



INTI

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SMEs EXPORT

Argentine technology and innovation



PETROLEUM



INSTITUTIONAL RELATIONS AND COMMUNICATIONS OPERATIONAL MANAGEMENT

Institutional Relations Deputy Management



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Editorial



The Oil and Gas sector represents one of the fundamental pillars of the Argentine economy, playing a strategic role in its productive and economic development. This sector promotes a network of companies and SMEs that make up and energize the entire production chain.

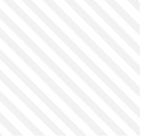
The National Institute of Industrial Technology (INTI) plays a crucial role in this chain, providing support and promoting the development of all its suppliers. Our objective is to promote increased competitiveness and productivity, as well as optimize various processes, thus contributing to the growth and consolidation of the country's productive network. To achieve this, we offer a wide range of mature tools developed at the Institute, including testing, analysis, calibrations, specialized assistance, technology transfer, certifications, developments and innovation.

This time, we are pleased to present four federal collaboration experiences between INTI and the sector. These experiences exemplify the tangible results of the synergy between the Institute and companies, highlighting our mission to transfer technology and generate value in the assisted organizations.

These cases represent various examples of the improvements that can be achieved through specialized technological services and assistance in organization, planning and continuous improvement processes. Our approach seeks to generate structural changes that last over time beyond the end of the service, driving continuous improvements that companies can address autonomously.

Mg. Ing. Patricia Ohaco

**Patagonia Regional Deputy Manager
INTI**



JET OIL TECHNOLOGY S.A.



Flush by, pulling and workover in a single lightweight device



In the oil industry, aspects such as efficiency and innovation are crucial to optimize production and reduce operating costs. In this direction, the unification of specialized *flush by, pulling and workover services* in a single lightweight equipment is presented as an innovative solution with multiple benefits. In this context, the company Jet Oil Technology S.A. stands out as a pioneer in Latin America after developing a team that leads this transformation.

With 12 years of experience in the sector, Jet Oil Technology S.A. has demonstrated how the adoption of this integrated approach not only improves logistics in the wells, but also significantly impacts the reduction of costs per barrel of oil, marking a milestone in the regional oil industry.

Its equipment allows greater efficiency and lower cost compared to large equipment, with the capacity to reduce operational times on location. Being hydraulic and with a technology that allows remote data transmission, it generates benefits, both in terms of noise and CO₂ emissions into the environment, in addition to a profile of greater operational safety in its maneuvers.

These types of equipment are usually attached with cables, however the one from Jet Oil Technology does not need winds because it is calculated to resist gusts of up to 180 km/h. The tower system is closed, unlike traditional lattice towers. Its motors and cables are moved by the hydraulic system, compatible with electronics. This gives the user greater security and speed in logistics.



In Argentina there are more than **9,000 supplier companies in the oil sector**. The value chain of this industry generates **65,000 direct jobs and another 331,000 indirect jobs**.

Source: Econo Journal

Regarding the origin of the company's link with INTI, the director of Manufacturing and Extractive Industries of the institute in the Cuyo region, Eng. Juan Carlos Najul, points out that “the company turned to INTI, within the framework of an important financing program. It was a project to develop light equipment for oil well services”. To achieve this, work was carried out on the formulation of the project, investment evaluations, technical assistance, measurement of efficiency indicators and operational evaluation of performance in deposits.

“The team's key is to improve all logistics and operation times, introducing management technology tools and continuous improvement tools in an oil production field”, Najul clarifies.

For his part, the president of the company, Eduardo Rosales, comments that “they contacted the Institute on the recommendation of YPF. INTI contributed to the validation process of the technology used in the development of the equipment. The results issued by this Institution generate trust and seriousness, both nationally and internationally”.

For reasons of proximity and logistics, the company aspires to export to Brazil, while at the same time it is interested in entering the North American market, by virtue of covering unmet needs. “In the United States there are no light equipment, so entering that market is a great challenge, particularly for use in the Gulf of Mexico basin”, adds Rosales.

The company assures that the viability of oil as an energy niche offers it a great opportunity. Its technology provides continuity to the use of oil, at a lower cost per barrel.



This equipment, unique in Latin America, has characteristics that differentiate it: operational efficiency, compactness, portability, 4.0 technology, lower operating costs, lower CO₂ emissions and noise factors. It is designed to meet the requirements of operators and solve problems that conventional equipment causes in the basins of Latin America or any region in the world. This makes them preferred by clients since they achieve cost reductions of up to 60%, depending on the deposit.

This instrument can make more than 25 pulling interventions (typical or standard) per month, more than double that of conventional equipment. When it's time to flush by, the same team can perform more than 45 interventions (typical or standard) in the month; equaling or surpassing its market peers. However, through a *power swivel* developed by the company, it can also perform many of the tasks of a conventional *workover* with the same level of efficiency.

"Its benefits include higher efficiency and safety rates, longer useful life of the wells, and reduced environmental impact. We manufacture the only equipment in Latin America that maintains a high level of efficiency with 3 key functions (*workover, pulling and flushing*) for the development of oil fields", summarizes Rosales.



JET OIL TECHNOLOGY S.A.

San Rafael, Mendoza

Efficiency solutions in the oil industry.

-Floor: 5000 m² with 2100 m² covered.

-Production capacity: 2 teams per year.

• HS CODE (NCM):

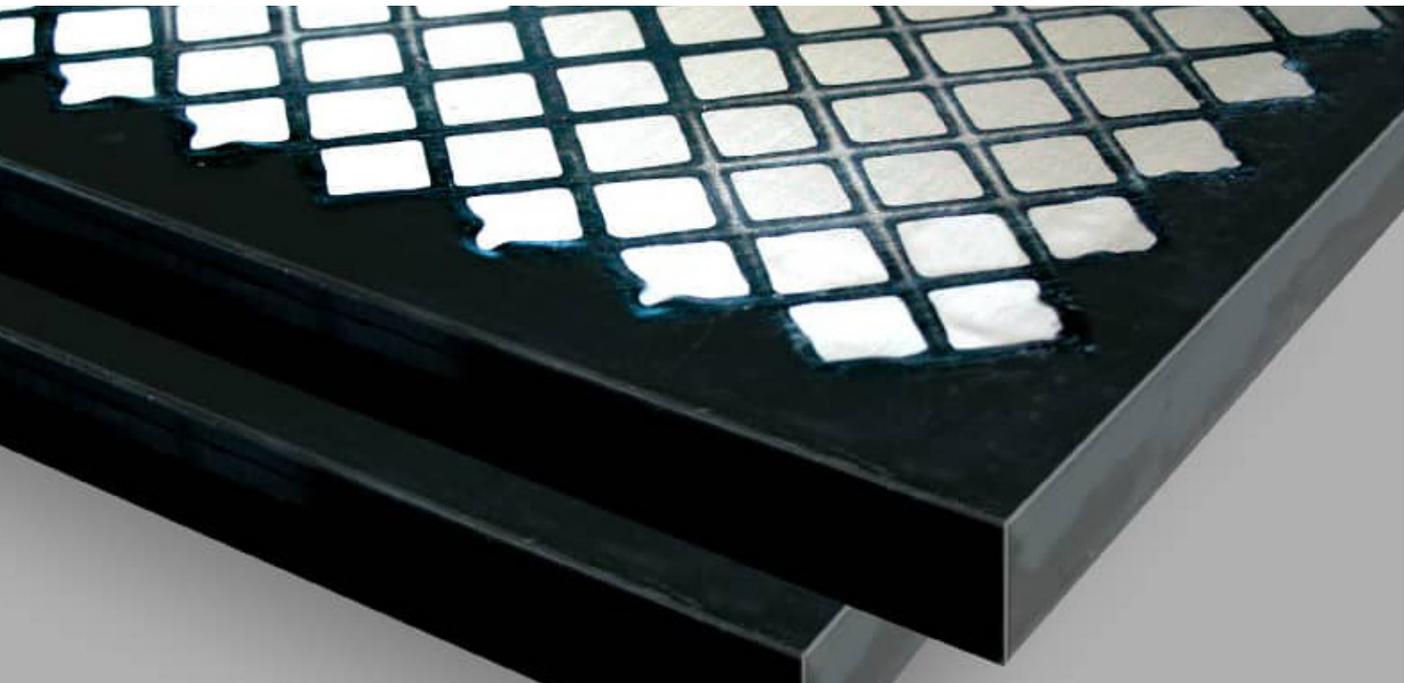
-8705.90.90.420B / Intended for cleaning, drilling, repairing, or completing oil wells, consisting of a motor vehicle chassis with a cabin in which a reel with flexible pipe and drive motor is permanently mounted and metallic structure, hydraulically actuated, with three degrees of freedom.



FATZE S.R.L.



Leader in shaker screens fabrics for the global oil industry



In the dynamic world of the oil industry, the use of shaker screens is essential for the extraction and processing of crude oil, being key to optimizing operations and guaranteeing process efficiency.

With a growing demand for innovative solutions that boost productivity and reduce operating costs, Fatze firm offers high-quality shaker screens and is positioned as a leader in the local market while projecting its reach internationally.

In competition with large global brands, Fatze stands out by offering products of comparable quality at a significantly lower cost, making it an attractive option for oil companies looking to maximize their performance without compromising their budget.

Specialized in the manufacture of seven models of separator cloths for vibratory processes under procedures of the American Petroleum Institute (API 13C), the company has an engineering department dedicated to the development and continuous improvement of its products, a capacity that allows it to satisfy special orders and tailored.

In search of optimizing its plant distribution and improving its processes in the new building structure, the company decided to contact the Management and Logistics Technologies department of the INTI in the Patagonia region. The specialist Diana Alonso, in charge of the mentioned department, explains that the work carried out



was developed in several stages. First, a workshop was organized in which the company's staff collaborated with the Institute's specialists to jointly design the new layout of the shaker screens production plant, including equipment, materials, and supplies. Next, a detailed map of the production process was prepared to identify possible opportunities for improvement, such as the creation of mobile stations to speed up the movement of materials in process.

Secondly, a plan of the warehouse was prepared in which the equipment and storage areas were in a scale model, where the flow of raw materials and semi-finished and final products was considered. Specific areas were also incorporated for the maintenance and operation of the equipment in order to guarantee an efficient and functional space.

The final result of INTI's technical assistance was a plant layout adapted to the present and future needs of the company, for which all the factors relevant to its operation were taken into consideration.

For his part, Guillermo Fantini, managing partner of the company, points out that INTI's technical assistance resulted in a significant improvement, especially in the fabric production plant, through the optimization of procedures, support in direct investments and the precision in production times.



Global oil consumption estimated by the International Energy Agency will exceed expectations in 2024, when global demand will climb to a new all-time high of 102.9 million barrels per day (mb/d), despite slowing growth of consumption due to decarbonization measures.

Source: Energy report



So far, the company has exported its products to destinations such as Saudi Arabia and soon, they aspire to enter the African country of Algeria. In turn, as a short-term objective, they plan to penetrate the Brazilian offshore market.

“Fatze is an SME with a notable production capacity and decision to invest in the continuous improvement of its product, adjusting to the needs of its customers with exceptional quality and at a cost up to 50% lower than other leading international brands. In this way, it is positioned as an attractive and profitable option for oil companies looking for high-quality solutions at competitive prices”, concludes its manager, Guillermo Fantini.



FATZE S.R.L.

Plottier, Neuquén

Manufacture of fabrics for shaker screens and meshes.

-Floor: 600 m².

-Annual productive capacity: between 12 thousand and 15 thousand fabrics.

• HS CODE (NCM):

-7314.14.00.000 / Shaker screens.



FUNDALUM S.A.



Precision casting in petroleum tools

Microcasting emerged as a prominent innovation in tool production for the oil industry in the 1960s and 1970s. This advanced precision casting technique gained recognition for its advantages for the production of complex, detailed parts with high dimensional tolerance. Over the years, its application in the sector evolved, with significant benefits in terms of quality, durability and efficiency in the business of exploring and extracting energy resources.

In this area, the firm Fundalum S.A. produces different parts and components in steel and special alloys using microfusion, shell molding and chemical molding processes. Among them we can mention: jaws, jacks, cones, blocks, and more than 750 references of pieces up to 8 kg. These are delivered machined with their corresponding heat treatments, ready to assemble.

The company, a benchmark in Argentina, falls within the guidelines established by the Investment Casting Institute of the United States. Its commitment to excellence in microfusion not only reflects the quality of its products, but also its contribution to sustainable development and competitiveness in the sector.



Eng. Mónica Campanaro, INTI Regional Assistance Manager, points out that, from the institute's center in the city of Tandil, Buenos Aires, fluid contact is maintained with the company in order to provide training tools, technical assistance and information on financing lines. In this sense, several projects related to management technologies for improving productivity and the implementation of Kaizen groups were developed. In turn, the firm participates in a survey carried out by the INTI Melting Observatory.

Regarding the joint work with the Institute, the company director, Marcelo Porreca, adds: "INTI is always available to meet our needs in project formulation, technical assistance, structure and development. The work on layout and the method of 5S has improved the productive capacity, quality, and organization of the system. These aspects are essential to enter new markets".

The company exports 50% of its production indirectly to large multinationals in the sector. "Through these firms we have a presence in Brazil, Colombia, the United States and Mexico. "We are prepared to satisfy the demand of those regions of the world that need our products", explains the director of Fundalum.

And he concludes: "In Argentina we lead the market. We have the capacity to carry out machining operations, thermal and surface treatments to deliver finished components, according to our clients' specifications. Regarding our international positioning, we stand out for the quality, design, and development of a wide variety of pieces in medium volumes".



THE BENEFITS OF MICROFUSION

Some of the advantages of this casting technique are establishing totally free part shapes, impossible to achieve in other processes; select any type of alloys such as steels (carbon, alloyed, stainless, refractory, fast, non-deformable, etc.) and superalloys; and achieve high mechanical characteristics, not surpassed by other part forming techniques. Finally, this process allows us to achieve an excellent surface finish (Ra: 2.0 μm (80 μ "") and Ra: 3.0 μm (120 μ "")) and obtain pieces in large series.

**FUNDALUM S.A.****Tandil, Buenos Aires***Microfusion company.*

-Annual productive capacity: 40 tons of net casting.

-Plant: 2000 m²**• HS CODE (NCM):**

-7325.10.00.0000 / Articles of cast iron, iron or steel. Other molded articles of cast iron or steel.

-8431.43.90.900F / Others.



HANDCAT S.A.



General maintenance of refinery and petrochemical plant reactors



In an industrial scenario that requires precision, safety and efficiency, the unloading and loading of reactors in a nitrogen atmosphere has become a fundamental process in the chemical and petrochemical sector globally. In this context, the company Handcat S.A. is an undisputed benchmark in the execution of these careful operations, standing out for its operational excellence, track record and its commitment to quality, safety and innovation in each of its projects.

The company participated in two instances of a financing program granted by the Argentine government. Lucila Albisu, Management Technologies advisor at the National Institute of Industrial Technology (INTI), explained that, to ensure approval, the company requested assistance from the Institute for the detailed development of the projects. In the first case, financing was arranged to acquire specialized equipment for unloading catalysts using a pneumatic transport system in a closed nitrogen cycle. Subsequently, financing was required for the manufacture of similar equipment assembled in Argentina. To this end, the Equipment and Component Validation department of the INTI Central region provided advice on reverse engineering and adaptation of the equipment.

Among its relevant innovations, a suction and filtering system stands out that effectively eliminates pollution in a catalyst.

In another order, Juan Pablo Fernández, Productivity Improvement advisor, pointed out the implementation of a training plan to train the company's operators in principles of continuous improvement, with a focus on management technologies, reduction of the 7 productivity losses and 5S methodology. This service is differentiated by its precision and focus on security.

In both cases, INTI played an active role in the execution of the financing program, from the initial validation of the projects to continuous advice, monitoring and successful closure of the projects.

For his part, Pablo Polo, member of the Quality Management Department of the Cuyo region of INTI, explained that advice was provided, and a program was designed for the firm to work based on the management system audited by YPF, based on the requirements of the ISO 9001 standard.

“The assistance and support of INTI were key to the success of the company. It has allowed us to achieve a deep understanding of the needs during the development of projects to obtain financing”, said Emilio Vanin, company manager.

Through a joint venture with Hydroprocessing Associates (HPA), Handcat offers the dense reactor loading service in Latin America under the Hidropac Dense Loading Technology license. **The firm has an outstanding export history, mainly to Uruguay. It is currently seeking to expand its presence in Latin America, with a particular interest in the markets of Chile, Colombia, and Guyana, based on logistical and geographical advantages.**

The company manager reflects on the continued commitment to excellence and the establishment of quality standards recognized both nationally and internationally. The meticulous focus on risk management and implementation of security protocols has built Handcat S.A.'s reputation, as a trusted and respected partner in the industry, capable of providing solutions tailored to every challenge.





HANDCAT S.A.

Luján de Cuyo, Mendoza

Company specialized in the general maintenance of reactors in refinery and petrochemical plants.

-Annual productive capacity: 20 reactors.

-Floor: 600 m².

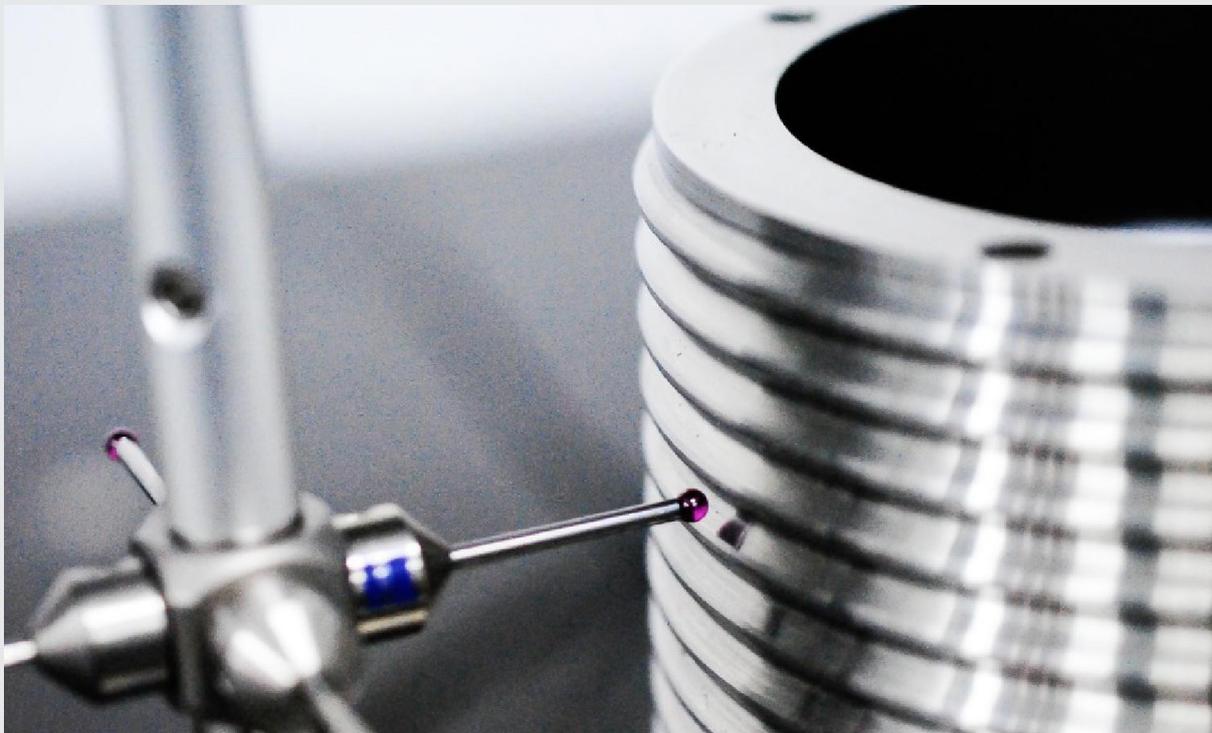
• HS CODE (NCM):

-S01 / Maintenance and repairs.





International Cooperation

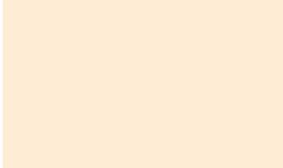


In July 2022, the Instituto Nacional de Tecnología Industrial (INTI) and the American Petroleum Institute (API), in collaboration with the International Association of Oil and Gas Producers (IOGP), signed a Memorandum of Understanding. The main objective of this strategic alliance is to strengthen cooperation and work on the adoption of standards and good practices in the industry, thus promoting safety, efficiency, and operational and environmental sustainability.

INTI has been recognized by API since 1976 as one of the seven laboratories worldwide for the certification of reference standard calibers, essential for the oil industry. This partnership has allowed INTI to expand its reach, offering certification services in Argentina and exporting them to other countries, consolidating its position in the global industry. INTI's commitment to excellence and quality in the oil and gas sector is reflected in the

concrete actions carried out within the framework of the Memorandum. During 2023, three INTI professionals received training from API instructors in the API Spec Q1 and Q2 standards, thus strengthening their knowledge and skills to improve processes and products in the sector. This initiative not only promotes good practices, but also responds to the requirements demanded by operators in the industry, contributing to the growth and competitiveness of Argentine companies in the global market.





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