



**PETAL**<sup>®</sup>  
oil & gas equipment

Oil & Gas  
Equipment





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Petal S.A.

# Experience in designing and manufacturing oil equipment of over **25 years**

PETAL S.A. was founded in 1949 and has an experience of over 20 years in designing and in producing oil equipment, valves and industrial fittings.

Our company is one of the most important producers of oil machinery and equipment for different weather and environment geographical conditions, equipment and spare parts destined for drilling and for the extraction of oil and methane gas, industrial fittings, geological machines, spare parts for capital repairs of metal machines.



# PETAL S.A. Policy regarding the quality, the environment, the occupational health and safety



General Manager,  
Eng. Ion VASÎLCA

The Integrated Management System represents the strategic foundation on which the leadership of PETAL S.A. Company is based in determining the policy and the objectives regarding the quality, the environment and the occupational health and safety.

The maintaining and continual improvement of the implemented Integrated Management System, according to ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 requirements is our primary concern.

Our common objective is to prove the capacity of PETAL S.A. to continuously satisfy the customer's demands, to improve the performances of our products, in order to exceed the client's expectations.

The high-level management policy is mainly oriented toward:

- The continuous improving of performances regarding the: quality, environment, occupational health and safety;
- Preventing the accidentally pollution, the work accidents and the professional diseases, in all the developed activities;
- The effective employment of the raw materials, in order to save the natural resources;
- The compliance with the legally requirements and with all the applicable requirements on quality, environment and occupational health and safety;
- The insurance of an appropriate framework for establishing and analyzing the quality, environment and occupational health and safety objectives and to make possible for the employees to meet their work tasks.

As a traditional producer of oilfield equipment, PETAL S.A. Company is engaged on a competitive market, aiming to achieve the following objectives:

- The annual growth of the turnover;
- The increase of the oilfield equipment share within the total sold products;
- The increase of export sales volume;
- The gross profit growth;
- The improving of working conditions for employees (modernizing the workspaces, of the equipment and machineries);
- The continually decrease of pollution, by reducing the quantity of waste and emissions;
- Reducing the overall risk of accidents and professional diseases.

The processes of the Integrated Management System are planned and controlled by:

- By identifying, distributing and optimizing the resources;
- By designating, training and acknowledging the processes responsible persons, who establish, maintain and continually improve the measurable objectives and the performance indicators for each type of process;
- By a continually documentation, analyze, measurement, monitoring and improvement;
- By involving all the employees in improving the processes and in empowering each employee according to his performance

The leadership of PETAL S.A. is oriented to identify and develop the employee's skills by training, recruitment, acknowledge and continually evaluation.

- This statement is an integral part of the Integrated Management System Manual and was communicated with the



organization, is known at all compartments and is regularly reviewed.

- The achievement of the politics and of the stated quality objectives, of the Integrated Management System Manual requirements represents compulsory tasks for each PETAL S.A. employee.

In quality of General Manager, I engage to apply this policy and, in this respect I delegate the responsibility and the authority to the Technical and Quality Assurance Manager, as a representative of the General Manager for:

1. Implementing and maintaining the system described in the Integrated Management System Manual;
2. Verifying the application, the fulfillment and the improvement of the politics and objectives;
3. Directly reporting the results of these verifications.



Our commitment is to satisfy the requirements of our clients!

"We exist only by our satisfied customers!"

"We exist only to satisfy our customers!"



# Quality and Professionalism since 1949

1995

**From 1995**

Petal SA was listed at the Stock Market.



**From 1985**

we are among the most important producers of cementing and fracturing units and wellheads.

2012

At present, our company is one of the well known manufacturers of oilfield equipment for various geographical conditions and climate environment, equipment and spare parts designed for drilling and extraction of oil and natural gas, geological equipment, spare parts for repairs of metallurgical equipment, industrial valves and geological equipment.



1985

Since 1985 the company to be among the well known manufacturers of Cementing units and wellhead equipment.

1980

Starting with 1980 unit performs a fast ascension by modernizing and building new production facilities, equipped with modern technological lines, and by increasing the professional training of employees. During this period takes place the assimilation of the oilfield equipment.



2010

In 2010 the company has extended its API certified products and passed from the Quality Management System to the Integrated Management for Quality, Occupational Health and Safety according to the ISO 9001, ISO 14001 and OHSAS 18001 standards.

2004

In 2004 obtains certification for API 6A for valves and nozzles.

2001

Therefore in 2001, the company certified Quality Management System according to ISO 9001.

2000

In 2000, PETAL becomes a private company with Romanian capital and often focuses its attention to increase the quality of its products.



1970

The complexity of products has gradually increased so that in the '70 to be among the companies that produced metallurgical equipment.

1949

PETAL SA Company was founded in 1949 as a simple metallic manufacturing company.

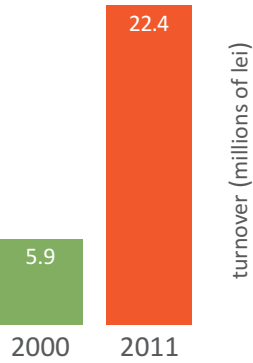


16.683

Valves sold  
2000 - 2011

# Long lasting principles for a solid future

**Petal SA** took the engagement to create reliable products for all its partners, placing the reliable development in the center of its business strategy.



**280%**

**280%**  
increased turnover  
from 2005  
(5.9 millions of lei)  
until 2011  
(22.4 millions of lei)

### Tradition

- We are a trustworthy partner, a powerful company with a presence of over 64 years.
- More than 25 years of experience in designing and producing oil machines.

### Performance

- We respect the engagements that we made to our partners
- We always search and implement the best solutions
- A powerful team obtains the best results.
- We continuously improve the performances of our products in order to exceed the expectations of our costumers.

### Our values

Tradition, performance and quality  
- these values represent our promises for building long lasting business relationships, based on trust, but also these values represent our engagement by respecting our promises in what all our activities are concerned.

### Our principles

- A continuous improvement of our performances
- A sustainable approach of the performances
- Social responsibility
- An efficient usage of the raw materials



### Quality

- The quality system of PETAL S.A. is certified by the prestigious company called LLOYD'S REGISTER QUALITY ASSURANCE.
- The company is certified by the AMERICAN PETROLEUM INSTITUTE according to the API standard requirements, Spec. Q1 Quality Assurance Programs and API Spec. 6A.
- The diversification of the variety of products according to the market's requirements and according to the requirements of the last quality standards.
- We permanently invest in innovation and technique in order to satisfy the highest quality standards.



# Integrated Management System

PETAL has permanently implemented, maintained and improved the Integrated Management System, in accordance with the requirements of the ISO 9001, ISO 14001 and OHSAS 18001. The Integrated Management System of PETAL is certified by the renown firm LLOYD'S REGISTER QUALITY ASSURANCE For the manufacture of: Casing and Tubing Heads, Cross-Over Connectors, Tubing Head Adapters, Top Connectors, Tees and Crosses, Adapter and Spacer

Spools, Casing and Tubing Hangers, Valves , Chokes, Flanged Connectors, Threaded Connectors, Other And Connectors, Ring joint Gasket, and Bull Plugs, SC PETAL holds the Official API Monogram, the company is being certified by the AMERICAN PETROLEUM INSTITUTE in accordance with the provisions of the API Spec.6A standards for the PSL1, PSL2, PSL 3 quality levels and API Spec.Q1 Quality Management System.



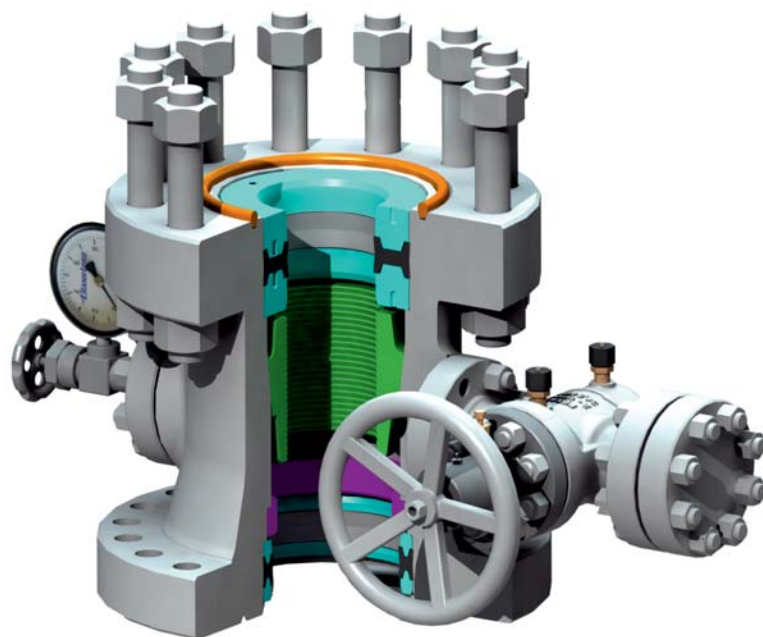
Since 2004  
**PETAL S.A.**  
was certified by the  
AMERICAN INSTITUTE  
according to the requirements  
of the API standards  
Spec. Q1 Quality Assurance  
Programs and API Spec. 6A, for  
the PSL 1, PSL 2, and PSL 3  
levels of quality.



The contracts with  
customers worldwide  
represents quality  
guarantee of our  
products



# Integrated Management System



PETAL S.A. quality system is certified by the prestigious LLOYD'S REGISTER QUALITY ASSURANCE.



The Integrated Management is the strategic fundament on which the administration of our company, S.C. PETAL S.A., is based, in determining the politics and the objectives concerning the quality, environment and occupational safety.

The continuous maintenance and improvement of the Integrated Management System, according with the ISO 9001; 2008, ISO 14001:2004 and OHSAS 18001:2007 is concerned, is our main preoccupation.



# 64 years of excellence in business

In 2011 there were some asset acquisitions for the arrangement of the interior and exterior production spaces and for the modernization of the production capacity by being respected the legal provisions.

The value of the export in 2011 was of 3.287.144 lei.

The profit from the exploitation was, at the end of 2011, of 1.245.121 lei.

The main products that were developed are the following: wellheads and metallurgic machines.

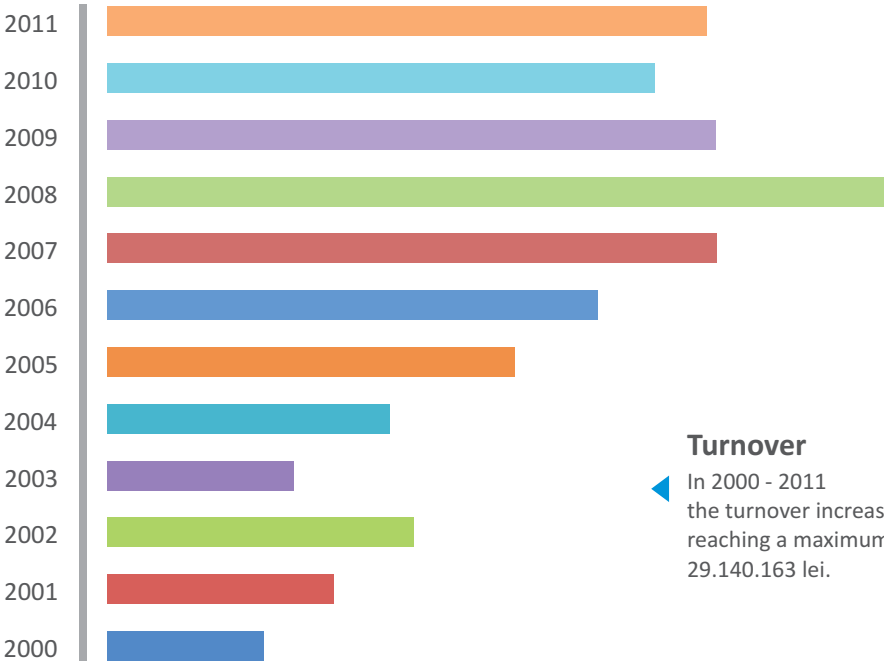
Petal SA registered in the last years an accelerated increase because of the

modernization of the production capacity and because of the increased professional capacity of the employers, fact that allowed the assimilation of a great variety of products.

The oil and natural gas production assures 60% from the entire economic activity at a world wide level. In the future it is anticipated an increase of approximately 5-10% a year, but because the deposits will be more difficult to exploit , the appearance of some new equipments will be necessary, equipments for harsh pressure conditions (2000 ÷ 15000 PSI), temperatures (-80°C ÷ +400°C), which are resistant at corrosive agents (CO, H<sub>2</sub>S, salty water, etc.)

17.255

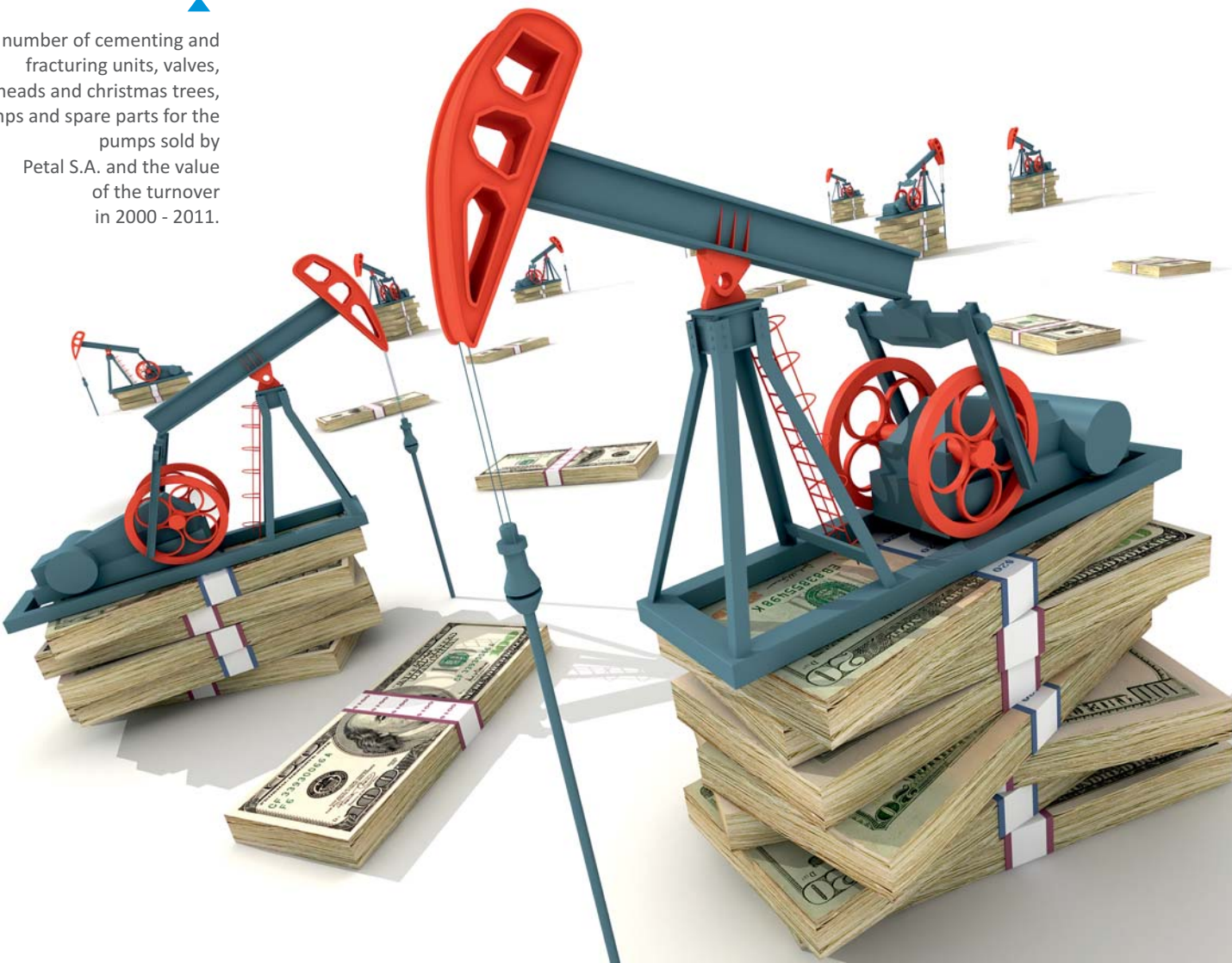
More than 17.255 sold products from 2000 until the present moment.



**Turnover**  
In 2000 - 2011 the turnover increased reaching a maximum of 29.140.163 lei.

| Period | ACF | Wellheads + Christmas Trees | Valves | Pumps | Spare parts for pumps | Turnover LEI |
|--------|-----|-----------------------------|--------|-------|-----------------------|--------------|
| 2011   | 23  | 50                          | 2494   | 15    | 7862                  | 22470527     |
| 2010   | 15  | 45                          | 1662   | 41    | 6570                  | 20534413     |
| 2009   | 19  | 25                          | 1448   | 18    | 11544                 | 22822847     |
| 2008   | 18  | 34                          | 1600   | 21    | 14402                 | 29140163     |
| 2007   | 2   | 20                          | 290    | 3     | 8922                  | 22824301     |
| 2006   | 4   | 13                          | 600    | 2     | 6458                  | 18375804     |
| 2005   | 2   | 11                          | 850    | 5     | 8525                  | 15246483     |
| 2004   | 3   | 10                          | 1802   | 2     | 6959                  | 10578832     |
| 2003   | 7   | 20                          | 1501   | 2     | 9413                  | 6993511      |
| 2002   | 10  | 14                          | 1457   | 80    | 7464                  | 11461059     |
| 2001   | 3   | 12                          | 1292   | 6     | 6545                  | 8485379      |
| 2000   | 3   | 12                          | 1687   | 2     | 9010                  | 5873914      |

The number of cementing and fracturing units, valves, wellheads and christmas trees, pumps and spare parts for the pumps sold by Petal S.A. and the value of the turnover in 2000 - 2011.



# People and environment, the most valuable resources

## The evaluation of the impact upon the environment

Starting with the year 2010 Petal S.A. was certified for the Environment Management System according to the ISO 14001:2004. Petal S.A. holds the environment license no. 52/15.05.2009, which is available ten years from the issue date.

For the development of the activity the unit uses substances from the category of the dangerous ones, which evidence is very strict. For the waste that results from the activity developed are drafted all the imposed documents according to HG856/2002 and HG1061/2008 standards. For waste elimination/valuing are closed contracts with authorized economic agents.

By implementing the Environmental Management System; the management from the highest level is engaged in:

- Preventing the accidental pollution
- Efficient usage of raw materials and of the materials used in order to save natural resources
- Submitting under the legal requirements and under all the applicable requirements of the environment

- The continuous reduction of pollution, by decreasing the quantity of waste and emissions.

## Social liability

Petal S.A. holds the OHSAS 18001:2007 certification for the Management System of Occupational Health and Safety. PETAL S.A. administration is oriented towards the identification and the development of the employee's aptitudes through training, recruiting, through awareness and continuous evaluation.

## Our objectives are:

- Continuous improvement of performances in the field of health and occupational safety,

- Preventing and eliminating work accidents and professional disease, in all the activities,
- Submitting under the legal requirements and under all the applicable requirements concerning health and occupational safety.
- Assuring an adequate environment for establishing and analyzing the objectives concerning health and occupational safety, as well as for the development of the activities of all the employees.

Petal SA looks for the continuous improvement of the work conditions of its employees through the modernization of the spaces, of the equipment and machines, The number of employees is today 277 and, in the near future, we are looking for increasing the number with more than 20%, therefore offering real chances, on a local plan, for filling a job position.



We continuously invest in protecting the environment



Up to the end of 2013 it is predicted an increase with almost 20% of the number of employees.



# Petal, important producer of oil machinery and equipment

The company is situated on a surface of 42800 square meters, from which 27000 square meters are occupied by production and administrative buildings, and it is in a continuous expansion. The number of employees is around 270, 210 these being directly productive.

**The company has increased autonomy:**

• **The department of Conception**

- Design, where the design and simulation is done with the help of the 3D software by specialized and experimented engineers.

• **The casting section**

- which assures 80% from the necessary of steel, cast iron and non-ferrous parts. The casted half finished product may have a weight of 1000 kg, with a degree of complexity of up to IV. The moulds used in the casthouse may have up to 6 cores.

At the end of the processes, the casted half finished product leaves the section having a very neat aspect thanks to the gauging installations.

• **The heat treatment sector**

- is equipped with vertical furnaces, treatment installations in a fluid bed, treatment installation with high frequency currents, salt baths. The main heat treatments developed within this sector are: annealing, burning, recovery, cementation, nitration, nitro-feroxation, developed on parts with a diameter of up to 1200 mm with lengths (heights) of up to 1500 mm.

• **Metallic coverage sector**

- where are done the hard chromium

operations, cadmium operations, phosphate operations.

• **Mechanic processing section**

- equipped both with universal machines as well as with specialized machines, machines with numeric operation, where the operations of turning, drilling, tothing, honing, rectification, perforation, mortising, shaping, relieving etc., are done within the section there can be done operations of manufacturing parts with diameters up to 2.200 mm and lengths up to 6.000 mm.

• **Metal confections section**

- equipped with MIG, MAG, TIW/WIG, MMA welding equipment, spot welding, oxigas, rolling machines, etc.

• **Assembling and testing sector**

- at the end of the assembly lines the

products are tested within specialized stands according to the types of products (automatic stands of testing pressure fittings of up to 2000 bar, automatic stand for testing, monitoring and for the registration of the parameters of the cementing and fracturing units with pressures up to 1050 bars, stands for verifying the operational functions, etc.).

• **Laboratories**

- within the chemical analysis laboratories the chemical composition of the ferrous and non-ferrous half finished products is quickly and accurately determined, through the means of a spectrometer of optic emissions with argon spark. The laboratories that perform indestructible examinations are equipped with devices for developing examinations with ultrasounds, with magnetic particles with penetrating liquids. Within the laboratory of mechanic try-outs are developed experiments for shock bending, haulage, measuring the deformities, calibration springs, etc. The lengths laboratory is equipped with AMCs of great variety and accuracy.

All the try-outs, tests, analysis from within the laboratories are executed only by the qualified personnel, especially trained for those particular operations.



+70%

**Increasing the production capacity**

with 70% by developing the project "The development of the production of oil machines, increasing the capacity of certification of the variety of products according with the A.P.I. standards, following the increase of the competitiveness of the products on the internal market and especially on the external market" with a value of 13.65 millions of lei.



Main suppliers:

Arcelor Mittal - Galati  
ROTEC Forge - Buzau  
NEPTUN Forge - Campina  
ORION Cast House - Campina  
Confind - Campina  
MECHEL - Targoviste  
Miras International-Bucharest



266

266 of wellheads and christmas trees sold in the last 11 years

# Cementing and fracturing units

The cementing units are mobile units designed to perform cementing, fracturing, pressure balancing, extinguishing and acidizing operations at the wells. The cementing units are mounted on TATRA, ROMAN or KRAZ chassis trucks.

The cementing units are equipped with a high pressure triplex or duplex plunger pump that can develop the required pressure under discontinuous operating conditions.

The power required to drive the triplex pump is supplied by the CATERPILLAR power unit, equipped with all air suction, control, cooling, discharging, lubrication systems.

The triplex pump is driven by CATERPILLAR transmission. The gearbox is driven by a motor with cardan shaft driving the plunger pump by toothed coupling and the water pump by elastic coupling. The cementing units are equipped with a measuring tank, divided into two equal compartments, protected against the corrosion.

For cementing operations, the cementing units are equipped with jet mixer with 3 nozzles supplied with water by a water pump. Water supply to the mixer is so conceived to provide parallel operation of one, two or all three nozzles of the mixer, as required, providing 100 to blend/hour.

The controls of the Unit are centralized and may be actuated from the platform

located around the control panel. On the control panel are mounted instruments for checking the operation of the pluger pump and water pump, as well as instruments required to check the operation of the driving motor. For checking the discharge pressure, the cementing units are equipped with pressure gauges with environment insulator and vibration dampener, mounted on the discharge collector of the pump.

For protection against overpressure, the discharge manifold is provided with a shearing pin safety valve and the water pump manifold is provided with a spring safety valve.

For night operation, the Units are equipped with three 24 V lighting fixtures which can be aimed towards the place where visual control is required.



**AC 350 Cementing unit**  
Driving from truck chassis engine  
Duplex pistons Pump – equipment 4 in; 4 ½ in; 5 in

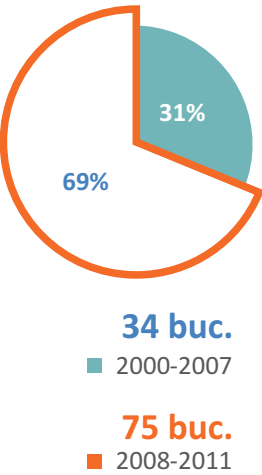
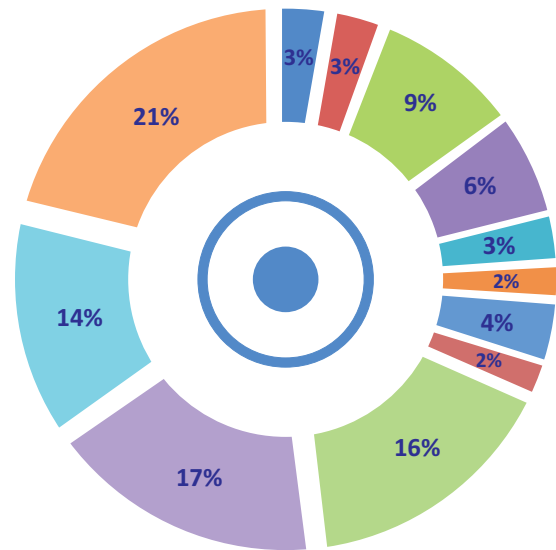
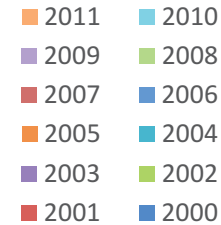
**AC 400 Cementing unit**  
1. Caterpillar Engine and Transmission  
Triplex Plunger Pump equipment D100; 115 mm

**AC 500 Cementing unit**  
1. Caterpillar Engine and Transmission  
Triplex Plunger Pump equipment D90; D100; D115; D125 mm

**ACF 700 Cementing and fracturing unit**  
1. Caterpillar Engine and Transmission  
2. Diesel Detriot DDC serie 60 engine/ CV12-352 gearbox  
Triplex Plunger Pump equipment D100; D115; D125 mm

**ACF 1050 Cementing and fracturing unit**  
1. Caterpillar Engine and Transmission  
Triplex Plunger Pump equipment D85; D100; D115; D125 mm

**109 units ACF**  
In 2011 there were sold 21% from the total number of Cementing and fracturing units that were sold in the last 11 years.



Cementing and fracturing units sold in 2000 - 2011

# Wellheads

The Wellheads are used to suspend the casings and to seal the annular space between them, from 4 ½ ÷ 20 inches and 2000 ÷ 10000 PSI W.P. in any combination.

Wellheads are manufactured in Standars Trim, H<sub>2</sub>S-NACE and H<sub>2</sub>S + CO<sub>2</sub>-NACE.

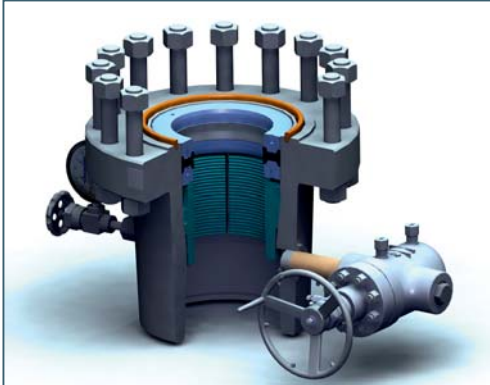


### Constructive characteristics of the main components:

Available to meet all appropriate API 6A requirements.

The casing heads stack comprises the following main elements:

- bottom flange (casing head housings), available in simple design or in design with a landing base
- double flanges (casing head spools; tubinghead)
- slips (casing hanger)
- primary and secondary sealings
- assembling elements
- intermediate flanges (pack-off flanges)

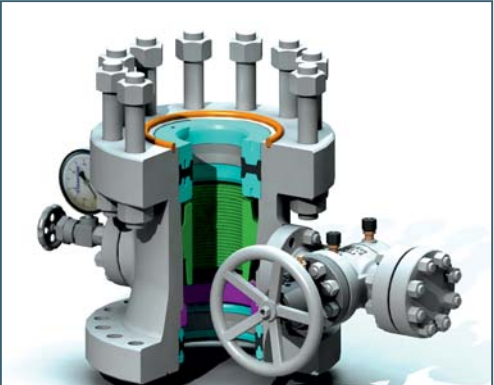


### Casing head housing

The casing head housings are used to suspend and to seal the casings. The flanges and the passing inside diameters are designed according to API spec. 6A.

The casing head housing is available with:

- female API 8RD threads for casings
- slip-on welded connection



### Casing head spools

The casing spools used to suspend and to seal the casings. The flanges and the passing inside diameters are designed according to API spec. 6A.

On request, the side outlets of casing spools are provided with TBG or LP threads, or with threaded flanges.



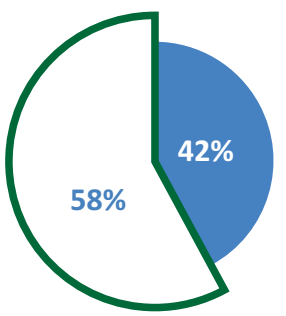
### Pack-off flanges

Pack-off flanges are usually used as a cross-over connection to adapt flanges of different pressure ratings or sizes and provide an extra safety seal of the casing.



### Tubing heads

The tubing heads are used to suspend and to seal the tubings with 2 ¾ in (60,3 mm), 3 ½ in (88,9 mm), 2 ⅞ in (73 mm) and 4 ½ in (114,3 mm) diameters.



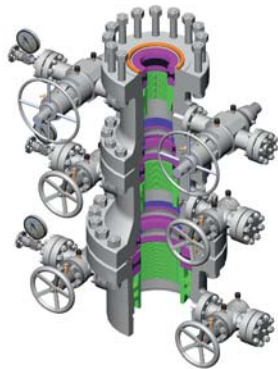
112 pcs.

■ 2000-2007

154 pcs.

■ 2008-2011

Sales  
Wellheads and  
Christmas Trees



### Execution criteria of wellheads

- Quality level  
PSL1, PSL2, PSL3
- Material class  
AA, BB, CC, DD, EE, FF
- Temperature class  
L, N, P, S, T, U

# Christmas Trees

Christmas Trees for flowing, gas-lift or injection, ranging from 140 bar (2,000 PSI ) to 700 bar (10,000 PSI) API working pressure with flange sizes in accordance with API Spec. 6A are available.

Christmas Trees are manufactured in Standard Trim, H<sub>2</sub>S-NACE, H<sub>2</sub>S + CO<sub>2</sub>-NACE.

**Constructive and technical characteristics:**

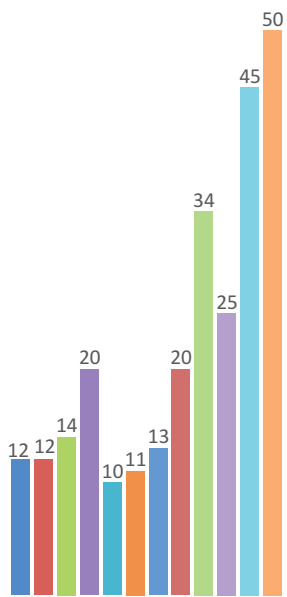
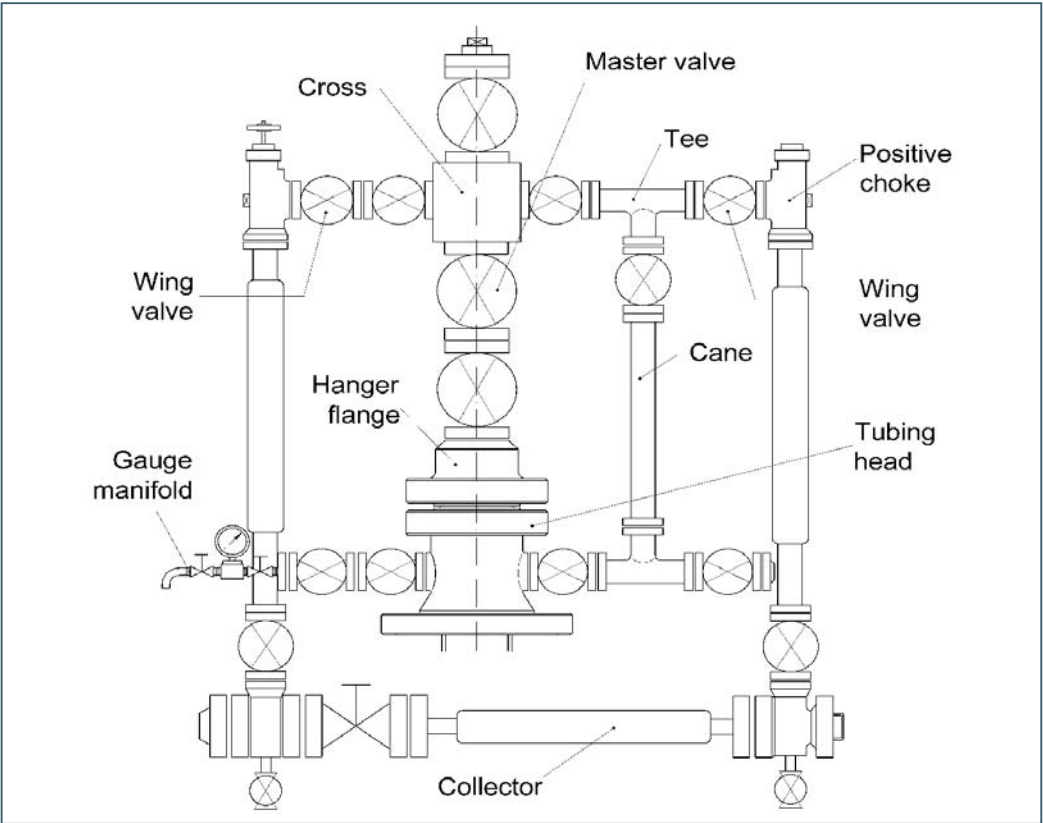
Christmas Trees have one or two wings provided with parallel gate valves.

End-to-end measurements match standard API gate valve lengths.

Christmas Trees are provided with one or two master valves on vertical column and one or two wing valves on each wing and with positive or adjustable chokes, manufactured from hard, abrasion and corrosion-proof materials.

**Execution conditions**

Processing system level – PSL1, PSL2, PSL3  
Materials class – AA, BB, CC, DD, EE, FF  
Temperature class – L, N, P, S, T, U



■ 2000 ■ 2001 ■ 2002  
■ 2003 ■ 2004 ■ 2005  
■ 2006 ■ 2007 ■ 2008  
■ 2009 ■ 2010 ■ 2011

The evolution of the number of wellheads and Christmas trees sold in the last 11 years.



## Running and retrieving tools for Wellheads and Christmas trees

Running and retrieving tools for Wellheads and Christmas trees is a set of tools, which are supplied on request along with the wellheads and Christmas trees.

They are used at the assembling - disassembling of certain components of products, such as: back pressure valves, test plugs, wear bushings, valves, sealing packages, etc.



# Valves and Chokes

PETAL Company produces and sells valves and chokes into a wide dimensional-type-assortment range with pressure values up to 15000 PSI (1050 bar for neutral working conditions and low corrosive action (oil and other petroleum products, drilling fluids, water, gases) intended for wellhead equipments, cementing and fracturing units, various technological equipment.



Execution conditions  
for API 6A valves

Processing system level  
- PSL1, PSL2, PSL3

Materials class  
- AA, BB, CC, DD, EE, FF

Temperature class  
- L, N, P, S, T, U



## Expanding parallel gate valves with nonrising stem

This type of valves is used in the oilfield industry for drilling and production operations for nominal pressures of 140, 210, 350 bar (2000, 3000, 5000 PSI) and nominal dimensions from 2 1/16 until 7 1/16. The products are designed to perform according to the requirements of PR1 Performance Requirement Level and, on request, PSL1, PSL2 and PSL3 Product Specification Levels.  
**Working medium:** water, oil products, gases, steam.



## Expanding parallel gate valves with rising stem

This type of valves is used in the oilfield industry for drilling and production operations for nominal pressures of 700 bar (10 000 PSI) and nominal dimensions from 2 1/16 until 5 1/16.

**Working medium:** water, oil products, gases with a light corrosive action.



## FC model gate valves (Slab gate)

This type of valves is used in the oilfield industry for drilling and production operations for nominal pressures of 210, 350, 700 and 1050 bar (3000, 5000, 10000 and 15000 PSI) and nominal dimensions from 2 1/16 until 7 1/16.

**Working medium:** water, oil products, gases, steam or other fluids with low corrosion.



## Adjustable and positive flanged chokes

The Adjustable and Positive Chokes are designed and manufactured in accordance with API 6A, for pressures up to 10,000 PSI (700 bar) and nominal dimensions from 2 1/16 until 4 1/16.

These chokes are available in a large sizes range, and with various trims depending upon customer requirements.



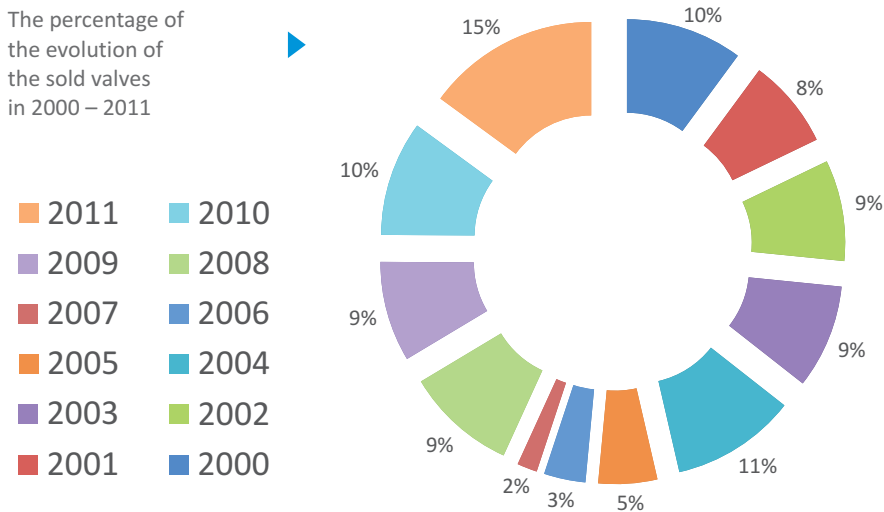
## Check valves

Exploitation, transport and distribution of industrial water and oil products.

### Technical characteristics:

- max. working temperature: 82°C
- passing direction: one-way
- mounting position: according with the indicated sense
- body-piston sealing: metal-to-metal
- body-cover sealing: metal-to-metal

The percentage of the evolution of the sold valves in 2000 – 2011



# Valves and Chokes



## RSDF type straight gate valves

This type of valves is used in the oilfield industry for drilling and production operations for nominal pressures of 140, 210, 350 bar (2000, 3000, 5000 PSI) and temperatures up to 60°C.

**Working medium:** water, drilling mud.



## RSDM type straight gate valves

This type of valves is used in the oilfield industry for drilling and production operations for nominal pressures of 350 bar (5000 PSI) and temperatures up to 60°C.

**Working medium:** water, drilling mud.



## Flexible wedge gate valves, rising stem

This valves are used as industrial fittings within low pressure installations up to 25 bar.

**Working medium:** water, steam, gases, petroleum products and other similar fluids, with low corrosion, exclusive hydrogen, mixtures of hydrogen, as well as aggressive mediums with sulphur or sulphuretted hydrogen.

**Working temperature:** -10 ÷ 225°C



## Flexible wedge gate valves, nonrising stem

This valves are used as industrial fittings within pressure installations, between 25 - 64 bar.

**Working medium:** water, steam, gases, petroleum products and other similar fluids, with low corrosion, exclusive hydrogen, mixtures of hydrogen, as well as aggressive mediums with sulphur or sulphuretted hydrogen.

**Working temperature:** -10 ÷ 225°C



## Steel wedge gate valves with nonrising stem

The wedge gate valves are used for a complete or partial shutting-off of a fluid flow as well as for resuming the initial flow of the same fluid, for nominal pressures of 140, 210, 350 bar (2000, 3000, 5000 PSI) and nominal dimensions from 2 1/6 until 4 1/6.

**Working medium:** water, gases, petroleum products and other similar fluids with a light corrosive action.

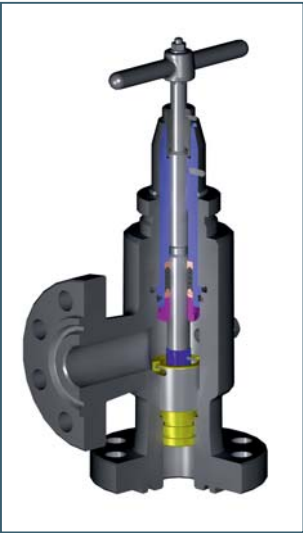


## Straight globe valves

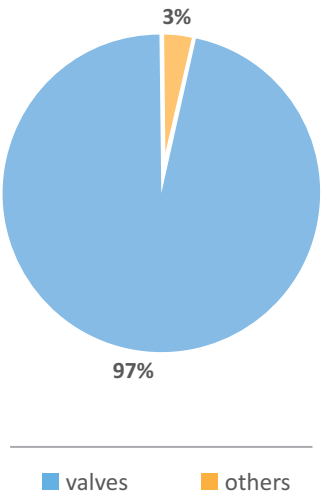
This valves are used as industrial fittings within low pressure installations.

**Working medium:** water, steam, gases, petroleum products and other similar fluids, with low corrosion, exclusive hydrogen, mixtures of hydrogen, as well as aggressive mediums with sulphur or sulphuretted hydrogen.

**Working temperature:** -10 ÷ 400°C



Conception – Design, specialized and experienced engineers that design and simulate with the help of the 3D software.



From the total of sold products in 2000 – 2011, the gates sell was registered by the VALVES (97%)



# Pumps

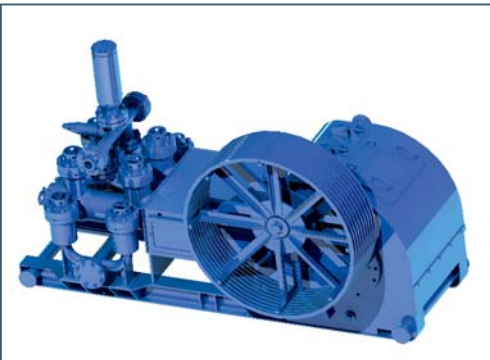
197

197 sold  
pumps in the last  
11 years.



■ 2000 ■ 2001 ■ 2002  
■ 2003 ■ 2004 ■ 2005  
■ 2006 ■ 2007 ■ 2008  
■ 2009 ■ 2010 ■ 2011

The evolution  
of the number  
of sold pumps in the  
last 11 years.



## Mud pumps PN 160 and PN 400

Duplex Mud Pump are designed to ensure the circulation of drilling mud through the drilling pipes column for driving the turbo cutter, drilling fines removal (detritus) from the bottom of the well (hole).

The pumps can be used and within groups of motor pump, driven with heat or electric engines or at the facilities for water injection in wells; at the secondary recovery operations of oil deposits, or at the auxiliary operations for preparation of the mud at hole.

Our company manufactures two types of mud pumps 2PN 160 and 2PN 400. These are horizontal pumps, with pistons, double acting, and single hering bone gear.

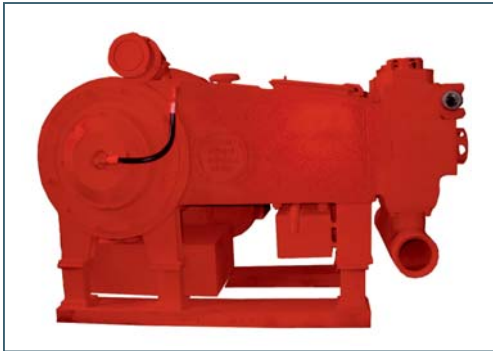
### Main characteristics:

#### Pump 2PN 160:

- Maximum input drive - 160 hp
- Max .speed input spindle - 530 rpm
- Max. diameter of the piston - 5 in
- Min. diameter of the piston - 3 ½ in
- Maximum discharge pressure - 160 bar
- Maximum flow rate - 14.25 l / sec

#### Pump 2PN 400:

- Maximum input drive - 400 hp
- Max .speed input spindle - 572 rpm
- Max. diameter of the piston - 7 ¼ in
- Min. diameter of the piston - 4 ½ in
- Maximum discharge pressure - 200 bar
- Maximum flow rate - 36,1 l / sec



## High pressure pumps

The triplex pump are single-acting pumps with helical or hering bone toothed cylindrical gear, bilt especially for operating conditions of cementing units.

The pumps are designed to run on reduced revolutions providing proper filling of pump cylinders and more than 0,9 volumetric efficiency on natural suction without supercharging.

### Constructive characteristics:

The hydraulic part of pump may be equipped, as desired, with the following range of plungers: 85; 90; 100; 115 mm and 125 mm, according with the maximum working pressure of cementing unit. In hydraulic part of pump mechanical energy is converted to hydraulic energy at the required operating pressure.

The hydraulic body is independent for each cylinder and is fixed to the pump frame. The discharge chambers at the 3 hydraulic bodies are united by discharge collector. The suction chambers of the hydraulic bodies are united by a common collector, sealed against each chamber. The other moving parts of the transmission mechanism such as gears, transmission shaft bearings are splash lubricated.



## UNIPET triplex pumps

The UNIPET type Emulsion Pump provide the hydrostatics pressure required to drive the different mechanisms.

### Technical characteristics

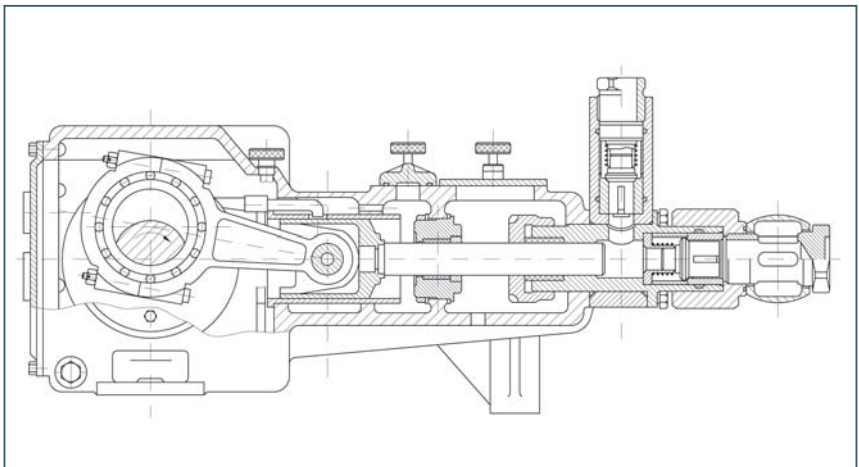
- testing pressure: 220 bar
- discharge pressure into installation: 190 bar
- working pressure: 155 bar
- pump cylinder capacity: 712,387 cmp/rot
- speed: 341,78 r.p.m.
- output at mentioned speed: 242,9 l/min
- required oil quantity: 38,00 l

### Overall dimensions:

- length: 1430 mm
- width: 1100 mm
- height: 740 mm

### Net weight: 1520,00 kg

The pump is driven by an electric motor with 75 Kw and 1500 r.p.m. by means of a gear reducer with cylindrical wheels. The pump requires the mounting of one safety valve into installation, regulated at maximum discharge pressure.



## 3PU 20 triplex plunger pump

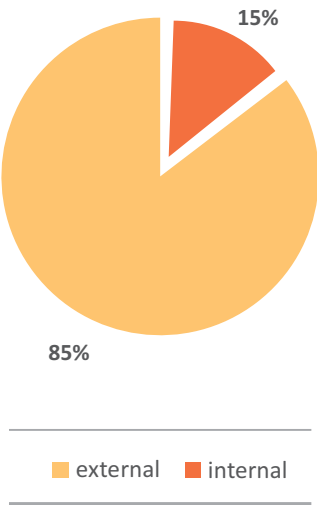
The triplex plunger pump 3PU 20 type is designed to produce the hydraulic energy and realize 36,8 l/min theoretical output at 500 rpm, providing the hydraulic energy at 140 dan/cmp max. working pressure in 6 minutes.

### Technical characteristics

- nominal discharge pressure: 210 daN/cmp
- plunger diameter: 25 mm
- plunger stroke: 50 mm
- nominal suction line diameter: G1 inch



# Successful and long lasting partners



Export sales in 2011 represents 85% from the total.



# Important producer of oil equipment from Romania

ROMANIA  
Eastern EUROPE



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