OUR HISTORY, OUR PRESENT, OUR FUTURE
OUR FIRM

OWNER-SHIP: 100% Italian

FIXED INVESTMENTS: over 2,000,000 Euro

TECHNOLOGIC RESEARCHES INVESTMENTS: over 10% of annual turn-over

FACTORY: - total area: 5,550 m²
- workshop: 2,000 m²
- offices: 300 m²
Unique european maker who has developed the Roots principle for the volumetric measurement of liquids.

Since our commercial debut “PETROL” PD flowmeters has contributed to the automation and modernization of the industrial processes for its reliability and its exceptional operating characteristics coupled with a very high manufacturing technique.

"PETROL" PD flowmeters are today available for the measurement of all the liquids industrially utilized in a range of models so wide, either in the standard version either in the jacketed version, to meet, even contemporary, severe operating conditions.

During the years "PETROL" has accumulated a very strong experience in the production of PD flowmeters suitable for the heaviest operating conditions in the more different industrial fields.

Such a technical background and the investments yearly destined to the research have till now satisfied each particular need of our customers.
WHO WE ARE

PD METERS PRODUCTION SINCE 1970
Privately owned, shareholders all active within the organisation
Experienced & competent local staff
Success built on partnership, trust and care
OUR STRENGTHS

- RELIABLE PRODUCTS
- EXPERIENCED & QUALIFIED STAFF
- UPDATED PRODUCTION FACILITIES
- ITC SYSTEM
- FLEXIBILITY TO CUSTOMER NEEDS
- AFTER SALE SERVICE
- ISO 9001: Ed. 2000 CERTIFICATION
- ISO 14001:2004 CERTIFICATION
PD FLOWMETERS FOR LIQUIDS

ALWAYS RELIABLE
EXCELLENT PERFORMANCES
NO METAL TO METAL CONTACTS
FEW MOVING PARTS IN THE MEASURING UNIT
LOW COST OF OWNERSHIP
VERY REDUCED MAINTENANCE
LONG LIFE
“PETROL” PD METERS OPERATING PRINCIPLE

REGISTER
MAGNETIC TRANSMISSION
MEASURING UNIT
REDUCTION GEAR ASS’Y
ROTORS
OUTER HOUSING

OPERATING SCHEME
FLOW DIRECTION
BASE VOLUME
BASE VOLUME
The volume flown through the PD flow meter is measured by two conjugates rotors coupled with two synchronized gears installed on the rotors' shaft.

The rotors rotation is caused by the difference between the input and the output pressure first on the right rotor, that is forced to rotate clockwise while the left rotor, which is in condition of balanced pressure, is driven by the timing gears to rotate counter clockwise.

As shown in the operating scheme, in this position is defined the "basic volume" of the instrument that is the volume between the rotor and the measuring chamber.

After a 90° rotation, the rotors are in a reciprocal position when compared to the initial one and therefore it is the rotor on the left which is pushed by the liquid to rotate counter clock-wise and that drives, through the timing gears, the rotor on the right.

During these operating cycles, after a 360° degrees rotation, four "base volumes" will be generated and will determine the "cyclic volume" of the instrument.

By transmitting the number of rotors' rotations to the register the volume flown through the PD flow meters is displayed.
PD METERS MAIN CHARACTERISTICS

DOUBLE CASE CONSTRUCTION

SINGLE CASE CONSTRUCTION

“FLOATING” TYPE ROTORS

DIFFERENT CONSTRUCTION MATERIALS

CARBON BEARINGS TO SUPPORT THE ROTORS SHAFTS

MAGNETIC TRANSMISSION

INTRINSECAL CAPABILITY TO MEASURE VERY VISCIOUS LIQUIDS

CEE HOMOLOGATION
In the double case construction the measuring unit (inner housing plus rotors and timing gears) is a sub-ass’y operating, testable and replaceable in any moment.

Advantages of the double case construction:

- possibility of removing the measuring unit during the “start-up”
- possibility of making the maintenance of the measuring unit, without removing the entire PD meter from the line
- possibility of manufacturing the measuring unit in materials different from those used for the outer housing
- accuracy not influenced by the operating pressure
- availability of different flanges dimensions for the same measuring unit, i.e. for the same max. nominal flow rate
- same measuring unit for all the operating pressures
DO DOUBLE CASE CONSTRUCTION

- OUTER BODY
- MAGNETIC TRANSMISSION
- OUTER REAR COVER
- MEASURING UNIT
- COUNTER SUPPORT
- OUTER FRONT COVER
- COUNTER

- TIMING GEARS
  - ROTORS
  - INNER HOUSING
  - ROTOR SHAFTS
  - CARBON BEARINGS

Petrol Instruments COMPANY PRESENTATION
In the single case construction the outer body is also the body of the measuring chamber.

Advantages of the single case construction:

- compact design
- pocketless version
- possibility of using different construction materials
- availability of different flanges dimensions for the same max nominal flow rate
- possibility of different flange to flange dimension for the same meter model
Use of all the construction materials industrially available from cast iron // cast steel to the various grades of stainless steel up to AISI 316 L in relation to the corrosiveness of the liquids metered.

Possibility of using different construction materials between outer housing and measuring unit (inner housing plus rotors and timing gears). Typical example: PD meters with carbon steel outer housing and stainless steel measuring unit.

For the measurement of diluted hydrochloric acid and diluted sulphuric acid a version completely manufactured in plastic (moplen) with shafts and screws in hastelloy B is available.
“FLOATING” TYPE ROTORS

- The rotors never touch each other nor they touch the other parts composing the "base volume" but are synchronized by a couple of timing gears mounted outside the inner casing.

- The rotors are not subject to wear which means that the PD meter does not need any re-calibration with the time due to the wear of the parts composing the "base volume".
The adoption on a standard basis of the magnetic transmission to drive the counter (which means a static seal between the wetted parts and the dry parts of the PD meter) and of carbon bearings instead of ball bearings to support the rotor shafts, as well as the double case construction and the “floating” type rotors, reduce the maintenance of the PD meters to a real minimum.
Due to the operating principle and to the rotors manufacturing procedures there are no problems for the measure of liquid from low viscosity to very viscous liquids (over 50,000 mPa.s).

In facts the rotors profile is worked out with constant profile cutters.

It is therefore very easy to produce PD meters with different "clearances" and consequently suitable for the measurement of any liquids.
HOMOLOGATIONS

- Approval n. 347828 dated 28/07/70, issued by Italian Weight and Measure Department, for legal and custody transfer applications in Italy.
- Approval Certificate n. 341976 dated 17/05/1991, issued by Italian Weight and Measure Department, for the legal application in Italy of the "Tank Provers Petrol Instruments".
- Approval n. 10596 dated 10/09/2004, issued by Italian Weight and Measure Department, for the legal application in Italy of the "Master Meters Petrol Instruments".
- Approval certificate n. 23679 dated 25/04/2006 issued by the Russian Authority, for legal use in Russia.
- Compliance with OIML R117.
- Approval Certificate n. 1115 del 03/08/2006 issued by Pascal, attesting the conformity of our products to the PED directive n. 97/23/EC.
- CEE approval certificate for model of measuring instruments n. 06.03.01.011 dated 18/10/06, issued by Italian Weight and Measure Department, for the legal use in European Common Market (CEE) countries.
- EC Declaration of Conformity (ATEX, PED).
- MIGAS Approval dated 22/02/2007 for legal use in Indonesia.
- DPR Approval dated 09/09/2008 for legal use in Nigeria.
- Pattern Approval Certificate (PAC) for legal use in China.
PETROL

Petrol Instruments S.r.l.

**Petrol Instruments**

**COMPANY PRESENTATION**

- 1" through 16" sizes, permitting the accurate measurement of liquid flow-streams from few hundreds of liters per hour to many hundreds of cubic metres per hour.

- Max. operating pressure up to 200 BAR.

- Max. operating temperatures up to 300 degree C.

- Max. flowrate up to 2000 m3/h.
- **Unsurpassed Stability** □ Sustained Long Term Accuracy
- **Low Pressure Drop** □ Reduces Operating Cost
- **Tolerance to Entrained Solids and Air Pocket** □ Reduces Maintenance Cost
- **Highly Accurate** □ Provides Measurement Confidence
- **High Performance on Viscosity Products (Crude Oil Custody Transfer)**
- **Easy and Low Maintenance** □ Lowers Cost Of Ownership
- **Local Support** □ Reduces Costly Downtime
MAIN APPLICATION FIELDS

PETROLEUM INDUSTRY
asphalt, bitumen, crude-oil, gasoline, heavy oils, JP4, light-oil, LPG, lubricants, kerosene, naphta, paraffines.

PETROCHEMICAL INDUSTRY
acetaldehyde, acetone, acrylonitrile (AN), benzene, butanol, ethanol, ethylene, LPG, maleic anhydride, phthalic anhydride, propylene, styrene, toluene, xylene.

POWER PLANTS INDUSTRY
bunker C, crude-oil, demi water, heavy oil, naphta.

CHEMICAL INDUSTRY
acetic acid, alcohol, ammonia, CO2, liquid caustic soda, demi water, formaldehyde, methanol methilen-cloride, napthalene, nitric acid, paintings, saline solutions, solvents, sulphuric acid, VCM, vinyl acethate monomer.

PHARMACEUTICAL INDUSTRY
Acid solutions, caustic soda, demi water, HCl diluted, H2SO4 diluted and concentrated, phosphoric acid.

SHIP BUILDING AND STEEL MAKING INDUSTRY
bunker C, diathermic-oil, heavy-oil, light-oil, tar, turbine-oil, water
AN APPROPRIATE ORGANIZATIONAL STRUCTURE FACILITATES INFORMATION FLOW AND COORDINATES TASKS IN ORDER TO REALIZE CORPORATE VISION.

USING THE ITC SYSTEM WE ENABLE OUR STAFF TO SHARE IN REAL TIME ALL THE COMPANY INFORMATION, WITH COST REDUCTION, MANUFACTURING FLEXIBILITY AND CUSTOMER RESPONSIVENESS.
OUR ITC ARCHITECTURE

CHIEF EXECUTIVE & SALES MANAGER

MARKETING MANAGER

PROPOSAL MANAGER

ADMINISTRATION MANAGER

HUB

SERVER A
mirrored disc

SERVER B
(Back Up) mirrored disc

ITC MANAGER

PRODUCTION & TECHNICAL MANAGER

PURCHASING MANAGER

STORE MANAGER

Datawarehouse
ISO9000 DB
Products Data Sheets
Job Orders DB
Communication Facilities
(Fax, e-mail, intranet)

CAD
Application Management
LAN supervisory

Production management
Design management

Purch. monitoring
Supply Management

Invoice Management

Job management
bid management

Invoice Management

Job management
bid management

OUR ITC ARCHITECTURE

Petrol Instruments COMPANY PRESENTATION
A WORLDWIDE COMPANY

AGENTS
ABU DHABI
BRAZIL
CHINA
DUBAI
GREECE
INDIA
INDONESIA
IRAN
IRAQ
ITALY
KUWAIT
MOROCCO
MEXICO
NIGERIA
PAKISTAN
SAUDI ARABIA
SINGAPORE
SOUTH AFRICA
SWEDEN
SYRIA
TAIWAN
THAILAND
U.K.
U.A.E.
VIETNAM
YEMEN

CUSTOMERS
ALGERIA
ANGOLA
ARGENTINA
AUSTRIA
AZERBAIJAN
BAHRAIN
BANGLADESH
BRAZIL
BULGARIA
CAMBODIA
CZ. REPUBLIC
CHINA
CHILE
COLOMBIA
Congo
CROAZIA
CUBA
DENMARK
EGYPT
ETHIOPIA
GERMANY
GHANA
GREECE
GUAM
HAI
HONG
INDIA
INDONESIA
IRAN
IRAQ
IRELAND
ITALY
JAMAICA
JAPAN
JORDAN
KAZAKHSTAN
KOREA
KUWAIT
LEBANON
LUXEMBURG
LIBYA
MALAYSIA
MEXICO
MOROCCO
NEPAL
NIGERIA
PAKISTAN
SAUDI ARABIA
SINGAPORE
SOUTH AFRICA
SWEDEN
SYRIA
TAIWAN
THAILAND
U.K.
U.A.E.
U.S.A.
Ukraine
HUNGARY
UKRAINE
URUGUAY
VENEZUELA
VIETNAM
YEMEN
ZAMBIA

WE ARE HERE
our mission is to fill this page ...
Client don’t look only for a “product” but, mainly, for a ”solution”

They don’t ask only for Product Quality but also for what is around a product.

WE GIVE OUR CLIENTS:

• Promptness in answering
• Respect of delivery date
• Technical Support
• After-sale service
PARTNERSHIP

We work to improve:

• Product Quality
• Client Satisfaction

We look at a different relationship with our Clients:
PARTNERSHIP

A strict cooperation between Client and Supplier is necessary to allow the Supplier to be always aware of the new market requirements and to be ready to meet those requirements.

A Partnership with Client help to reduce the time to market of new products and to promote a continuous and global improvements of the production process with benefits on Quality, Total Cost and Delivery Date.
PARTNERSHIP

CLIENT

Must answer fast, in time and with flexibility to the MARKET needs

Must compete in Time, Cost and Quality

PARTNERSHIP

Relation of strict cooperation and optimization of resource management and of common experience

SUPPLIER

Must answer fast, in time and with flexibility to the CLIENT needs

Must compete in Time, Cost and Quality
PARTNERSHIP

PREVENTIVE ANALYSIS

- Problem identification in advance
- Risks Reduction
- Easier and more reliable Production Plan

- Answering Time Reduction
- Research and Growth
- Product & Service tailored to Client
- Production Costs Reduction
- Investments Optimization
- Delivery Time Reduction

PRODUCT & SERVICE IMPROVEMENT
MORE COMPETITIVENESS IN THE MARKET
OUR FUTURE

CHANGE IS THE ONLY CONSTANT
New channels, competitors and business models are emerging

COMPANIES NEED STRATEGIES THAT WILL HELP THEM SIMULTANEOUSLY ACHIEVE SUCCESS

Results

Working Process

MONITORING

THIS OBJECTIVE REQUIRES A LONG TERM COMMITMENT

PROFIT IMPROVEMENTS
OUR GOALS

FOR BUSINESS TO BE SUCCESSFUL, GROWTH IS IMPERATIVE, NOT AN OPTION

Finding creative ways to increase the size of the pie rather than new ways of cut the old one is one of our goals.

Growth is necessary to strengthen our core business and our ability to anticipate and quickly react to major industries changes.
MARKET DEVELOPMENT

ADEQUATE TIME OF MARKET ENTRY
WELL DEFINED STRATEGY
ADEQUATE EMPLOYMENT OF RESOURCES
ORGANIZATION STRUCTURES WHICH SUPPORTS THIS STRATEGIC GOAL
EFFICIENT PLANNING AND CONTROLLING PROCESSES
OUR MISSION

To meet clients requirements
To serve and facilitate the business of our clients
To be a leader in all the markets where we are active
To be our counterparts preferred partner by adding value wherever we participate
To succeed through the greater knowledge, understanding and trust of our counterpart
To work closely with clients to convert new ideas into strategies, whose implementation will have a substantial positive impact on performance
To expand our base of core markets in areas where we have strength and can add value
OUR MISSION

SOLUTIONS THAT MATTERS
STRATEGIES THAT WORK
RESULTS THAT LAST
OUR MAIN REFERENCES

AGIP PETROLI TANK LOADING BAY

Fiorenzuola d'Arda (PC) - ITALY
OUR MAIN REFERENCES

AGIP PETROLI TANK LOADING BAY

Napoli - ITALY
OUR MAIN REFERENCES

AGIP PETROLI TANK LOADING BAY

Napoli - ITALY
OUR MAIN REFERENCES

AGIP PETROLI VAPOUR RECOVERY UNIT

Pregnana (MI) - ITALY
OUR MAIN REFERENCES

AGIP PETROLI TANK LOADING BAY

Rho (MI) - ITALY
AGIP PETROLI VAPOUR RECOVERY UNIT

Rho (MI) - ITALY
OUR MAIN REFERENCES

AGIP PETROLI CUSTODY TRANSFER UNIT RECOVERY UNIT

Rho (MI) - ITALY
OUR MAIN REFERENCES

API LOADING BAY

Falconara (AN) - ITALY
OUR MAIN REFERENCES

16’’ METER

Muglad Marine Terminal - SUDAN
OUR MAIN REFERENCES

12” METER WITH STAINLESS STEEL MEASURING UNIT

Petrolbras Platform - BRASIL
OUR MAIN REFERENCES

16” METER

Bouri Platform - LYBIA
OUR MAIN REFERENCES

16” METER

Bouri Platform - LYBIA
OUR MAIN REFERENCES

PD METER SKID WITH PNEUMATIC PRESET COUNTER AND TWO STRAINERS
OUR MAIN REFERENCES

MOBILE MASTER METER WITH “F016” DIGITAL INDICATOR
(I.S. VERSION)
OUR MAIN REFERENCES

SECTIONED PD METER
OUR MAIN REFERENCES

DOUBLE CASE PD METERS
OUR MAIN REFERENCES

1” PD METER WITH PULSE TRANSMITTER
OUR MAIN REFERENCES

1" POLYPROPYLENE PD METER
OUR MAIN REFERENCES

1” PD METER WITH “BAT R/T” TRANSMITTER/DIGITAL INDICATOR (ADPE VERSION)
OUR MAIN REFERENCES

2" PD METER WITH "UST" TRANSMITTER/DIGITAL INDICATOR
(HART PROTOCOL – I.S. VERSION)
OUR MAIN REFERENCES

2” PD METER WITH SUNSHADE PROTECTION “UST” TRANSMITTER/DIGITAL INDICATOR (HART PROTOCOL – I.S. VERSION)
OUR MAIN REFERENCES

4” PD METER WITH PNEUMATIC PRESET AND CONTROL VALVE
OUR MAIN REFERENCES

6” PD METER WITH ELECTRONIC COUNTER
OUR MAIN REFERENCES

6” PD METER VERTICAL VERSION
8” PD METER WITH TEMPERATURE COMPENSATOR
OUR MAIN REFERENCES

10” PD METER WITH PULSE TRANSMITTER
OUR MAIN REFERENCES

12” PD METER WITH “UST” TRANSMITTER/DIGITAL INDICATOR
(HART PROTOCOL – I.S. VERSION)
OUR MAIN REFERENCES

16” PD METER WITH PULSE TRANSMITTER
OUR MAIN REFERENCES

SECTIONED SINGLE CASE PD METER
OUR MAIN REFERENCES

1” PD METER WITH MECHANICAL COUNTER
OUR MAIN REFERENCES

1” PD METER WITH I.S. FLOWRATE / TOTALIZER
OUR MAIN REFERENCES

2” PVC PD METER
OUR MAIN REFERENCES

3” SINGLE CASE PD METER IN STAINLESS STEEL – BLIND VERSION
(ADPE VERSION)