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INNOVATIVE PRODUCTION PROCESSES

THE VALUE OF SERVICE: CLOSER TO THE CLIENT

THE TECHNOLOGICAL REVOLUTION OF THE SMART APP

OUR DEALERS, BEHIND THE SCENES OF MILTRA





Fassi cranes: loading performances



Fassi SmartApp: be smart

Now your crane interacts at a single touch. Fassi is the first company in the hoisting sector to combine the intelligent use of boom cranes with the use of the latest-generation smartphones. Fassi SmartApp is a veritable integrated system for real-time data collection and reading, capable of carrying out remote diagnostics of crane operation. A must-have system to take full advantage of the capabilities offered by your crane that allows you to optimise the crane maintenance schedule thanks to the utilisation statistics.



Thank you Luigi

Staying on top and consolidating your market leadership over time means never being satisfied. It means scrutinizing the competitive setting with the eye of someone who always looks beyond the horizon. Today our eyes see a world that others still cannot imagine. It is a typical trait of our culture devoted to innovation, an element written in our DNA.

This is why we are always ready to face new challenges. We rely on our consolidated heritage of widespread knowledge to build development projects and take advantage of new potential, embracing new market opportunities before others. We pursue our path of innovation by putting our customers first. Because we know how to listen and understand them, we know how to really put ourselves in the shoes of those involved in the world of cranes every day. This allows us to be considered a reliable partner who knows how to expand and develop its product range, supporting customers with a service geared towards maximum efficiency and the satisfaction of new and continuously growing needs. Over the years we have built a true value chain that originates from the head office, and continues through our international distribution network, reaching all the way to our smallest dealers. All of them are "no compromise" ambassadors of the Fassi brand. This is why we continuously work to keep up-to-date, to be technically prepared and to make the structural investments that guarantee the stability of our network. We do this thinking that staying by the customer's side means giving value to relationships through knowledge, but also by focusing on quality and constant service.

Luigi Porta, who was one of us, understood this well. Luigi passed away on last 19 April, but his managerial culture and deep dedication to the customer will always remain in Fassi's DNA. Our sales manager was the symbol of our philosophy because he was the man who, present every day in the field, put our guiding principles into action.

He joined Fassi more than 35 years ago, starting with the most menial tasks in the commercial division, and always distinguished himself for his dedication and desire for continuous improvement, gradually gaining positions of greater responsibility. His knowledge of the entire business supply chain was an asset that allowed him to guide our network more efficiently, when he took the helm. His work and commitment have allowed us to write the most important pages of our company's history, strengthening our culture of customer service. But more than our sales manager, he was a real man, a faithful travel companion on our long entrepreneurial journey.

Our thoughts go out to his entire family, especially to his son Simone, who is with us every day as he chose to follow his father's path in the world of Fassi. Together we will strive to honour the memory of Luigi, continuing along the road that we shared and built together.

Ciao Luigi. Thank you.

SPECIAL INNOVATIVE PRODUCTION PROCESSES

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Automation, the winning choice

Building on its natural inclination for innovation, in the last few years the Fassi group has chosen to make significant investments in the automation of production processes. These new "robots" allow the company to obtain more reliable results, to optimise the contribution of human resources, to achieve the best price-quality relationship and much more

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Carmo and Ciesse

SPECIAL SERVICE INNOVATIONS

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Fassi, a high-quality partner

A high surplus-valued service and a continuous pursuit of innovation, these are the foundations of the world of Fassi, the basis that allowed this company to be a leader in its field. Avant-garde solutions that are always a step ahead to satisfy the needs of customers

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Now your crane interacts at a single touch. Fassi is the first company in the hoisting sector to combine the intelligent use of boom cranes with the use of the latest-generation smartphones.

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The new F1950 in action in Switzerland

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Innovation is an essential part of Fassi-making up its DNA and representing the guiding philosophy at the basis of the challenge and the path pursued from the very beginning by the company, a world leader in the production of hydraulic cranes. This word can have many meanings, taking on many facets based on the industry and activity it is applied to: from products to processes, all the

way to service. In terms of production processes, following these guidelines and always putting innovation first, at the core of its work method, the Fassi Group has made an important choice that goes against the tide in comparison with other competitors: making significant investments in automation over the years. Unlike others who have decided to relocate their production abroad to

countries with much lower labour costs, Fassi has invested several million Euros in new production systems. This strategy has allowed the Group to improve the quality of its products, optimise its resources and achieve a better price-quality relationship. The new systems ensure precise, constant and guaranteed results that only automation can deliver. Whereas before there were operators





WELDING SYSTEM WITH AN AUTOMATED FMS WAREHOUSE





The new welding plant is an innovative system made with avant-garde technology that, without any supervision, performs every welding process that goes into making a piece in complete autonomy. Made up by four welding robots, an automated warehouse and a new brushing and nut welding robot, this system directly generates finished pieces, starting from unfinished components. The warehouse is positioned on two sides with a height of 4 levels. A shuttle runs along the tracks and takes pieces from the right and the left of the warehouse. Through a series of specially designed jigs the piece arrives at the pointing station where it is mounted on pallets and inserted into the welding box. Each pallet corresponds to a type of product that the system recognises through a series of codes.

The new systems ensure precise, constant and guaranteed results that only automation can deliver. This also means being more competitive

that welded, bent and cut one piece after another, day after day, in a repetitive and oftentimes alienating way, today these tasks are performed by machines. With this significant initial investment, taking advantage of a wide range of economies of scale, the company based in Albino is able to bring its products to the market at highly competitive prices without compromising on the quality that has always represented Fassi's style. Although innovation has brought significant surplus value, for Fassi human capital continues to be an indispensable resource. For the company automation means giving more value to its employees that, thanks to this policy, perform many activities in which "man" makes the difference. For quite some time the Group has been investing in automation using a variety of automated systems.

In particular, in recent years the plant has been equipped with a welding system with an automated warehouse, a cutting laser, a robotic system for welding extension booms, a welding system of hexagonal beams equipped with an automated warehouse and finally, a welding system for supplementary crossbeams.



THE NEW WELDING AND BRUSHING ROBOT

In early 2012 a robot was added to the welding system that, in addition to welding nuts, also brushes the piece to eliminate all of the burrs created by the 4 welding robots. The mechanical welding used by these machines causes calamine to detach. Although this process is difficult for the human eye to detect, it could constitute a problem later during the painting process. Thanks to this new system equipped with a wire brush, these imperfections are eliminated. Furthermore, by using the circulating current welding system, the level of the nut welding quality is increased and

improves the appearance of the crane. The significant surplus value of this system is flexibility. In the past, it took at least 1 or 2 hours to position this type of product before it moved onto the testing phase followed by the welding process that, at this point, had to be carried out on a significant number of pieces to justify the set-up time (at least 10-12 pieces), creating major problems for the management of the warehouse. Thanks to this new machine it is possible to make up to 90 different types of products in one day without any set-up time.





6000 WATT LASER CUTTER

This new 6000 Watt laser is designed to cut the details of the steel sheets the crane is made with. Equipped with an exceptional technology, thanks to its high power it reaches twice the speeds of previous models, reaching up to 25 mm in width. Just consider that compared to Fassi's first 3500 Watt laser, the second 4500 Watt model was already twice as fast and consequently doubled the cutting precision. The 6000 Watts of the last model introduced into the company has considerably improved the quality of the final result, especially at greater widths.







Consisting of a robot manipulator and a welding robot, this system differs from traditional robot islands since it does not need to be loaded or unloaded by an operator. The manipulator robot, with a load capacity of 700 kg, takes the extension boom from a container and brings it directly to the second robot that welds it. There are many advantages, besides not having to be supervised during operation, the machine has a full production capacity of

24 hours allowing it to operate in complete autonomy in the evening or at night. It also has the advantage that without any tooling, the robot can manipulate from the smallest to the largest piece without interrupting work but only recalling the programme the piece belongs to. The welding quality is far superior to that performed manually, considering that the piece is always in an optimal position in addition to having all of the points accessible.

WELDING SYSTEM FOR HEXAGONAL BEAMS

Pierce, bend and weld, all with a single system with no need for supervision, this is the new system for making hexagonal pieces. The entire structure is made up by various warehouses that can store up to 300 beams based on their size. From shaped sheet metal, robots put the pieces onto the work centres for the various machining processes, consequently they will be automatically folded with a press and then

brought into the warehouses of the welding system to be finished. This entire process is performed without any operator, since the machines are equipped with laser sensors for controlling the bending and welding process to ensure they are carried out correctly. The warehouses even allow the system to operate at night, without it having to be loaded as during the day.



CARMO s.r.I . Nembro (BG)

Carmo's carpentry is a great source of pride for the Group in terms of automation. This company performs two distinct functions. The first is to supply all the crane structural parts to the Group's three assembly plants in Nembro, Comenduno and Albino, and the second is to assemble the cranes classified as light and semi-light, from beginning to end.

Surfaceareaoccupied:29000m²-12000m²ofwhicharecovered Employees: 99



Pietro Bonvicini, General Manager of CARMO

Carpenteria CIESSE Carmagnola (RE)

Ciesse, founded as a family-owned business by Lauro Calzolari, is currently part of the Fassi Group. This leading industry provides all of the mounted carpentry for the outrigger supports and extension booms destined for the companies in the group. With an aptitude to automation since the very beginning and armed with many years of experience, all of the systems it uses for producing Fassi parts are unique, one-of-a-kind machines they build themselves, and they also work with external companies for their construction.

Surfaceareaoccupied:28000m²-8000m²ofwhicharecovered Employees: 65



Alberto Calzolari (right), General Manager of CIESSE Carpentry, with his father Lauro Calzolari, the company founder

WELDING SYSTEM FOR CROSSBEAMS AND OUTRIGGER SUPPORTS

The system is made up by a robot manipulator with a special gripper and by a welding robot. Furthermore, the island is made up by hydraulic equipment for the assembly of loose components, located in special containers. Thanks to its considerable flexibility, the system can even produce 60 units, one different from the other, in sequence since it is equipped with a laser reader

for following the joint and sensors for recognising the piece. The operations it performs include the drilling of all the loose parts that will later be welded together, without being set-up by an operator, and switching from one type of piece to another in no time. The major advantage is the elimination of the previous 4 manual work phases, reducing them to a single automated process.





Fassi has always been synonymous with high surplus-valued services. A company that has made quality and innovation the foundation of its work, a continuously evolving world, aimed at the future, always a step ahead of its competitors. Knowing it can count on an extensive, professionally skilled service network, willing to understand the requests and needs of those who make cranes their faithful and indispensable collaborator is one of the many factors that have made Fassi the undisputed leader in its field. Choosing Fassi means making an investment in quality, destined to create

Those who collaborate with Fassi know that learning is a never-ending process. The technologies and systems developed by the company require ongoing training. The sharing of experiences and motivated interaction between colleagues also allows Fassi's partners to more efficiently plan the characteristics of their service



both short and

widest range of cranes and being continuously on the cuttingedge of technology, means that Fassi also offers solutions for gaining access to an heritage of know-how that is first and

with topics and issues, with an articulated

and complete layout

foremost "informative". The news and specifications regarding Fassi's products and technologies encourage the continuous updating of a special database, useful for the work of the company's technical and sales partners, which, with its breadth of rich information, is unmatched in the industry. A wealth of know-how that immediately becomes the foundation and the opportunity to enrich the service, to the benefit of crane users, with precise, clear and decisive answers. Fassi has studied how to make this resource, which grows day after day, easy to access. This is why it is equipped with and offers its clients advanced tools even on-line, a veritable universe of technological knowledge on cranes that is always available from the terminal. A reference point for daily updates, the web site www.fassitech.com is organised with a simple and easy to understand menu rich with topics and themes, arranged in an articulate and complete format. Through the site you

can access the entire catalogue of
Fassi spare parts, information
about Fassi programmes and
software and the technical
and commercial product
materials. One section is
dedicated to the latest
and most interesting
news about the
lifting market
and other
focuses on

developments in the industry.

Reaching the top, being a leader in its field doesn't mean that Fassi is resting on its laurels. On the contrary, the company has reached this result by always looking beyond and even today, with an understanding that things can change at any moment, the company continues to strive for the innovation that is written in its genetic code. Continuously new challenges, backed by an heritage of diverse knowledge, the result of ongoing developments and continuous exchanges allow Fassi to more easily grasp market opportunities. The experience gained through the choices made, always staying alert to detect the competitor's weaknesses and to find an advantage, is a clear signal that Fassi's international commercial organization is capable of interacting with the market on a daily basis, with the support of a company that continues to expand their range and to provide valid tools to those who meet with clients every day, in any continent. The know-how and stability of the distribution network, the value of relationships, the consistency and quality of the services offered, the condition of reciprocal advantage that must exist between the producer, distributor, dealer and client are the finest points of Fassi' expertise.

Fassi's international commercial organization is capable of interacting with the market on a daily basis, with the support of a company that continues to expand their range and to provide valid tools to those who meet with clients every day, in any continent

FASSITECH.COM, INNOVATION JUST A CLICK AWAY

The new version of the website has been enriched with information and services reserved mainly for commercial operators and technicians. Brochures of Fassi products and those of competitors, along with images, technical sheets, a comparison program, FIP and assistance are just some of the information contained in the site

A new website created and designed to combine several tools into a single interface. A unique and complete virtual archive where you can find and download every piece of information useful for all professionals, from sales and service assistants to technicians. The fassitech.com website has changed its look in order to provide additional services and surplus value to users. The new version

site is divided into four main sections, some of which were already found in the previous version and others that have been added for the first time: Fassi Cat, the commercial area, the technical area and the applications area. While the first area is accessible to everyone, the others can only be viewed with a different login and password, depending on the authorizations issued by the relevant offices. For the commercial and technical

areas.

the Fassi Installation Program - FIP, users will need to request new access codes from the technical assistance office. As in the past, the site can be viewed in five different languages: Italian, English, Spanish, German and French. The main feature of the new version of the website, especially in the reserved area, is the the main menu, which is still visible since it is positioned in the upper part of the interface. This will allow you to find in a quicker and more immediate way the tools Fassitech.com is equipped with. The first area, accessible to all users, is Fassi Cat, already included in the previous version. From here it is possible to view the spare parts catalogue, the functions of which have remained virtually unchanged but whose graphics have been adapted to the new version of fassitech. com. Once you've entered this section you can select the different components (crane models, cranes not included in the range, hydraulic extensions, supplementary crossbeams, winches and various options) and the respective machines.

passwords used up to today on the old

version of Fassitech.com will continue to be

valid. For the applications area and to use









LEAFLETS AND THEIR EDITIONS 01

PHOTOGALLERY 02



FASSITECH - COMMERCIAL AREA

The commercial area contains information regarding all Fassi products in the individual languages, the brochures, images, promotional items and takes a general look of the competitors, in addition to an efficient programme that compares the various crane models. It is divided into seven sub-sections:

Leaflets and their editions - Contains the commercial documentation of all Fassi-branded models. From this section users can see the editions of the individual brochures and download a Pdf version of the brochures.

Competitors leaflets - Contains the list of catalogues, which can be downloaded, from 17 competitors.

Photogallery - The photogallery can be consulted in two different ways: the first allows users to search for a crane model while the second allows the user to search by the brand of the vehicle the crane is installed on. The "Fassi Events" section includes an archive of photographs from tradeshows and events Fassi has taken part in.

Promotional items - More than thirty promotional items with their relative prices and availability are listed in a photographic catalogue.

104 Technicomm news - From here users can download the technical-commercial sheets in pdf format of the various crane devices and systems from the Fassi Group.

Comparison - Here you will enter the section featuring the programme for comparing cranes. The comparison of features allows the user to compare one model at a time from the Fassi range to those most similar from previously selected products. In order to use the application properly, the user must first select the producers and then the Fassi crane model. The direct comparison on the other hand allows the user to compare various Fassi crane models with any other model from any manufacturer.

Fassi Installation Program - The program for establishing and checking the stability of the crane set-up.

The first five areas are accessible to anyone with general access to the reserved area of fassitech.com while the latter two (Comparison and FIP) can each be consulted with the authorisation from the marketing office and upon the purchase of the user license issued by the technical assistance office.







TECHNICAL SHEETS 06











PROMOTIONAL ITEMS 03

TECHNICOMM NEWS 04

COMPARISON 05



FASSITECH - TECHNICAL AREA

The technical area is divided into three distinct sections, accessible to everyone who has general access to the reserved area of fassitech.com:

Technical info - Here you can find all the technical documentation you need

(manuals, calibration charts, tables, etc.) classified according to the crane model, the model of the hydraulic extensions, the systems, devices and versions of the crane.

06 Technical sheets - This is the archive

of load capacity plates and the technical sheets classified by type of sheet, crane model, crane version, hydraulic extensions and unit of measurement.

Software Update - With Fassi LIM software updates.

FASSITECH - APPLICATION AREAS

The Applications area gathers all of the necessary information about the assistance workshops, certificates of warranty, the cost of spare parts and claims. It can be accessed and used upon the release of an authorization issued by the technical assistance office.

07 Users - Contains the archive of the client records and of the set-up and assistance workshops. In this section every "Fassi" dealer can manage the personal areas, providing access to records specially dedicated to its distribution network.

08 Certification -This application is dedicated to the management of warrantee certificates. Even in this case the Fassi "dealer" can manage the personal areas, authorising users to consult or enter certificates into its distribution network.

09 ATP - The "Available To Promise" application advises users about the availability and costs of in-stock spare parts once their codes have been entered, allowing them to proceed in a completely automatic way once orders are entered, and to receive an immediate response.

10 Complains - This tool was created to allow users to enter and manage complaints, while continuously monitoring the updated status of the procedure.

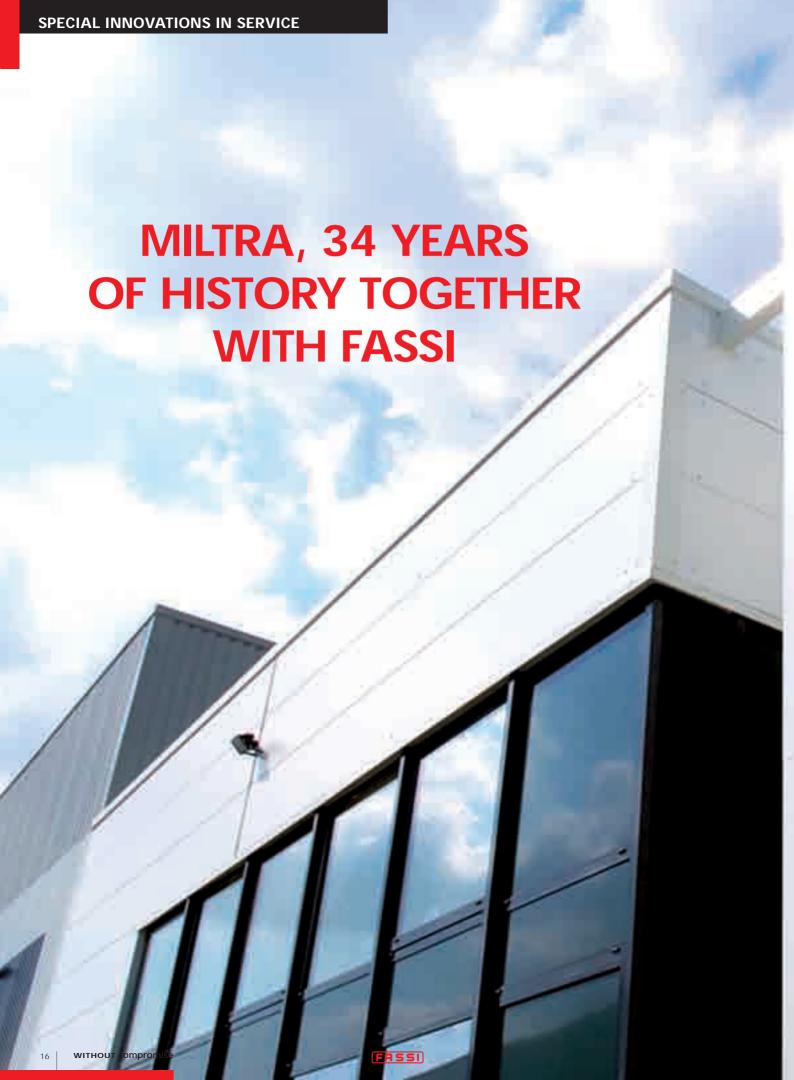








FASSI







Since its foundation Miltra has believed Fassi to be the ideal partner thanks to the ongoing and consistent dedication to innovation that has not only enabled the company to offer its dealers machinery that is always on the cutting edge, but also to provide a complete service

A partnership that began in the late seventies and grew on the wave of the innovations of the Fassi brand. A relationship that has made the French company Miltra and the Fassi Group, a world leader in automation, stronger than ever.

Miltra is the leading company on the French market for equipment installed on industrial vehicles for the movement and lifting of loads. Values such as dynamism, flexibility and competence have made it a point of reference in the field.

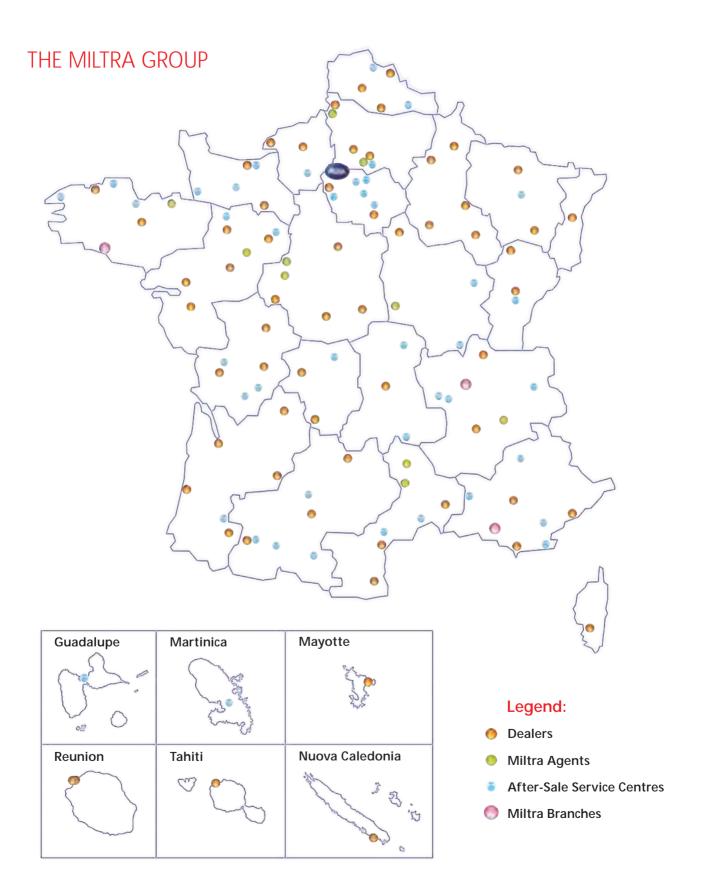
Since its foundation Miltra has believed Fassi to be the ideal partner thanks to the ongoing and consistent dedication to innovation that has not only enabled the company to offer its dealers machinery that is always on the cutting edge, but also to provide a complete, precise and on-time service in every situation, also through the use of cutting-edge technologies.

Today the French company offers its dealerships 46 models of Fassi cranes and has gone from an average of 200 cranes in the first ten years to 1000 over the last ten years. In this interview Miltra's owner, Mr Roger Boutonnet, tells us about his 34-year collaboration, his motivations, successes and expectations for the future.

How long have you been working with Fassi and how has the relationship evolved over the years?

We have been collaborating with Fassi since our company Miltra was founded in 1978. Over these 34 years we have gone from an average of 200 cranes in the first ten years to 1000 cranes in the last ten years.

How would you evaluate the increased range of commercial. technical and post-sales assistance services that the parent company has gradually developed over the years? The growth of the commercial offering efficiently responds to the market and must continue to evolve into products better geared for use on public projects. The technical offering is complete but must remain as simple as possible. The post-sales assistance has progressed through the



"Fassitech is an important resource, for us and our dealerships. This system is especially appreciated by those who are more savvy and knowledgeable about Information Technology. Other users and those looking for an immediate response can use the traditional method of simply contacting the company by telephone"





ongoing training and support provided by the dedicated sites, among which Fassitech. com stands out.

You are in fact Fassi "ambassadors" for the French market. What policies do you adopt in order to convey Fassi's philosophy of service to your customers?

From the very beginning our sales policy has been based on service and its proximity. A widespread and experienced sales network, able to transfer the value of the latest technologies adopted by Fassi cranes to the market.

What is your new approach to Fassitech, as an innovative platform for offering a series of important added-value services with a commercial and technical character online?

We use Fassitech quite a bit, which we also consider to be a resource. It is definitely an

extremely useful tool for professionals since it allows you to have, in a single platform, all of the information that is necessary for both technicians and salespeople.

Thanks to Fassitech quality and efficiency are added to the service. In spite of this, for certain more traditional clients, it is easier to call the Miltra offices directly to get answers to their questions.

What do you think will be the impact of this new platform on your dealers?

Those who are more savvy and knowledgeable about Information Technology will take advantage of Fassitech and they will be excited about it since it represents a real added value for the service. Others, however, will continue to call the company as they did in the past. Our offices are always ready to respond to the client's every need.



From your experience in the field, how do you think your dealers perceive your efforts in terms of innovation and service developed by the parent company?

The efforts of the parent company have been well received and are considered to be indispensable. Having a supplier that is always on the cutting-edge and aware of the importance of continuously investing in innovation is undoubtedly an added value for the entire chain, for us and our dealers.

Thanks to Fassi's commitment all of us are able to offer unique and excellent solutions to the market.

Consequently, do you believe that the client perceives the value of the work performed by the entire Fassi organization (parent company + dealer)?

It's difficult to give a general answer, it depends on the client. The larger ones are fully aware of it while smaller clients may not notice this aspect as much.

The Fassi end customer has high expectations for the product. Do you think that today's market perceives investments made in the service realm as a new add-value feature?

In today's market, investments and efforts made in the service realm are extremely important for the end customer. The less time the crane is at a standstill, the better.

In order to be competitive and efficient in the industry, vehicles must spend less time as possible at a standstill and you must have reliable products and, at the same time, offer rapid assistance services.

The Miltra Group

With a reputation based on the client's complete satisfaction, for over thirty years MILTRA has been the leading company in the French market for equipment installed on industrial vehicles dedicated to the movement and lifting of loads. Flexibility, discipline, a dynamic approach and competence have made the company the preferred partner of even the most demanding customers. Thanks to its knowledge of the market, it offers a range of products that are suitable for a variety of applications. But that's not all. Miltra also offers personalized and original technical solutions. The company's dynamism and efficiency have allowed the group to grow and today, in addition to its facility in St Ouen l'Aumone, located 35 km from Paris, it also has five branches and a network of 50 dealers, 15 official dealers and 45 after-sale service centres.

"The service that could make a difference in the immediate future is the possibility to perform long-distance maintenance. This would offer two main advantages: limit the costs of the intervention and solve problems more quickly"

The Fassi spirit is marked by a continuous drive towards new horizons, meaning the innovation of service is an ongoing process. What kind of growth opportunities do you imagine could be created in the field of new services?

The service that could make a difference in the immediate future is the possibility to perform long-distance maintenance. This would offer two main advantages: limit the costs of the intervention and solve problems more quickly.



THE FASSI SMARTAPP BE SMART

Now your crane interacts at a single touch. Fassi is the first company in the hoisting sector to combine the intelligent use of boom cranes with the use of the latest-generation smartphones.

One of the main innovation guidelines followed by the Italian company based in Albino includes the development of advanced man-machine interaction systems, known as Human Machine Interface (HMI). Its importance lies in the fact that, nowadays, the systems available onboard the cranes, often connected to radio controls, contain plenty of information, some of it requiring great attention by the operator when it comes to fast and accurate machine operation. Even more so, in the near future we will be witnessing a further increase in the number of available functions tied to new systems, for which acceptance by the operator will depend mostly on the operator's "familiarity" with the feedback received.

Another important aspect is the tendency of more and more information that needs to be given to the operators so that they can have proper control over the machine. These considerations have led to the development of Fassi Human Machine Interface, aimed at making cranes as "easy to use" and "safe to use" as possible, maximizing system efficiency for quick information reading and interpretation, also in view of future growth in managing the set of available systems.

This principle represents the origin of "Fassi SmartApp", a revolutionary system patented at the international level thanks to which a crane can "communicate" with a latest-generation smartphone.

The most interesting characteristics of the "Fassi SmartApp" include the possibility to use remote assistance through Black Box diagnostics. As a whole, it is much more than a simple "APP" for smartphones, because it also allows users to take advantage of remote assistance through the Black Box diagnosis.

As a whole, it is much more than a simple "APP" for smartphones, since it can also be used for the following operations: setting the parameters of the radio control levers, quickly analysing and evaluating the crane utilization statistics, consulting the Fassi Geo Locator in order to contact the Fassi assistance centres quickly and dialogue with the crane, using the quicker and more spectacular graph display to read data instead of the traditional radio control.

The Human Machine Interface (HMI) Philosophy led to the Fassi SmartApp, a revolutionary internationally patented system, able to communicate with its cranes with the latest generation of smartphones. All this without ever altering the Fassi product, which evolves by seizing new opportunities through technology, while maintaining its typical features of reliability and efficiency, which the brand is synonymous with, perfectly intact







Fassi Smartapp: be smart

Now your crane interacts with a single touch (1). Fassi is the first company in the hoisting sector to combine the intelligent use of boom cranes with the use of the latest-generation smartphones. Fassi SmartApp is a veritable integrated system for real-time data collection and reading, capable of carrying out remote diagnostics of crane operation. A must-have system to take full advantage of the capabilities offered by your crane that allows you to optimise the crane maintenance schedule thanks to the utilisation statistics.



Analyse, set, adjust

Now your crane offers you more personalised use (2). The Radio Remote Control section clearly and instantly displays the reaction thresholds of the radio remote control levers used with your crane. By adjusting the response of these control levers, you can set the movement of the main machine booms (Main, secondary, Jib, winch). To do this, the working curves of the individual crane components are immediately set: just enter a few pieces of data and the machine is ready to carry out your commands, under your total control.

The first in the world sold in Norway on a marine crane

Today the Smartapp is already a reality with a score of prototypes in action, the first one in the world was sold in Norway, for a marine crane installation on a boat. This project dates far back - explains Fassi's technical director Rossano Ceresoli - from an idea that goes back about 6 years ago, when there weren't smartphones but handheld devices. At the time certain preconditions were still missing, particularly those related to connectivity and the fact that the use of handheld devices was still too "specialized". Today the advent of smartphones has allowed us to expand the vision of this project, not only for professionals in the field but also for the final users, particularly in reference to the

connection potential and the Android systems for developing applications in their native environment. The concept was to combine a device used on a daily basis to the functional use of the crane through a rapid interpretation and reading of information. The phone communicates via Bluetooth with the crane, the data is downloaded and can be sent via a web connection to the Fassi assistance centre. This is a project that emphasizes the innovative continuity of our philosophy. Nothing is left to chance, nothing is put in the background and everything that can contribute to an authentic innovation through the satisfaction of new needs is put into practice. All this without ever altering the Fassi product, which evolves by seizing new opportunities through technology, while perfectly preserving the typical characteristics of reliability and efficiency that the brand is known for.



This system was created out of the continuous innovative drive of Fassi's R&D department, through its involvement in a Spin-off with one of the most important European universities. Effectiveness and quick use were the main objectives of the project





Knowledge is power

Now you can use your crane in the best way possible (3). Having more information means improving crane use so that you can obtain the best performances for a longer time period, and also leads to savings. Quickly analysing and evaluating crane operation statistics helps you avoid repairs caused by unforeseen overloads of the main joints, and this also allows you to avoid unscheduled maintenance costs. System efficiency is thus maximised: you have more control over operations and are better aware of how the crane behaves during all work phases.



Black Box: diagnostics at your fingertips

Now you can easily help your crane (4). The Black Box does not only store the jobs carried out: it is a bona fide communication tool that can be used to contact the Fassi service network. Fassi SmartApp offers you a remote diagnostics procedure. It saves data and any alarms in a file that you can then send to Fassi's service through your cell phone e-mail* service.

* To send directly through your smartphone, a data transfer subscription with your phone provider is required.



Assistance is always nearby

Now your crane leads you to safe hands (5). In case the crane suddenly stops working, the "Geo-locator" function helps you find the Fassi service centres nearest to your worksite. Identify the service centre closest to you so that you can save costs during machinery downtime. You can thus easily contact the Fassi service centre which is equipped to read the file stored on the Black Box of your crane and can solve your problems.



An amazing job

Now you can understand your crane immediately (6). Thanks to the user-friendly menu, you have easy and convenient access to the different sections of Fassi SmartApp. With just a few touches, you can go from the collection of operating data, also shown in easy and quick to read graphs, to the section for adjustment of crane controls, which can be set according to your operating preferences. You can also show certain crane functions, such as On/Off, Rpm + and –, Xp and others still, on the large smartphone display.



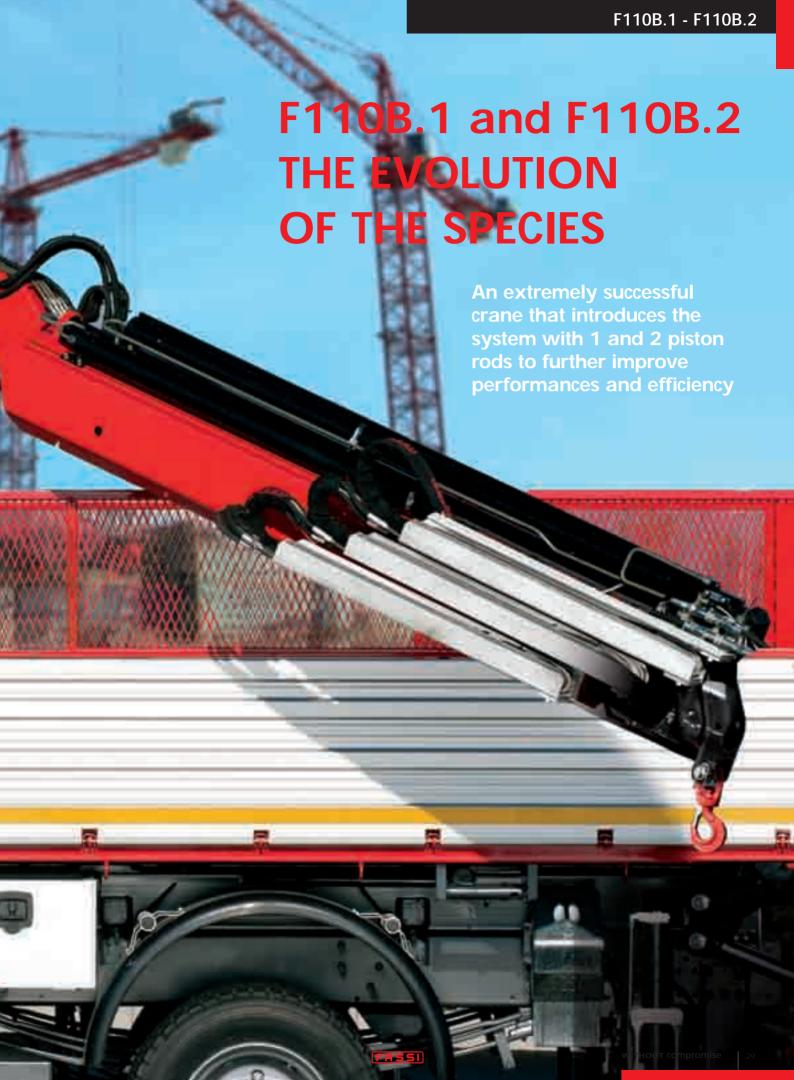
Fassi: be smart

Now your crane is more and more how you want it to be (7). This system was created out of the continuous innovative drive of the Fassi R&D department, through its involvement in a Spin-off with one of the most important European universities. Effectiveness and quick use were the main objectives of the project. Hence, thanks to Fassi's innovative capabilities, a state-of-the-art and completely reliable system was developed capable of taking advantage of the technological opportunities provided by smartphones based on the Android system. A technological frontier full of advantages for you, your work and your investments.

Fassi SmartApp: the advantages

- Remote diagnostics system to communicate with Fassi service centres
- Quick identification of the nearest Fassi service centres
- Adjustment of radio control levers response
- Personalised control over crane use
- Constant monitoring of crane operation data
- Utilisation statistics of main booms
- Easy and handy reading interface of all information
- Availability of information for optimised maintenance







New solutions for a highly successful crane on the market

The main innovations in this new project complete the offer made by Fassi in this particular crane segment, with the customer being given the chance to configure the machine for all its possible functions (except continuous rotation). Basically, the introduction of a single or double piston rod mechanism allows the customer to take advantage of the new features available on this model, and to choose the best solution based on the type of work that needs to be done.

The F110B is a light-duty crane, in the medium segment of Fassi's small range. It is a reference crane in the 11 ton/m sector, with significant sales volumes. The project underscores Fassi's aim to launch this range on the market with three types of geometric development: ".2" ".1" ".0" (2, 1 or 0 piston rods) for all types of jobs.. In fact, the different solutions give the product "scalable" functions, starting from ".0", for typical use with hydraulic tools, up to ".2", which features a lifting movement suited to various kinds of complex operations. The new F110B cranes also offer better performances even from a weight standpoint (as they are lighter), yet maintain the same work characteristics. Thanks to its five outrigger booms, higher outreach performances are achieved (from use with the bucket, to the lifting of loads with a pulley).

General characteristics

BASE – The base and the lower part of the fused column are made of cast iron for an ideal distribution of stress and to ensure higher resistance. The absence of welding makes this crane exceptionally resistant to long-term wear.

SLIDING BLOCKS - The guide rails of the extension booms are mounted with a "forced" assembly to reduce the vertical and side clearance, ensuring greater durability. The material of the sliding block is special to allow for easy gliding that requires only a small about of greasing.

TANK - The plastic tank is particularly resistant to shock and the corrosive effect of atmospheric conditions.

THE LUBRICATION SYSTEM - The centralized lubrication system of the base guarantees easy access throughout maintenance and inspection operations.

OUTRIGGER SUPPORTS - The rotating and manual extension outrigger supports are also available in the "XL or XXL" version. A hydraulic extension is also available for the standard and XL version.

VERSION C - This crane version has a shorter secondary arm, to allow a greater height of under-hook lifting. Offers the possibility to lift especially bulky and heavy loads vertically, near the column of the crane. Equipped with an automatic hooking system for positioning the extension booms in a transport position with the crane folded up behind the cabin.

The advantages of the "PROLINK" system

On the newly designed Fassi cranes equipped with the linkage mechanism, such as the F110B.1 and F110B.2 models, the "Prolink" (Progressive Link) system was introduced for both the secondary crane arm and for the matching hydraulic extensions.

Thanks to a longer lifting jack and the linkage mechanism of the dedicated articulation, the crane's secondary boom, based on the model, increases the working angle above the horizontal line for a quantity of degrees ranging between 10 and 15 while that of the hydraulic extensions, once again based on the models, increases between 10 and 20 degrees.

The "Prolink" system was created to compensation for the flexion of the hydraulic extension booms caused by the loads, allowing the user to maintain the height of the hook in a continuous horizontal position and to position the loads inside the openings at ground level or for movements inside low structures (industrial buildings).

Prolink Advantages for the operator

- Increases the crane's operating functions by making it possible or more simple to position the loads inside openings at ground level or for movement inside low structures, where the main boom, due to limited vertical space, cannot be sufficiently opened.
- The secure management of the system thanks to the automatic safety devices that manage to maximize vertical movement.





Piston rod mechanism Advantages for the operator

- Superior performance of the crane in terms of both dynamic lifting and the static capacity on lifting curves.
- Plate configurations in the horizontal position, without the angulations of the main boom.
- Maintains the plate lifting capacity even with the "Prolink" function activated.

The advantages of the piston rod mechanism

General notes about the linkage and fork system applied to the crane articulations:

In the past, the adoption of a piston rod mechanism and fork between the crane's lifting arms was related to the geometric question of how the secondary arm folded beneath the main one to allow it to close within the machine's contour. Today the use of the specially designed, developed and constructed piston rod mechanism allows the crane to reach and maintain a lifting moment that remains constant for the entire span described by the lever arm thanks to a steady distance between the centre of the articulation pin and the centre of the pin of the lifting ram. In cranes without a piston rod mechanism, the lever arm changes in relation to the change in the angulations of the booms.

In particular, by analysing the loading curves you will see that:

- The loading curves of a crane with a piston rod mechanism offer better performances, keeping the crane perpendicular to the horizontal load detachment point load and the maximum load passing above the horizontal axis is definitely greater than that which can be moved with a crane without a piston rod mechanism.
- The loading curves of the crane without a piston rod mechanism, influenced by the variation of the lever arm compared to the lifting angle, retract towards the column.

A well-designed piston rod mechanism in terms of its kinematic mechanism also allows for the development of crane capacity plates with standard configurations that do not require any angulations of the main boom, thereby taking advantage of the maximum horizontal outreach, with the possibility to lift loads from the ground up to the maximum vertical height.

Characteristics of the piston rod mechanism system:

- Use of fusions for piston rod mechanisms and forks.
- Perfect kinematic mechanism for obtaining load capacity plates with the standard configuration in the horizontal position (0°), thereby taking advantage of the maximum outreach, instead of requiring the angulation of the main boom.
- In symbiosis with the electronic limit control (which requires the pressure induced on all of the lifting rams to be monitored and checked) the maximum consistency of the lifting moment is obtained.
- Even with the Prolink system, the maximum standard performance is guaranteed for cranes with a plate configuration at 0°.
- The advantages are demonstrated throughout the wide range of possible load configurations.









TECHNICAL SPECIFICATIONS

The new F110B.1:

The versions

- 1. version .21 with 1 hydraulic extension ram (outreach 5.7 metres) Lifting capacity: 10 t/m weight: 1130 kg
- 2. version .22 with 2 hydraulic extension rams (outreach 7.75 metres) Lifting capacity: 9.7 t/m weight: 1240 kg
- 3. version .23 with 3 hydraulic extension rams (outreach 9.85 metres) Lifting capacity: 9.4 t/m weight: 1345 kg
- 4. version .24 with 4 hydraulic extension rams (outreach 12.0 metres)
 Lifting capacity: 9.2 t/m weight: 1440 kg
- 5. version .25 with 5 hydraulic extension rams (outreach 14.1 metres) Lifting capacity: 8.9 t/m weight: 1530 kg

Technical characteristics

- rack and pinion rotation
- · base and lower part of the column fused
- sliding blocks of the extension booms with "forced" assembly
- hydraulic extension rams with the MPES extension system
- boom connection system with dual extension cylinders and dual linkages
- rotating and manual extension outriggers also available in "XL and XXL" version
- central base with lubrication system

Electronic devices

Fassi Electronic Control System (FX)

The new F110B.2:

The versions

- 1. version .21 with 1 hydraulic extension ram (outreach 5.7 metres) Lifting capacity: 10 t/m weight: 1150 kg
- 2. version .22 with 2 hydraulic extension rams (outreach 7.75 metres) Lifting capacity: 9.7 t/m weight: 1260 kg
- 3. version .23 with 3 hydraulic extension rams (outreach 9.85 metres) Lifting capacity: 9.4 t/m weight: 1365 kg
- 4. version .24 with 4 hydraulic extension rams (outreach 12.0 metres)
 Lifting capacity: 9.2 t/m weight: 1460 kg
- 5. version .25 with 5 hydraulic extension rams (outreach 14.1 metres) Lifting capacity: 8.9 t/m weight: 1550 kg

Technical characteristics

- rack and pinion rotation
- base and lower part of the column fused
- sliding blocks of the extension booms with "forced" assembly
- hydraulic extension rams with the MPES extension system
- boom connection system with dual extension cylinders and dual linkages
- rotating and manual extension outriggers also available in "XL and XXL" version
- central base with lubrication system

Electronic devices

Fassi Electronic Control System (FX)





Choosing Fassi means having the most technology has to offer and high standards even in additional parts. Thanks to a highly specialized knowhow in the production of cranes, Fassi is able to produce supplementary crossbeams carefully designed down to the smallest detail and the most advanced ones offered on the market, which are completely integrated with the FSC system. The group offers a complete package, finding the most suitable solution for the clients by working alongside them and offering a wide range of choices. Fassi internally designs and produces an entire series of supplementary crossbeams that, in line with the set-up, ensure greater stability in every condition. When the clients place an order for a hydraulic crane, they must calculate stability in order to decide whether or not they need to purchase

supplementary crossbeams.

Oftentimes particular environmental and working conditions make an additional support necessary, two extra "feet" to add to the vehicle.

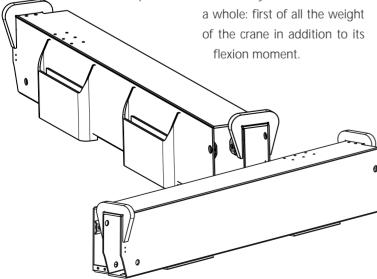
FSC technology, exclusively used in all Fassi cranes, is applied to the supplementary crossbeams just as in all of the electronic systems.

From transducers to signals, the crane and crossbeams work together flawlessly. This explains why it is not recommended to combine crossbeams made by other manufacturers with a Fassi crane, which would lose the added value of the FSC and diminish this continuity that not only guarantees greater safety but also better performance. Each crossbeam is only compatible with a certain number of cranes. There are many factors that influence the stability of the machine as a whole: first of all the weight of the crane in addition to its flexion moment.









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Fassi Gru S.p.A. is hitting the track alongside one of the top teams in Europe. As of this year the company based in Albino is the official sponsor of vehicle number 3 of the MKR Technology team and in the 2012 European Formula Truck Championship.

An historic agreement that allows the world's leading company in the lifting industry to appear with its logo on the body of the MKR Technology truck, driven by Adam Lacko.

The agreement between the Mario Kress team that races with trucks powered with Renault engines and Fassi Gru S.p.A. also includes the supply of a Fassi crane F195A.0.23

that the MKR Technology team uses to set up the paddock and to move the bulky and heavy parts of the race vehicles. The Fassi logo will accompany Adam Lacko throughout the entire championship season which began last 12th May in Istanbul, Turkey and will conclude on 14th October with the 24-hour race of the trucks on the LaMans circuit.

To follow the results, events and protagonists and to discover the interesting facts about the protagonist team of the European Truck Racing Championship, Fassi has created its own Facebook profile (www.facebook.com/gofassi) continuously updated with images, news and summaries of the ten races, while carefully tracking truck number 3 of MKR



Technology. During the race in Misano Adriatico held on 19th and 20th May this year, Fassi met the fans in the paddock area directly in front of the MKR team and everyone the gave opportunity to test their cranes in a special 1000 m² area located inside paddock 3. Last season Adam Lacko, born in 1984, ranked 3rd overall in the championship, finishing in front of his teammates Markus Oestreich and Markus Bosinger. The driver began his racing career at the age of 8 with and go-karts, later passed on to grand touring vehicles then in 2002 to trucks. The maximum speed

allowed FIA by regulations in this category is 160 km/h. What is truly striking isn't the speed of the engines but their power: at 1400 rotations per minute they deliver a power of 6000 Nm (4400kW). This explains why in this championship the races are mostly won by breaking away from the pack.











Select features of the Fassi model F195A.0.23 used by the MKR team

- Max lifting capacity: 16.82 tm
- Hydraulic outreach:
 10.40 m (16.55 m with
 3 mechanical extensions)
- Weight: 2355 kg









One of the largest machines produced by Fassi Gru S.p.A. has landed beyond the Alps, among the valleys Switzerland. The Fassi F1950RA.2.28 was purchased by the company run by the Caduff family in the canton of Grigioni. To date, the fleet of Caduff SA di Tavanasa (GR) already includes numerous cranes. Up to now, the best performance of the family-run company was entrusted to the Fassi F1100AXP, with an impressive five models dedicated to lifting jobs in the region and beyond. "More and more frequently we were reaching the limit, especially in terms of outreach and lifting capacity - explains Claudio Caduff, often personally involved in moving operations. The choice fell on the Fassi F1950 model since the collaboration with Notterkran (dealer and local rigger for Fassi in Switzerland) has worked perfectly for 13 years, and we wanted to be able to count on a strong partner. Naturally, we are very proud of this".

Since November 2011 the Caduff family has been offering the Fassi he-dynamic articulated crane F1950RA, the "top of the line" model made by the Italian producer and rigged in Switzerland. Just one glance at the technical specifications is enough to understand what is hidden behind Fassi's simple code F1950RA.2.28: a horizontal outreach that extends more than 30 metres, a

load moment that reaches almost 140 tons per metre for a total weight of the crane of approximately 15 tons.

Important numbers especially for the operator who, without any extensions, has an horizontal outreach of 19.40 metres and can lift weights up to 6 thousand kilograms. The first model of this maxi-crane was fitted by Notterkran AG di Boswil. After its initial uses, Claudio Caduff was particularly impressed by the crane's speed and the incredible power of the hoist: 16 tons in quadruple pull. All those lifting tasks that, up to today, required the use of a crane truck - which Caduff SA did not have - can now be performed with the new loading crane.







It is also possible to lift extremely heavy loads and deposit them further away from areas of transit.

A supplementary system of outriggers is also used to make jobs even safer. Based on their extension, the crane's load capacity in that position is calculated automatically. Meaning that: even if the outriggers cannot be opened all the way, e.g. due to limited space, safe operation is guaranteed nonetheless since the crane operates within the calculated limits.

A fundamental statistic, if we consider the type of loads the new crane is capable of lifting: compared to more powerful vehicles found in fleets up to today, the performance of a Fassi F1100A crane has increased by 50%. Therefore it is possible to move and deposit two tons at a distance of 31 metres with a hydraulic extension and six tons at 20 metres away in a horizontal position without a Jib.



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