by Primary Flow Signal, Inc. Our venturi was installed in over 2,000,000 Detroit Diesel engines measuring for dependable accuracy. Primary Flow Signal, Inc. was awarded the Detroit Diesel Excellence Award for three consecutive years in 2005 - 2008.

## ABOUT

# Primary Flow Signal

Founded in 1983, Primary Flow Signal, Inc. (PFS) was initially focused on design, engineering, manufacturing, sales and service of proprietary Venturi type flow measurement devices for use principally in larger municipal water and wastewater treatment facilities gaining rapid traction with nearly every major municipality in the USA. Today, PFS is recognized as one of the foremost Differential Pressure flow meter authorities in the world

Initially relying solely on unrelated third-party resources to manufacture its growing product lines, PFS steadily expanded markets and product range both by developing its own inhouse world class manufacturing capabilities and capacity, and by strategic acquisitions and organic growth of businesses including manufacturing, product development/R&D, and sales/distribution.

Currently, the group includes manufacturing and sales/distribution operations in the US and Canada, with the PFS facility in Cranston, RI, USA serving as the principal heavy manufacturing facility as well as headquarters for the family of companies.

The core industries served include the municipal, oil & gas, automotive, power, industrial gas, food and beverage(sanitary), military, and aerospace; products and services are provided globally.

The technology, engineering, design and manufacturing skills and expertise, developed and expanded over nearly four decades, supports the PFS-Contract Manufacturing Group in its offering of advanced engineering, machining, welding, fabrication, and assembly disciplines to the global community through diverse channels and markets.



# Manufacturing



- ISO 9001, ASME “S” & “U” & PED 2014/68/EU certified Quality Management Systems enable us to provide unmatched service, quality and workmanship. Conforming to specified requirements and always exceeding expectations, PFS offers significant in-house machining capabilities including an array of CNC and wire EDM
- Expertise in the machining and fabrication of all types of ferrous and non-ferrous metals and plastics including all grades of bronze, aluminum, stainless, carbon, inconel, hastelloy, monel, chrome moly, and most other types of alloys
- Single part prototypes to high volume production runs

# State-of-the-Art Facilities



Primary Flow Signal, Inc.  
Manufacturing Facility Location  
800 Wellington Ave  
Cranston, Rhode Island 02910  
Toll Free: 877-737-3569  
Office: +1-401-461-6366  
Fax: +1-401-461-4450

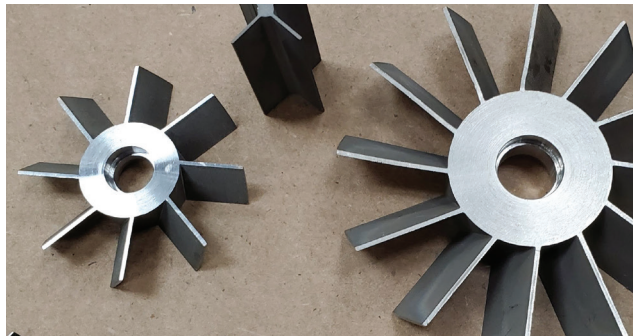
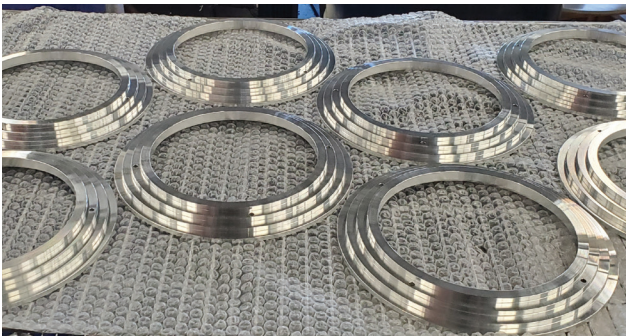
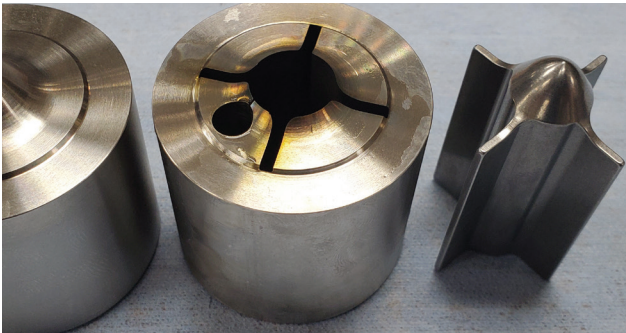
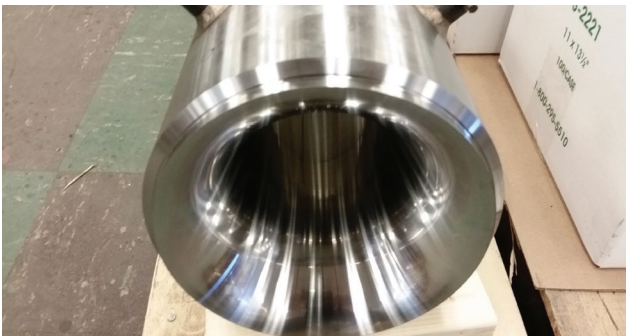


Our 70,000 sqft manufacturing facility offers a comprehensive range of fabrication, testing and finishing services. With multiple 5 ton cranes and 30 ton fork trucks, PFS has the ability to handle very large and heavy components safely for almost any size project.



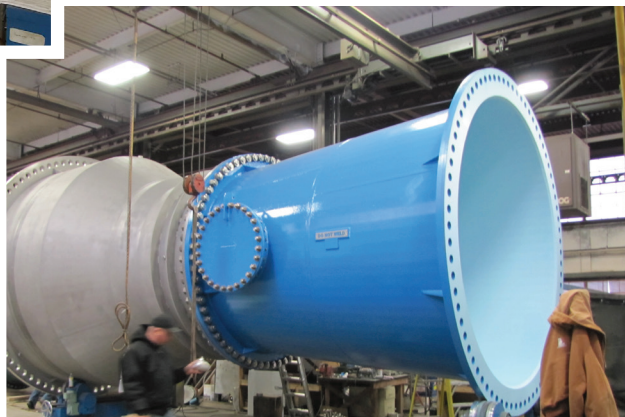
# Small to Medium Scale...

With turning, milling, EDM, electro-coatings, polishing, O2 and other industrial cleaning services, PFS is well equipped to handle a vast array of requirements from prototype phase through to full production.





# ...to Large Scale



Primary Flow Signal, Inc. can accommodate most size projects. Our seasoned large scale manufacturing team is ready for your most demanding specifications in manufacturing, testing and finishing needs.

# Welding

## Welding Engineering

- Our in-house engineering team includes an experienced and degreed Welding Engineer qualified to Domestic and International standards.
- Our welding program maintains a position on the front lines of continuous change and improvement required by both the international standards we comply and the high demand customers we serve.

## Welding Inspection

- AWS certified welding inspection in addition to PT, MT, RT, PMI and Hardness Testing.
- All inspectors are qualified to ASNT SNT-TC-1A

## Post Weld Heat Treatment

- PFS utilizes a Mannings USA Controller & Flexible Ceramic Pad Heaters for in-house post weld heat treatment.

## Welding Processes

- Common weld process exercised daily and backed by decades of quality experience:
- GTAW
- SMAW
- SAW
- FCAW
- GMAW

## ASME IX Qualified Welding Procedures

- PFS maintains a robust library of welding procedures for numerous possibilities for material groups including:
- Carbon Steel (P1) to Carbon Steel (P1)
- Stainless Steel (P8) to Stainless Steel (P8)
- Grade 11 (P4) to Grade 11 (P4)
- Grade 22 (P5A) to Grade 22 (P5A)
- Grade 5 (P5B) to Grade 5 (P5B)
- Grade 9 (P5B) to Grade 9 (P5B)
- Grade 91 (P15E) to Grade 91 (P15E)
- Nickel Based material
- P42 to P42
- P43 to P43
- P45 to P45
- Duplex/SuperDuplex P10H to Duplex/SuperDuplex P10H

# Welding (Con't)

- Carbon Steel (P1) to Stainless Steel (P8)
- Grade 11 (P4) to Stainless Steel (P8)
- Grade 22 (P5A) to Stainless Steel (P8)
- Stainless Steel (P8) to Nickel Base (P42)
- Stainless Steel (P8) to Nickel Base (P43)
- Stainless Steel (P8) to Nickel Base (P45)
- \*\*\* Others Available upon Request

## ASME IX Welder Qualification

- PFS welders are all qualified in accordance with ASME IX and many are also qualified in accordance with PED 2014/68/EU & EN15614-1
- ASME IX Qualified Welding Procedures
- PFS currently has qualified welding procedures for the following materials.
- Carbon Steel (P1) to Carbon Steel (P1), (With and Without PWHT)
- Stainless Steel (P8) to Stainless Steel (P8)
- Grade 11 (P4) to Grade 11 (P4), (With and Without PWHT)
- Grade 22 (P5A) to Grade 22 (P5A), (With PWHT)
- Grade 5 (P5B) to Grade 5 (P5B), (With PWHT)
- Grade 9 (P5B) to Grade 9 (P5B), (With PWHT)
- Grade 91 (P15E) to Grade 91 (P15E), (With PWHT)
- Nickel Based material
- P42 to P42
- P43 to P43
- P45 to P45
- Duplex/SuperDuplex P10H to Duplex/SuperDuplex P10H
- Carbon Steel (P1) to Stainless Steel (P8), (With and Without PWHT)
- Grade 11 (P4) to Stainless Steel (P8) (Without PWHT)
- Grade 22 (P5A) to Stainless Steel (P8) (With PWHT)
- Stainless Steel (P8) to Nickel Base (P42)
- Stainless Steel (P8) to Nickel Base (P43)
- Stainless Steel (P8) to Nickel Base (P45)
- Many of the above combinations are also qualified in accordance with PED 2014/68/EU & EN-15614-1
- ASME IX Welder Qualification
- PFS welders are all qualified in accordance with ASME IX and many are also qualified in accordance with PED 2014/68/EU & EN-15614-1



# Accreditations & Certifications

Our Certifications include:

- ISO 9001
- ASME "S" & "U"
- Pressure Equipment Directive 2014/68/EU Module H
- Canadian Registration Number (CRN)



**PED**  
**2014/68/EU**



# Examination & Testing



Our ASNT SNT-TC-1A certified examination services along with additional testing includes:

- Visual Weld Examination (VT)
- Liquid Penetrant Examination (PT) (LPI)
- Mag Particle Examination (MT)
- Ultrasonic Examination (UT)
- Radiography Examination (RT)
- PMI Testing
- Hardness Testing
- Ferrite Testing
- Hydro Pressure Testing
- Pneumatic Pressure Testing
- Helium Leak Testing
- Coating Wet and Dry Film Testing
- Cryogenic Service Level Cleaning
- Coordinate Measuring Machine Inspection (CMM)

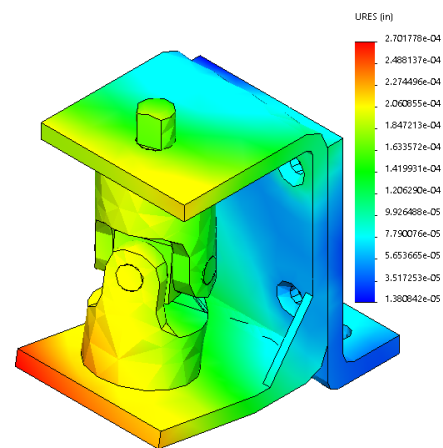
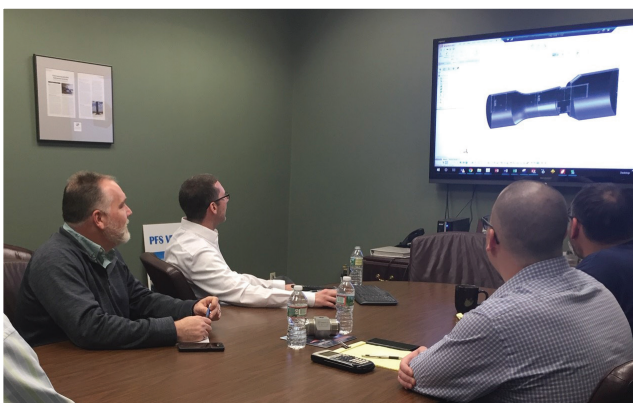
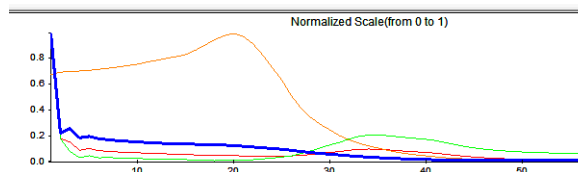
# Engineering

Primary Flow Signal has an in-house engineering support staff offers an extensive knowledge base providing guidance throughout your design, prototyping, testing, production

Various software programs, fully licensed and continually updated, are used in all aspects of analysis and design. FE Sizer, Flow Consultant, CEI Design Calcs and Solidworks 3D modeling software enable our team to provide accurate, efficient and precise solutions for many applications

PFS offers ASME S & U, PED, ISO 9001 certifications including CRN service for Canada. PFS is a contributor to various international standards committees, fully supporting our staff's memberships to these commissions.

Name	Current Value	Progress	Criterion	Averaged Value
DP	5.50122 lbf/in <sup>2</sup>	Achieved (IT = 100)	0.095089 lbf/in	5.50269 lbf/in <sup>2</sup>
HP	15.1973 lbf/in <sup>2</sup>	Achieved (IT = 105)	0.103406 lbf/in	15.19 lbf/in <sup>2</sup>
LP	9.69603 lbf/in <sup>2</sup>	Achieved (IT = 100)	0.0726591 lbf/in	9.68735 lbf/in <sup>2</sup>
Throat Velocity	29.6226 ft/s	Achieved (IT = 100)	0.211389 ft/s	29.6242 ft/s





# Reverse Engineering

Reverse engineering program at Primary Flow Signal utilizes Expert Engineers coupled with a Skilled Manufacturing team and dedicated Quality Control Professionals to reproduce almost any mechanical assembly or component parts accurately and efficiently.

Parts may include but certainly not limited to:

- Old worn-out machine parts that can no longer be sourced from manufacturer.
- Machine consumables that are often highly over priced by machine manufacturer.
- Components being sourced from overseas suppliers, eliminating delays in supply chain.
- Heavy equipment parts that can usually be made faster than ordering them from an overseas heavy equipment manufacturer, eliminating costly construction site downtime.

Our systematic approach and implementation of sound engineering principles results in a part that will always exceed OEM specifications and with a full in-house dedicated team you can be confident that Primary Flow Signal can handle your next reverse engineering requirements large or small.



The two parts shown above are consumables for a plasma cutting system

## Part on left

- Torch end cap.
- Cost from Manufacturer \$64.00 ea with an annual usage of 60-80 pcs yearly.
- Primary Flow produced a qty of 200 at a cost of \$8.75 ea

## Part on right

- Internal torch consumable.
- Cost from Manufacturer \$116.49 ea with an annual usage of 40-60 pcs yearly.
- Primary Flow produced a qty of 150 at a cost of \$17.50 ea

# PFS Capabilities

## CNC Turning

Our broad range of horizontal and vertical lathes offer a variety of bore sizes and lengths. These machines are rigorously maintained for long-term accuracy and superior surface finishes.

### CNC Turning Centers

- Live Tooling and Sub Spindles
- Up to 40.6" swing x 62.9" length
- 11 Turning Centers

## CNC Milling and CNC-HBM

Our machining centers are designed for heavy duty cutting, high accuracy and efficient throughput and processing.

### CNC Machine Centers

- Multiple equipped with 4th axis capabilities
- Milling capability up to X-60", Y-40", Z-30"
- (1) 4" CNC-HBM
- 72" Rotary Table 80" x 60" x 60"

## Manual VTLs and HBMs

Our skilled machinists have decades of experience using equipment that is proven and reliable. Our manual lathes offer a variety of bore sizes and lengths.

### Manual Horizontal Boring

- Manual Horizontal Boring
- Multiple 6" Boring Mills equipped with 120" and 96" rotary tables
- Up to 86" facing
- Up to 48" dia. horizontal boring 60" deep

### Manual Vertical Turning

- (4) VTLs up to 94" swing x 72" height equipped with 120" and 96" rotary tables

## 5 AXIS Wire EDM

Our 3 state-of-the-art Makino DUO 43s 5-Axis wire EDM's deliver outstanding Accuracy and Superior Repeatability from the first part to the last part, combined with a dedicated and experienced team of highly qualified craftsmanship, we deliver compliant parts on time.

### Wire EDM

- Multiple State-of-the-art Makino DUO 43s
- 5-Axis capabilities and angles up to 45
- Z-18 x Y-12.5, U/V-2.5"

## Surface and Blanchard Grinding

Our utilization of in-house surface grinding and blanchard grinding with capabilities up to 36-inch diameter allows us to control operations that would normally be outsourced, resulting in full control of job flow from start to finish.

### Precision Grinding

- 36" Dia
- All metals including Stainless Steel

# How PFS Can Help You

On staff we have highly expert and experienced designers and engineers qualified in disciplines including but not limited to manufacturing, welding, machine design, and digital instrumentation design and development.

Our manufacturing team includes but is not limited to fabricators, welders, machinists, mechanical assemblers, finishing experts, packing and crating specialists, purchasing and logistics experts, and Quality Assurance professionals.

We have the resources and capacity to perform on small or large engagements.

Our client service team, look forward to developing lasting business relationships. These are earned by providing products and services of the highest quality, maximum value, on time and on budget, by personnel with deep experience, expertise, and dedication to customer needs and satisfaction.

Our services and products will always be customized to client needs! PFS-CM can quote and manufacture to client spec/drawings, or our team can handle design development, prototyping, through to final approval and production manufacturing to scale.





# Our Services

## Design/Manufacturing Engineering

- HYDRAULIC/FLUID DYNAMICS
- WELDING/METALS
- INSTRUMENTATION
- REVERSE ENGINEERING

## Machining

- CNC MILLING/TURNING
- HONING
- EDM 5 AXIS
- Manual VTL w/84" chuck and tracer
- Manual Horizontal mill with 10 foot rotary table

## Welding

- AUTOMATED
- MANUAL
- CLADDING
- POST WELD HEAT TREATING
- SEE EXPANDED LIST ON PGS 8-9

## Fabrication

- STRUCTURAL
- PRESSURE RETAINING
- ROLLING/BENDING
- HEAVY LIFT TO 30T

## Assembly (Mechanical)

## Millright – Machine/Equipment Parts

## Finishing

- SAND BLAST
- PRIMER/PAINT
- PLATING
- HEAT TREATING
- POLISHING

## Crating

- DOMESTIC AND INTERNATIONAL STANDARDS
- WOOD, COMPOSITE, METAL

## Quality/Inspection/Testing

- RADIOGRAPHY
- HYDROSTATIC TESTING
- WATER
- GAS
- HELIUM TESTING
- LAB CALIBRATION FOR FLOWMETER ACCURACY
- WATER
- GAS
- OXYGEN CLEANING
- PMI (positive material identification)
- LPI ( liquid penetrant inspection)
- ISO 9001
- ASME S & U
- PED
- EUROPEAN STANDARD
- CRN

# Our Services







“PRIMARY FLOW SIGNAL HAS A  
COMPREHENSIVE FACILITIES LIST THAT  
ELEVATES OUR CAPABILITIES ABOVE  
THE COMPETITION.”





*Contract Manufacturing Group*

## **NEED A QUOTE?**

Want to schedule a facility tour? Contact us!

### **Location**

Primary Flow Signal, Inc.  
800 Wellington Avenue  
Cranston RI 02910 USA

### **Contact Us**

[www.primaryflowsignal.com](http://www.primaryflowsignal.com)  
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