PETAL®

oil & gas equipment

PED 97/23/EC

6A - 0655

Oil & Gas Equipment

2014 - 2015



PETAL®
oil & gas equipment

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PETAL®
oil & gas equipment

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www.petal.ro

30 years of experience in designing and manufacturing of oilfield equipment

PETAL S.A. was founded in 1949 and has over 30 years of experience in designing and manufacturing oilfield equipment, industrial valves and fittings.

Our Company is one of the well-established producers of oilfield equipment for various geographical climate and environmental conditions, spare parts and equipment intended for drilling and exploration of petroleum and pit gas, industrial fittings, geological equipment, spare parts for overhauls of metallurgical equipment.

Policy regarding quality, environment, occupational health and safety



General Manager,
Eng. Ion VASÎLCA

Integrated Management is the strategic basis on which the management of PETAL S.A. Company relies, in determining the policy and objectives related to quality, environment, occupational health and safety.

Our primary goal is to maintain and continuously improve the implemented Integrated Management System, in compliance with the requirements of ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007.

Our common goal is to prove the capability of PETAL S.A. to continuously answer our customers' demands, to improve the performances of products, in order to exceed our customers' expectations.

The policy of top management is mainly oriented towards the following:

- continuous improvement of performances in the fields of quality, environment, occupational health and safety;
- prevention of accidental pollution, occupational injury and professional illness, in all activities;
- efficient employment of raw materials with the purpose of saving natural resources;
- observance of the laws and all applicable requirements on quality, environment, occupational health and safety;
- providing a suitable framework for establishing and analyzing the quality, environment and OH&S, as well as for the activity of all employees.

As a traditional producer of oilfield equipment, our Company activates on a competitive market, aiming at achieving the following objectives:

- the annual increase of turnover;
- the increase of share of oilfield equipment among the total sold products;
- the increase in the export sales volume;
- the increase in the total gross profit;
- the improving of working conditions of employees (modernization of workspaces, equipment and machinery);
- the continuous decrease of pollution, by decreasing the quantity of waste and emissions;
- the continuous decrease of global risk of occupational diseases and injuries.

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

- continuous identifying, assigning and optimizing of resources;
- assigning, training and raising awareness of the persons in charge with processes who continuously establish, maintain and improve the measurable objectives and performance indicators for each type of process;
- continuous documenting, analyzing, measuring, monitoring and improving;
- involving all employees in process improvement and by raising awareness of each employee regarding their performance.

The management of PETAL S.A. is oriented towards identifying and developing employees' skills by continuous training, recruiting, raising awareness and evaluation.

- This statement is an integral part of the Integrated Management System Manual, has been communicated within the organization, is known at all levels and is periodically reviewed.
- Materialization of the policy and of stated quality objectives, of the Integrated Management System Manual, represent compulsory tasks for each PETAL S.A. employee.

As General Manager, I commit to implement this policy and, for this purpose, I assign 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. Inspecting the application, observance and improvement of policy and objectives;

3. Directly reporting of results of such inspections.

Our commitment is compliance with our customers' demands.

"We only exist through our satisfied customers!"

"We are here to satisfy our customers!"



Quality and competence since 1949

1949 PETAL S.A. Company was founded in 1949, as a manufacturer of simple ironwork.

1970 Complexity of products gradually increased so that, in the 70's, the Company was among the manufacturers of metallurgical equipment.

1980 Since 1980, the Company has been growing fast by upgrading and by building new manufacturing capacities, by equipping with modern technological lines and by increasing the professional training of its employees. During this period, new oilfield equipment has been assimilated.



2000 In 2000, PETAL becomes an entirely private Romanian company and focuses on upgrading the quality of its products.

1985 In 1985, the Company starts to be among the acknowledged producers of cementing units and wellheads.

2001 In 2001, the Company certifies its Quality Management System in compliance with ISO 9001.



1949 · 1970 · 1980 · 1985 · 2000

2004 In 2004, the Company receives the API 6A certification for valves and nozzles.



2013 In 2013, our Company earns the right to apply the CE marking on its products, according to PED 97/23/EC.

In our Company, the welding works are performed by certified welders, in compliance with certified welding processes.



2010 In 2010, the Company diversifies the range of API-certified products and moves from the Quality Management System to the Integrated Management System for Quality, Environment, Occupational Health and Safety according to ISO 9001, ISO 14001 and OHSAS 18001 standards.

API Q® 6A - 0655

2014 Presently, our company is one of the acknowledged producers of oilfield equipment and machinery for various geographical conditions of climate and environment, spare parts for overhauls of metallurgical equipment, food industry equipment, industrial valves and geological equipment.

In 2014, our company will receive the right to apply the API-7K monogram on spare parts of slush pumps, for which implementation of requirements of the standard has been inspected and approved by the API representative.

2001 · 2004 · 2010 · 2013 · 2014



Sustainable principles for a solid future



Petal SA has committed to creating reliable products for all its partners, placing sustainable development at the centre of its business strategy.

Tradition

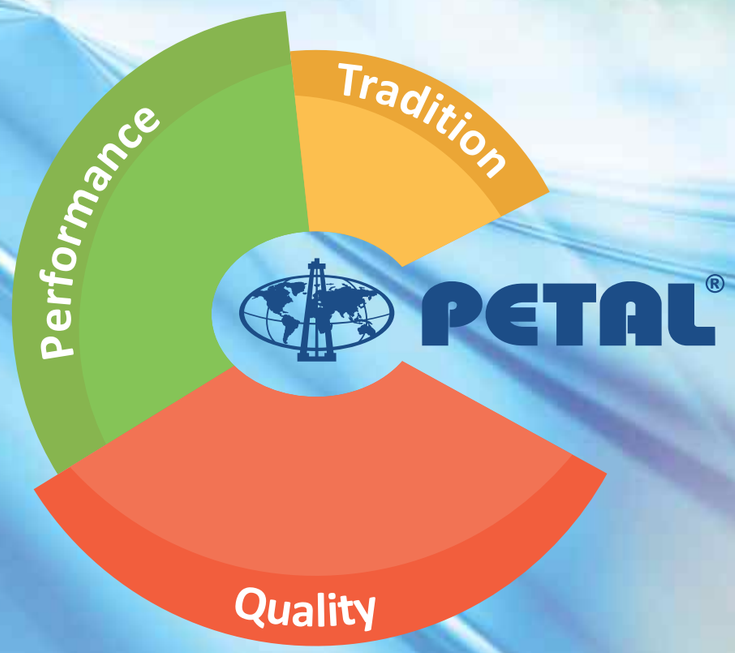
- We are a reliable partner, a powerful company, present here for over 67 years.
- Over 30 years of experience in designing and manufacturing of oilfield equipment.

Performance

- We fulfil the commitments made to our partners.
- We always search and implement the best solutions.
- A powerful team gets the best results.
- We improve the performances of our products in order to exceed our customer expectations.

Our principles

- Continuous improvement of performances
- Sustainable approach of environment issues
- Social responsibility
- Efficient use of raw materials





turnover (mil. lei)

163 %

increase in turnover between 2004 (10.6 mil. lei) and 2013 (27.8 mil. lei)

Quality

- The quality system of PETAL S.A. is certified by the esteemed Company LLOYD'S REGISTER QUALITY ASSURANCE.
- The Company is certified by AMERICAN PETROLEUM INSTITUTE according to the requirements of API Spec. Q1 Quality Assurance Programs and API Spec. 6A.
- Diversification of product range according to the market requirements and to the latest quality standards.
- We permanently invest in innovation and technique in order to meet the highest quality standards.

Our values

Tradition, performance and quality

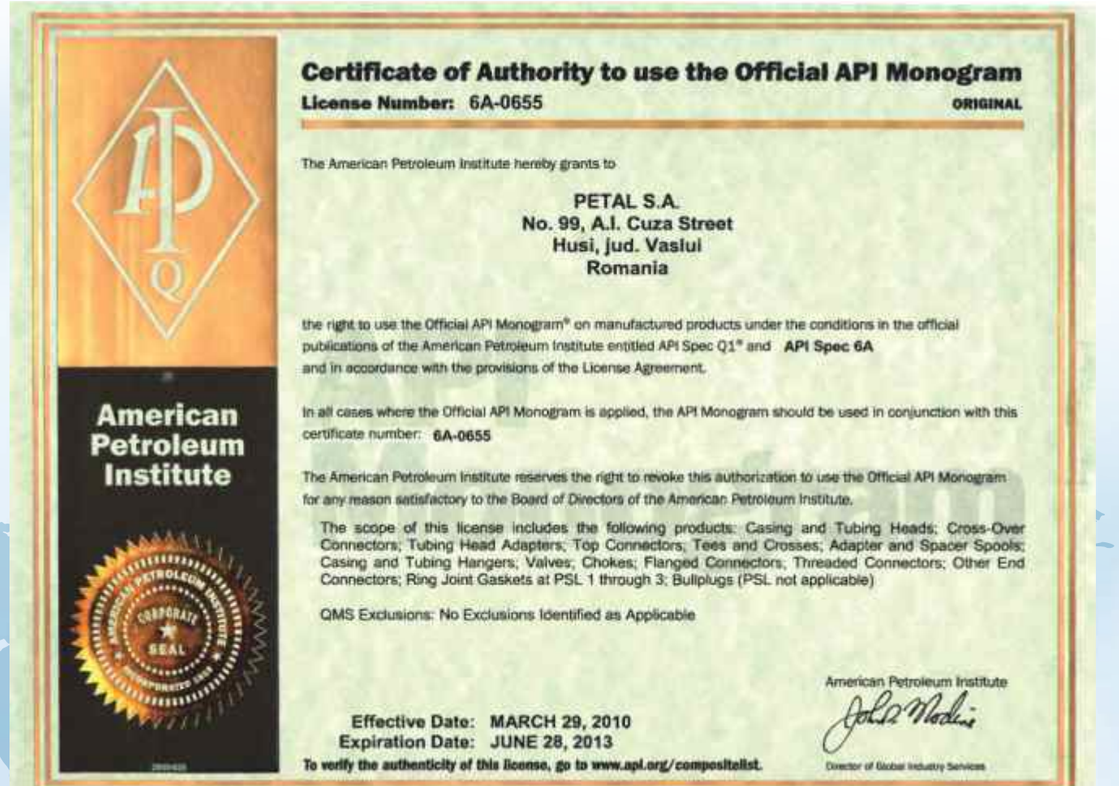
- these values represent our promise to build long-lasting business relationships, based on trust, and also our commitment to fulfil this promise in all aspects of our activities.



Integrated Management System

PETAL S.A. has implemented, operates and continuously improves an Integrated Management System according to the requirements of ISO 9001, ISO 14001 and OHSAS 18001 standards.
The Integrated Management System of PETAL S.A. is certified by the esteemed Company LLOYD'S REGISTER QUALITY ASSURANCE.

PETAL S.A. holds the API monogram for production of Casing Head Housings, Double Flanges, Adapters with Different Pressures, Caps, Christmas Tree Heads, Tee pieces and Cross pieces, Adapters and Spools, Wedge Pieces and Hangers, Valves, Nozzles, Flange Connections, Threaded Connections, other End Connections, Sealing Rings and Plugs; the Company is certified by AMERICAN PETROLEUM INSTITUTE according to the requirements of API Standard Spec. 6A for quality levels PSL 1, PSL2, PSL3 and API Spec. Q1 for the Quality Management System.



Certificate of Authority to use the Official API Monogram

License Number: 6A-0655 **ORIGINAL**

The American Petroleum Institute hereby grants to

PETAL S.A.
No. 99, A.I. Cuza Street
Husi, jud. Vaslui
Romania

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API Spec 6A** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram should be used in conjunction with this certificate number: **6A-0655**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following products: 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 End Connectors; Ring Joint Gaskets at PSL 1 through 3; Bullplugs (PSL not applicable)

QMS Exclusions: No Exclusions Identified as Applicable

American Petroleum Institute

Effective Date: MARCH 29, 2010
Expiration Date: JUNE 28, 2013

To verify the authenticity of this license, go to www.api.org/compositelist.

Director of Global Industry Services



The contracts with customers from all over the world represent the guarantee of our products.

6A - 0655

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



Integrated Management System



The Integrated Management System represents the strategic foundation on which the management of S.C. PETAL S.A. Company relies in determining the policy and objectives related to quality, environmental and occupational health and safety.

Maintaining and continuous improvement of the implemented Integrated Management System, according to the requirements of ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 represent our primary concern.


LRQA Business Assurance

CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

PETAL S.A.
99 Al. I. Cuza St., Husi, Vaslui County
Romania

has been approved by Lloyd's Register Quality Assurance to the following Management System Standards:

ISO 9001:2008 EN ISO 9001:2008
BS EN ISO 901:2008 SR EN ISO 9001:2008

The Quality Management System is applicable to:

Design and manufacture of oilfield equipment (cementing units of petroleum drills, gate and ball valves, chokes, wellhead, christmas trees and manifolds) and of spare parts. Manufacture of metallic parts and assemblies for metallurgy.

Approval Certificate No: BUC01703B7

Original Approval: 12 July 2001
Current Certificate: 19 July 2013
Certificate Expiry: 31 July 2016

Issued by: Lloyd's Register (Romania) S.R.L.
For and on behalf of Lloyd's Register Quality Assurance Limited.


LRQA Business Assurance

CERTIFICATE OF APPROVAL

This is to certify that the Occupational Health & Safety Management System of:

PETAL S.A.
99 Al. I Cuza St., Husi, Vaslui County
Romania

has been approved by Lloyd's Register Quality Assurance to the following Management System Standards:

OHSAS 18001:2007
SR OHSAS 18001:2008

The Occupational Health & Safety Management System is applicable to:

Activities including and associated with design and manufacture of oilfield equipment (cementing units of petroleum drills, gate and ball valves, chokes, wellhead, christmas trees and manifolds) and of spare parts. Manufacture of metallic parts and assemblies for metallurgy.

Approval Certificate No: BUC6010574

Original Approval: 09 October 2010
Current Certificate: 24 September 2013
Certificate Expiry: 08 October 2016

Issued by: Lloyd's Register (Romania) S.R.L.
For and on behalf of Lloyd's Register Quality Assurance Limited.


LRQA Business Assurance

CERTIFICATE OF APPROVAL

This is to certify that the Environmental Management System of:

PETAL S.A.
99 Al. I. Cuza St., Husi, Vaslui County
Romania

has been approved by Lloyd's Register Quality Assurance to the following Environmental Management System Standards:

ISO 14001:2004
SR EN ISO 14001:2005

The Environmental Management System is applicable to:

Activities including and associated with design and manufacture of oilfield equipment (cementing units of petroleum drills, gate and ball valves, chokes, wellhead, christmas trees and manifolds) and of spare parts. Manufacture of metallic parts and assemblies for metallurgy.

Approval Certificate No: BUC6010572

Original Approval: 04 October 2010
Current Certificate: 19 September 2013
Certificate Expiry: 03 October 2016

Issued by: Lloyd's Register (Romania) S.R.L.
For and on behalf of Lloyd's Register Quality Assurance Limited.


Lloyd's Register

EC CERTIFICATE OF CONFORMITY

In accordance with the requirements of the Pressure Equipment Directive 97/23/EC and the Pressure Equipment Regulations 1999, UK Statutory Instrument 1999 No. 2001 and SI 2002 No. 1267

PETAL S.A.
Str A.I Cuza 99, Husi,
Jud Vaslui, Romania

Lloyd's Register

EC CERTIFICATE OF CONFORMITY
CERTIFICATE 0038/PED/BUC1300078/A
SCHEDULE

In accordance with the requirements of the Pressure Equipment Directive 97/23/EC and the Pressure Equipment Regulations 1999, UK Statutory Instrument 1999 No. 2001 and 2002 No. 1267

PETAL S.A.
Str A.I Cuza 99, Husi,
Jud Vaslui, Romania

The quality system of PETAL S.A. is certified by the esteemed Company LLOYD'S REGISTER QUALITY ASSURANCE.

Lloyd's Register
PED 97/23/EC

LLOYD'S REGISTER QUALITY ASSURANCE · ISO9001

LLOYD'S REGISTER QUALITY ASSURANCE · ISO 14001

LLOYD'S REGISTER QUALITY ASSURANCE · OHSAS 18001



67 years of excellence in business

The value of exports in 2013 was 2.576.201 lei.

At the end of year 2013, the operating profit was 1.132.061 lei.

During year 2011, assets were purchased for improvement of inside-outside production areas and for modernization of the manufacturing capacity, within the law.

The main products manufactured were the wellhead units and the metallurgical equipment.

In the recent years, Petal S.A. has achieved an accelerated growth by upgrading the production capacity and by raising the skill level of employees, which have allowed assimilation of a wide range of products.

The production of oil and natural gas accounts for 60% of the entire economic activity worldwide.

Period	Wellheads + Christmas trees	Valves	Pumps	Pump spare parts	Turnover LEI
2013	50	2115	24	9860	27737382
2012	37	2083	18	9030	27305972
2011	50	2494	15	7862	22470527
2010	45	1662	41	6570	20534413
2009	25	1448	18	11544	22822847
2008	34	1600	21	14402	29140163
2007	20	290	3	8922	22824301
2006	13	600	2	6458	18375804
2005	11	850	5	8525	15246483
2004	10	1802	2	6959	10578832

The number of valves, wellheads and Christmas trees, pumps and spare parts for the pumps sold by Petal S.A. and the turnover between 2004 and 2013.

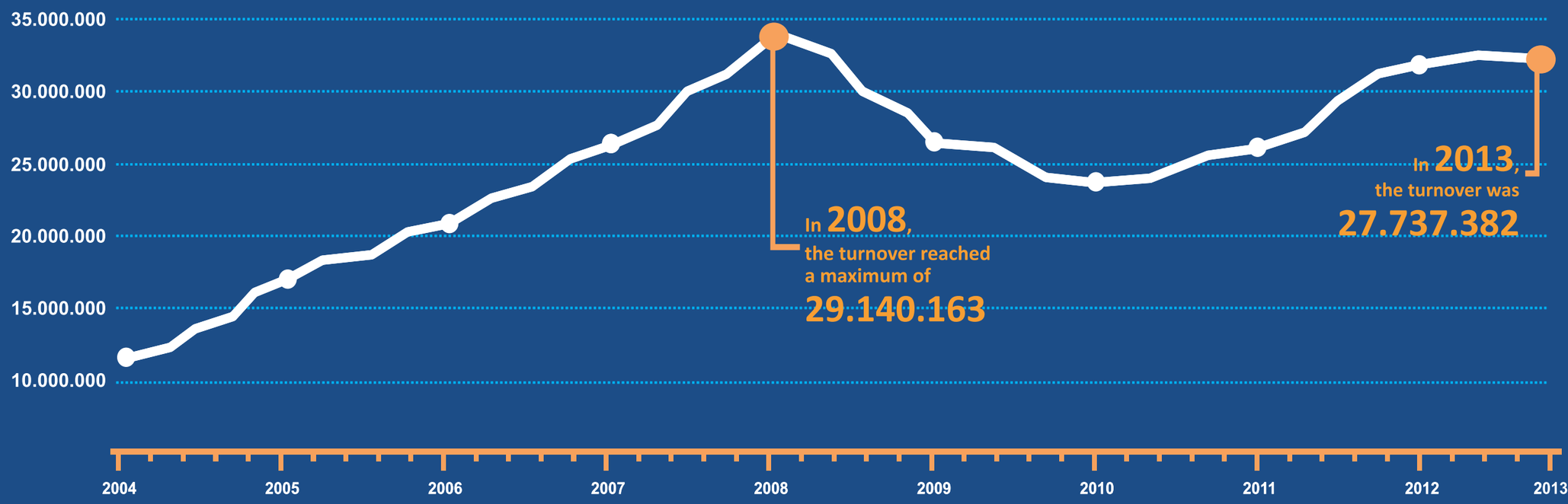
For the future, an increase around 5-10% per year is anticipated; however, as the deposits will be more and more difficult to exploit, new equipment must come into existence, for difficult conditions of pressure (2000 ÷ 15000 PSI), temperature (-60°C ÷ +400°C), highly resistant to corrosive agents (CO, H_2S, salt water, etc).

15.474

Over 15.474 products sold since 2004.

Turnover

Between 2004 and 2013, the turnover increased



People and environment - the most valuable resources



We continuously invest in protection of the environment.

Since 2010, Petal S.A. is certified for the **Environmental Management System** according to ISO 14001:2004 standards.

Petal S.A. holds the environmental assessment no. 52/15.05.2009, valid for ten years from the issuance date.
In running its business, the Company employs substances in the category of dangerous substances whose inventory is very strict.
For the waste resulted from operation, all documents required according to Government Decision 856/2002 and Government Decision 1061/2008 are elaborated.
For discharge/recycling of waste, contracts are signed with certified economic operators.

By implementing the Environmental Management System, the top management commits to:

- prevent accidental pollution
- use the raw materials efficiently, with the purpose of saving natural resources
- observe the laws and all applicable requirements on environment
- continuously decrease pollution, by decreasing the quantity of waste and emissions

The concrete objectives of the company in the field of environmental protection are the following:

- Decreasing of COV emissions into the atmosphere by filtering the air released into the atmosphere at the paint shop;
- Decreasing of the level of gas and vapour emissions in the metallic coating process;
- Decreasing the consumption of natural gas related to production of goods.

Petal S.A. holds the OHSAS 18001:2007 certification for the **Occupational Health and Safety Management System.**

The management of PETAL S.A. is oriented towards identification and development of employees' skills by training, recruitment, awareness raising and continuous evaluation.

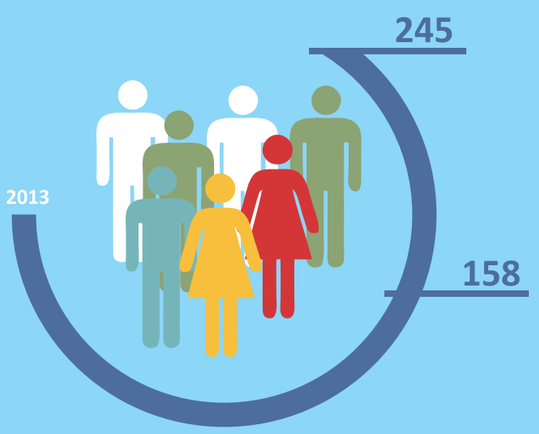
Our objectives are:

- Continuous improvement of performances in the field of occupational health and safety.
- Prevention and elimination of occupational accidents and diseases, in all activities performed.
- Observance of legal provisions and all other applicable requirements on occupational health and safety.
- Providing a suitable framework for establishing and analyzing the quality, environmental and occupational health and safety, as well as for the activity of all employees.

Petal S.A. permanently aims at improving the working conditions of the employees by upgrading the workspaces, equipment and machinery.

The current number of employees is 245 and we aim at increasing this number in the near future, thus offering actual chances of employment in the area.





The average number of employees at the end of 2013 was 245, 158 of them were working in production.



Social Responsibility

The social responsibility is an integral part of the PETAL S.A. strategy. This way we want to make sure that we fulfil our duty to society, by programs which generate not only long-term results, but also attitude. First and foremost, we want each employee of the company to have a responsible social behaviour and that we improve our business practices.

PETAL S.A. has a adopted a CSR strategy which involves planning, monitoring and reporting of policies regarding transparency, fighting corruption, environmental protection and relationship with the communities and with the people with whom it works."

Foundation

PETAL

The Petal Foundation was founded in year 2009

RESPONSIBILITY TOWARDS THE COMMUNITY

The initiatives by which the Company proves its concern with the community in which it activates usually unfold in one of the following fields: education, culture, sport or social welfare.
PETAL S.A. involves in the social or environmental projects, trying to offer an example by the willing involvement of its employees.

In 2009, the company founded the "PETAL" Foundation with the general interest, exclusive and immediate purpose of charity, supporting the social, cultural, economic and ecological development of Husi city and the neighbouring rural area. The main objectives of the Foundation are the following:

- supporting the categories of socially and materially under-privileged people;
- humanitarian activities to support the under-privileged social categories;
- foundation of protection centres, homes, shelters, public canteens in Husi city and in the neighbouring area for the homeless, the poor, the elderly, the orphan, persons coming from dysfunctional families;
- developing contacts with other humanitarian organisations;
- organization of congresses, conferences, shows, cultural exhibitions, thematic contests, camps, study trips, documentation visits;
- supporting of skilled children with the purpose of their schooling in various fields of activity;
- sponsorships for natural persons and legal entities;
- growing the principle of Christian solidarity;
- promoting philanthropy and charity;
- activates and programs for environmental protection in view of raising awareness among the population regarding the effects of climatic change;
- educational activities for children and grown-ups;







Petal, well-established producer of equipment and oilfield equipment



Main suppliers:

MIRAS INTERNATIONAL
OMV PETROM S.A.
MITALL STEEL GALATI
FORJA NEPTUN
FORJA ROTEC
ARTROM SLATINA
TURNATORIA ORION CAMPINA

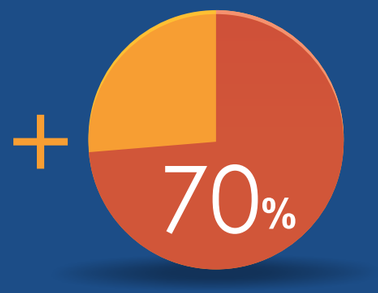
The Company covers a 42800 square meter area, of which 27000 square meters represent administrative and production building, expanding continuously.
The number of employees is around 245, 158 of them are directly involved in production.

The Company enjoys a great level of autonomy:

The Conception and Design Department, where design and simulation are done by means of 3D software by specialized and experienced engineers.

The Casting Unit, which provides 80% of the steel, cast-iron and non-ferrous metal cast pieces required. The cast semi-finished product can weigh up to 1000 kg, with a level of complexity up to IV. The moulds employed in the casting house may contain up to 6 cores.
At the end of the processes, the cast semi-finished product leaves the unit with a very clean aspect due to the sandblasting installations.

The thermal treatment sector is equipped with vertical furnaces, fluid bed treatment installation, treatment installation with high-frequency currents, salt baths. The main thermal treatments performed in this sector are the following: annealing, hardening, tempering, cementing, nitration, nitro-ferroxing, on pieces with diameters up to 1200 mm and lengths (heights) up to 1500 mm.



Increasing of manufacturing capacity

by 70% by starting project “Development of oilfield equipment production, increasing the capacity for certification of the product range according to the A.P.I. standards, aiming at increasing the competitiveness of products on the domestic market and especially on the foreign markets”, amounting 13.65 mil. lei.

The metallic coating sector, where the operations of hard-chromium plating, cadmium plating, phosphating take place.

The machine work unit, equipped both with universal machines and with special machines, CNCs, where the turning, milling, toothing, honing, grinding, drilling, mortising, planning, relieving works, etc., take place. In this unit, tooling for pieces with diameters up to 2200 mm and lengths up to 6000 mm take place.

The ironwork unit, equipped with welding equipment MIG, MAG, TIW / WIG, MMA, spot welding, gas cutting, rolling machines, etc.

The assembly and testing sector, at the end of the assembly line for specialized products, according to types of products (automatic beds for testing of mounting pieces with pressure up to 2000 bar, automatic beds for testing, monitoring and registration of parameters of cementing and fracturing units with pressures up to 1050 bar, beds for inspection of functionality, etc.).

Laboratories - In the chemical analysis laboratories, the chemical composition of the ferrous and non-ferrous semi-finished products is determined, by means of an optical emission spectrometer with argon spark. The non-destructive examination laboratories are provided with equipment for performance of examinations with ultrasounds, with magnetic particles and with penetrating liquids. Shock bending tests, traction tests, measurement of deformation, spring calibrations, etc. take place in the mechanical tests laboratory. The length laboratory is equipped with instrumentation of great diversity and range of accuracies.

All laboratory tests and analyses are only performed by trained personnel, with special training for the respective operations.





Petal, partner for performance

Petal SA offers the most suitable solutions to oil and gas producers for upgrading the efficiency and performance of equipment.

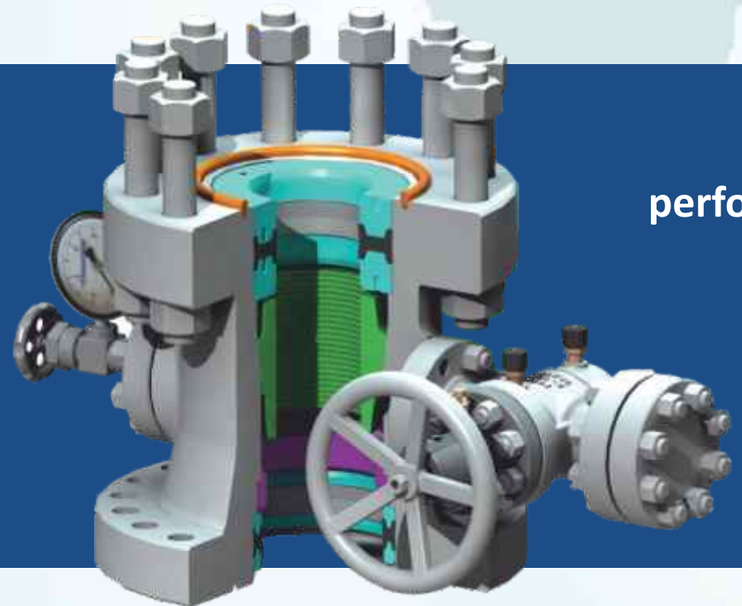
Being a future-oriented company, the main objective of Petal S.A. is continuous optimization of technology and development of innovative products.

In 2004, the Company scope of activity was supplemented with the following activities:
- Research and development in other natural sciences and engineering
- Other forms of education

Elaboration and implementation of staff training programs is intended, in regards to efficient and effective use of existing technologies, development of new products, employment of new technologies and computing machinery.

The objectives of research and development projects are:
- updating and refreshing of skills and knowledge of employees
- acquiring of new skills for a higher professional level
- encouraging and stimulation of employees regarding personal and professional development
- promoting human capital as a central production factor, with an important role in economic performance and growth

On these lines, financial, material and human resources will be allocated for professional development of employees.



We invest in performance and innovation

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 requireed 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 wit 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

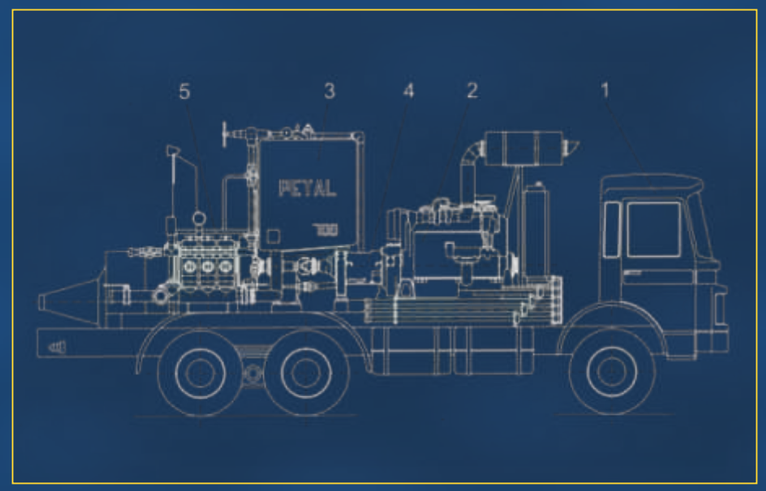
ACF 700 Cementing and fracturing unit

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



1	2	3	4	5
Chassis truck	Motor CATERPILLAR C15 Tier 3	Measuring tank	Transmission CATERPILLAR TH35E81A	Triplex pump

86 pcs.

Cementing and fracturing units sold between **2004 and 2013**

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_2S-NACE and H_2S + CO_2-NACE.



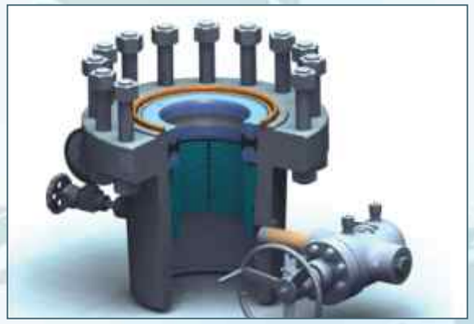


Constructive characteristics of the main components:

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
- assemblying 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.



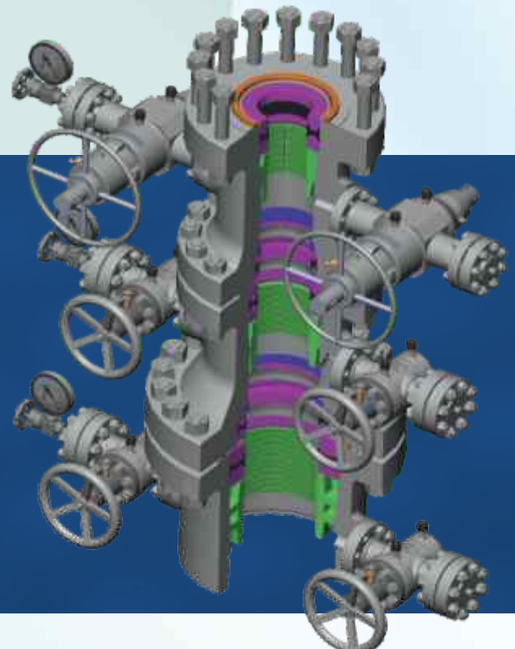


Tubing heads

The tubing heads are used to suspend and to seal the tubings with 2 ⅜ in (60,3 mm), 3 ½ in (88,9 mm), 2 ⅞ in (73 mm) and 4 ½ in (114,3 mm) diameters.

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.

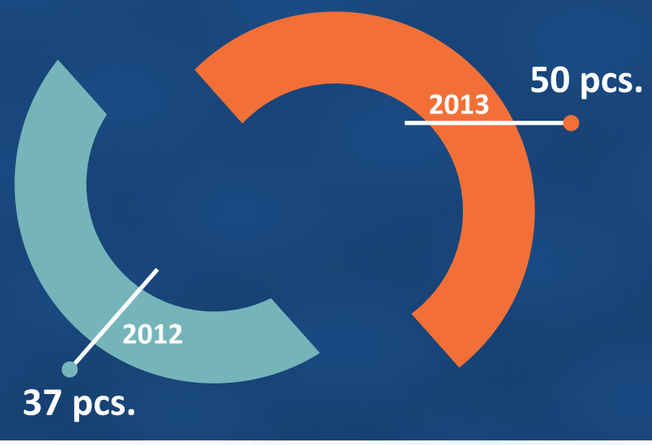


Manufacturing criteria for WELLHEADS

– quality level
PSL1, PSL2, PSL3

– material class
AA, BB, CC, DD, EE, FF

– Temperature class
L, N, P, S, T, U



37 pcs. ■ 2012
50 pcs. ■ 2013

Wellheads and Christmas trees sold

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_2S-NACE, $H_2S + CO_2$-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 lenghts.

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



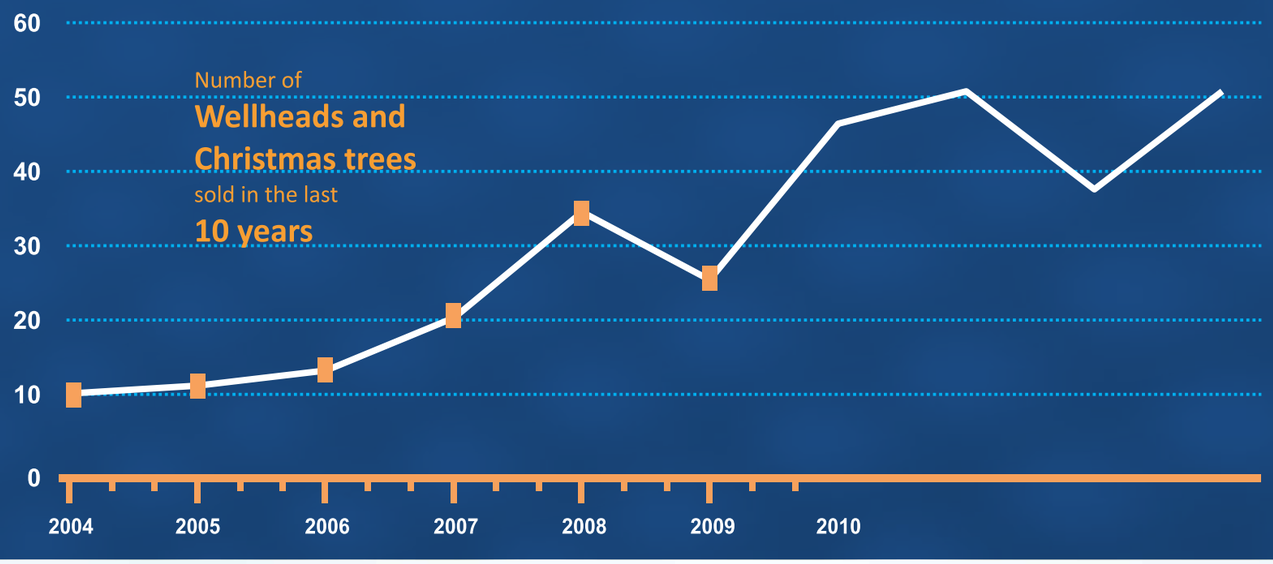
Running and retrieving tools for Wellheads and Christmas trees

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.



Number of Wellheads and Christmas trees sold in the last 10 years





Valves and Chokes

PETAL Company produces and sells valves and chockes 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.



Expanding paralel 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 paralel 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 1/8 until 5 1/16.

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



FC model gate valves (Slabe 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.

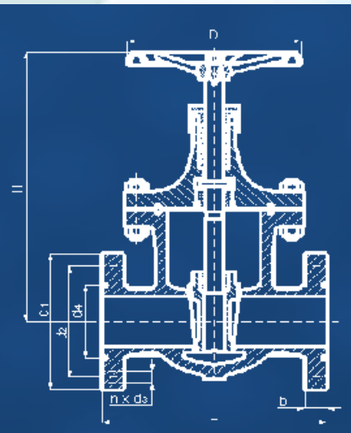
Working medium: water, oil products, gases, steam or other fluids with low corrosion.

Manufacturing conditions for the API 6A valves

Quality level
- PSL1, PSL2, PSL3

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

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







Valves and Chokes



Adjustable and positive flanged chockes

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:

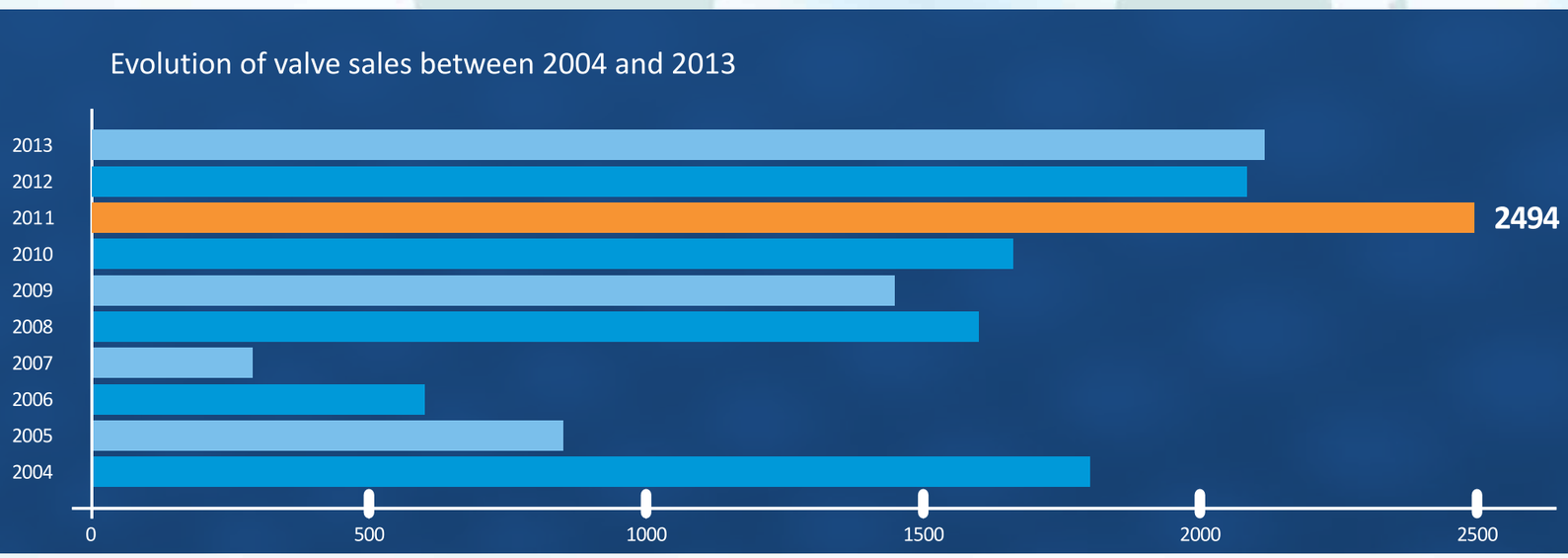
- max. working temperature: 82°C
- passing direction: one-way
- mounting position: according with the indicated sense
- body-piston sealing: metal-to-metal
- body-cover sealing: metal-to-metal



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.





Valves and Chokes



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



valves miscellaneous

Among the total number of products sold between 2004 and 2013, the greatest share was represented by **VALVES (97%)**

14.944

Number of valves sold in the last 10 years



Valves and Chokes



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 1/16 until 4 1/16.

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

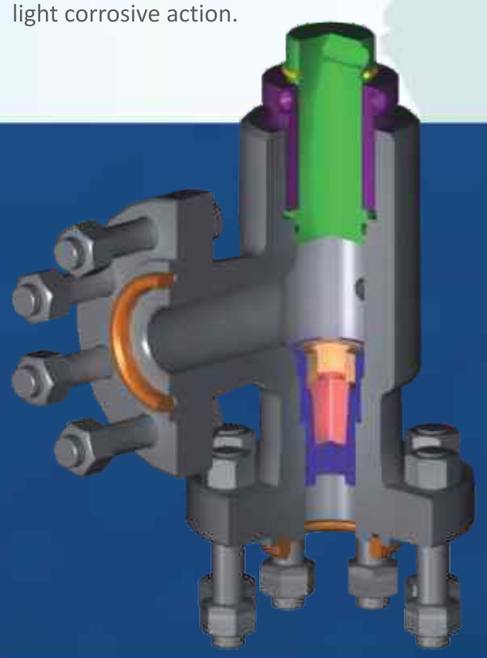


Straight globe valves

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.

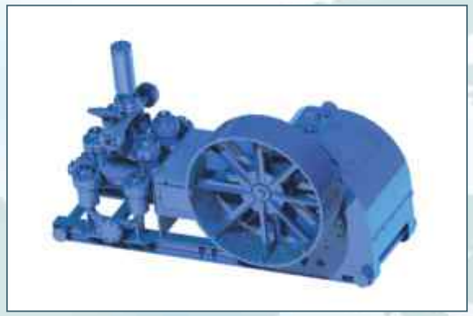
Working temperature: -10 ÷ 400°C



Conception – Design

Specialized and experienced engineers that design and simulate with the help of the 3D software.

Pumps



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.

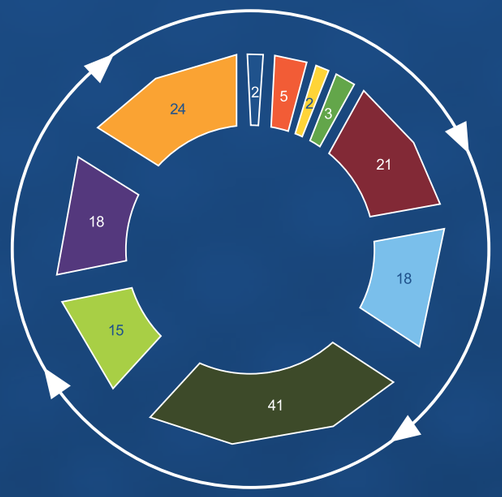
The pumps are designed to run on reduced revolutions providing proper filling of pump cylinders and more than 0,9 volumetric efficiency on natural suction without supercharging.

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.

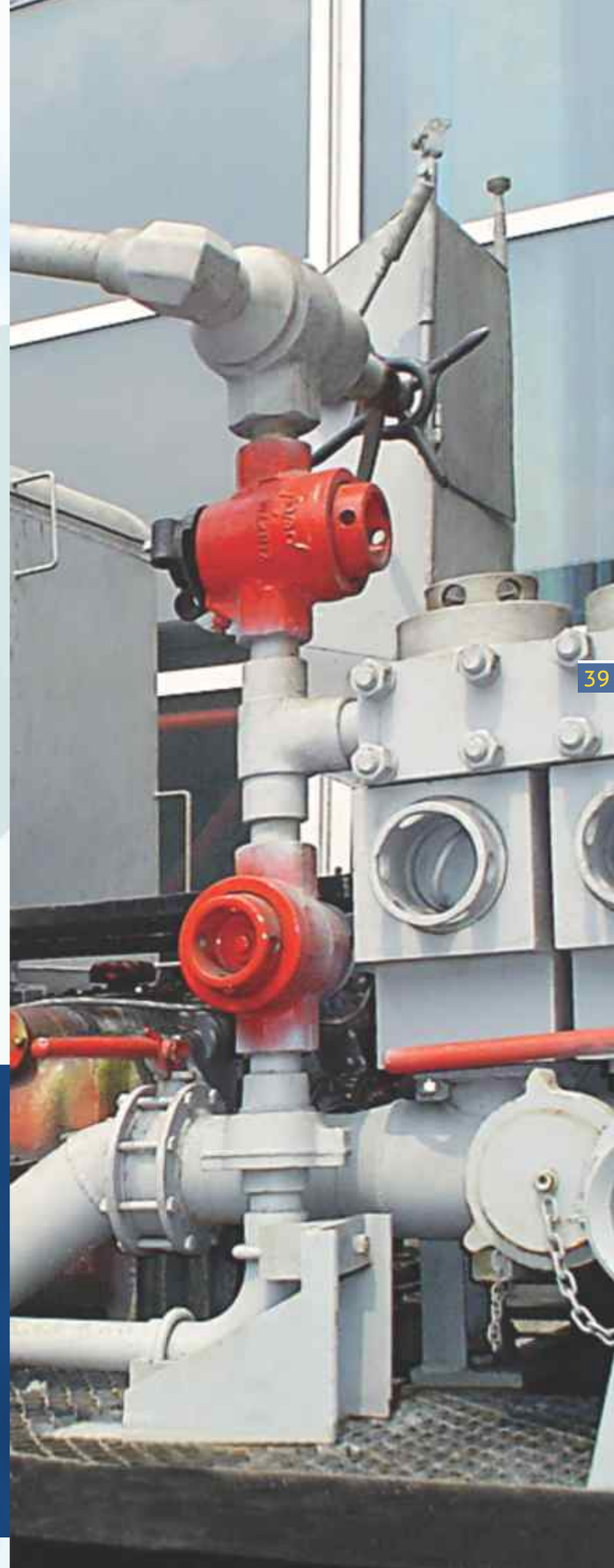


Evolution of number of pumps sold in the last 10 years

2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

147

Number of pumps sold in the last 10 years



Pumps



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

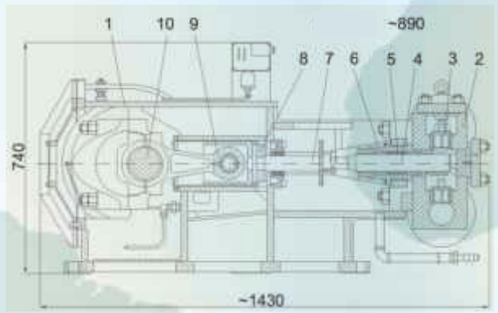
Overall dimensions:

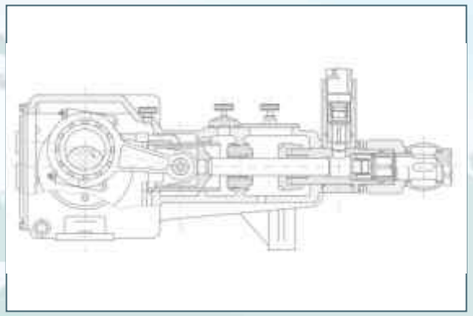
- length: 1430 mm
- width: 1100 mm
- height: 740 mm

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.



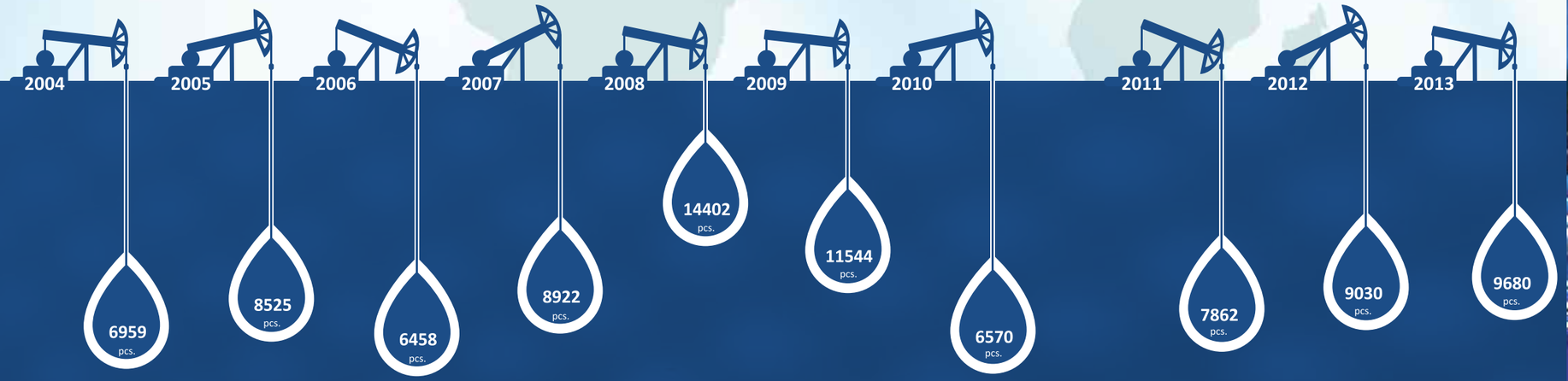


3PU 20 triplex plunger pump

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



Evolution of number of spare parts for pumps sold in the last 10 years



Well-established manufacturer of oilfield equipment from Romania

The main beneficiaries of products and services of PETAL on the domestic market are the following:

- OMV PETROM S.A.
- S.N.G.N. ROMGAZ S.A.
- ARCELOR MITTAL
- PETROFAC SOLUTIONS&FACILITIES SRL
- PETROSANTANDER ROMANIA SRL
- EXPERTPETROLEUM SRL
- DAFORA S.A.
- DRILLING EQUIPMENT SRL
- NIS PETROL ROMANIA SRL





PETAL®
oil & gas equipment

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735100 Huşi – Vaslui County, Romania
Tel: +40 - 235.481 781
Fax: +40 - 235.481 342
E-mail: office@petal.ro
www.petal.ro

Successful and long-term partners

2.576.201 Lei

Value of exports
in 2013





Huşi "City between vineyards"

Located in a valley, surrounded by “busuiaca” and “zghihara” vineyards, Husi city still keeps something of the height and commercial taste of the old ruling citadels - winged church steeples, groups of houses with thick walls and manorial colonnades. Husi city and its surroundings are places which, as if attracting the grace of gods, have produced fatness and, by the industry of the inhabitants, goods with ageless value, have carried on occupations which enriched these settlements.
The fruit of vineyards and the unmistakable wines have brought on the good name of “wine country”, as Husi city is an important wine preparation centre.

Husi - the city and the vineyard form an entity of Romanian culture and civilization toft, the city history being closely connected to the vineyards which has surrounded it for centuries.
From Stephen the Great and Saint to Alexandru Ioan Cuza, almost all great voivodes had their ruling residence in the ruling residence of Husi , a Christian establishment and bower for good wines.

The foreign travellers crossing medieval Moldavia have written about the excellent quality of wines from Husi.

"Husi, ancient establishment of Moldavian vineyards, produces a tasty, aromatic and very sought-after wine”. *Marco Bandinus, 1646*

Husi city is located in the Eastern side of Romania,
on the European Road E581, which connects Romania to
Republic of Moldova, through Albita Customs.
Population 2011: 26.266 inhabitants.
Coordinates: 46°40’27”N 28°3’35”E

PETAL®
oil & gas equipment

PETAL®
Нефтегазовое оборудование

Flow of production / Технологический поток





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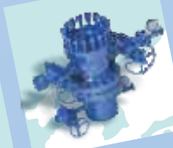
PED 97/23/EC

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