

WITHOUT

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c o m p r o m i s e

Fassi Gru international publication with information and updates

**QUALITY OF PARTNERSHIP:
THE PROFESSIONALISM OF FASSI
QUALITY SERVICE CENTRES**

FASSI PAINTING PROCESSES

**ENCOUNTERS ON THE FIELD: A FASSI
F1100AXP TESTED IN SWITZERLAND**

**READING FASSI LIFTING CAPACITY
CHARTS WITH WINCH**

FASSI

CRANES WITHOUT COMPROMISE

QUALITY OF PARTN

THE PROFESSIONALISM OF FASSI QUALITY SERVICE CENTRES

A service that is suited for and in line with the technological qualities of its cranes: this, in short, is the ideal behind Fassi's involvement at service level, and that above all takes the form of the operations in the network of sales and service centres that share and interpret the company philosophy "in the field", in its day-to-day work with end users.

The professionalism of Fassi Quality Service centres is born from the scrupulous care with which Fassi builds up its relationship with its partners: the company chooses to work exclusively with genuine specialists in the lifting sector. Consultants and experts in hydraulic cranes, who have organised their work

in harmony with the image and range offered by Fassi. The professional competence of Fassi partners is the result of the experience gained through their direct dialogue with users, but it is also strengthened by the training and updating activities that the company provides for its network of centres: realities that have the task of providing long-term confirmation of the values characterising the Fassi brand name, and testifying on a day-to-day basis to the validity of purchases made by the users in their area. Being a Fassi partner is a source of pride, but also involves specific responsibilities: it means making a series of professional and technical/organisational choices aimed at complete



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ERSHIP

customer satisfaction. Human resources are top of the attention list at Fassi Quality Centres. They must also have adequate infrastructures, from reception to the workshop operating protocols. It is the job of the Fassi Quality Centre to maintain optimum customer relations as regards servicing, spare parts and the working life of cranes, to give full efficiency. Finally, there is the fundamental role of propositive interfacing: at Fassi Quality Centres it is possible to find out about Fassi innovations and the opportunities provided by research, so as to take the best advantage of Fassi cranes in terms of adapting to the evolution in individual working needs and progress in the sector.

FASSI ONLY SELECTS QUALITY PARTNERS

Fassi partners: a consultant, a professional, an expert in hydraulic cranes

The activities and services offered by every Fassi Quality Centre are aimed at confirming the principles at the root of Fassi's market identity. When you go to a Fassi partner you can be certain to receive the same level of consultancy that you would when dealing directly with the manufacturer. Before purchase, each Fassi partner shows itself to be a consultant specialised in hydraulic cranes, capable of interpreting the customer's expectations, identifying the determining factors that will help ensure profitability of the machine when in operation, giving valid reasons why certain set-ups will be better than others. In this consultancy activity, Fassi Partners will not fail to provide interesting comparisons with other offers available on the crane and truck market. At the time of purchase, the Fassi partner will ensure that the decisions made and the agreements reached with the customer will be respected, thus becoming the trusted intermediary for all aspects of delivery and the start of the crane's working life. After purchase the Fassi partner becomes a strategic ally for the user, always ready to confirm the essential value of planned servicing, help maintain the machine in full working order, take timely action to solve problems when there is a need for spare parts or other assistance.

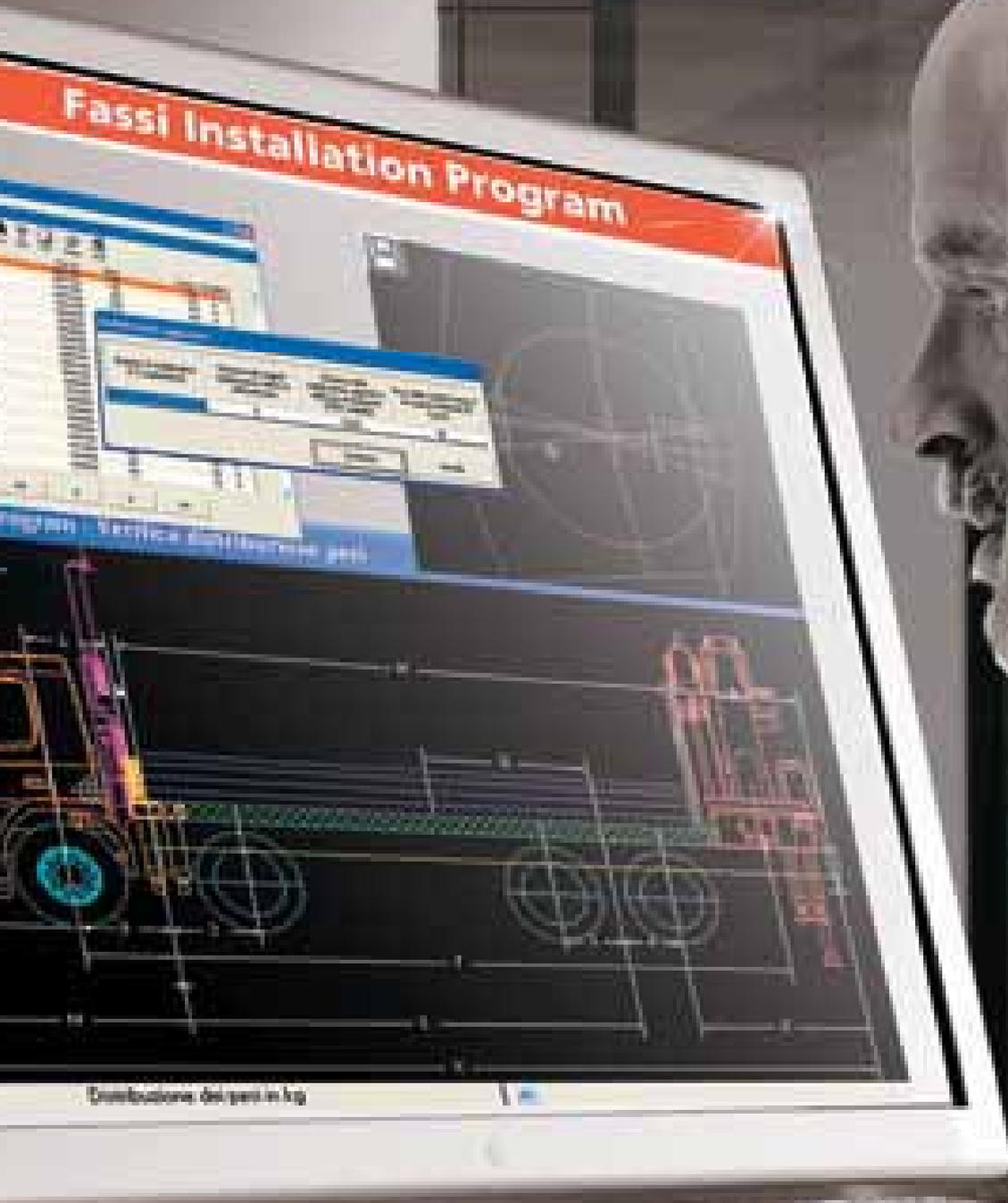


FASSI

**QUALITY
SERVICE**

F330

FASSI



WITH YOUR FASSI PARTNER YOU WILL FIND YOUR IDEAL CRANE

A Fassi partner is the best possible way of combining your needs with the opportunities offered by new technology

Fassi offers the widest and most articulated range of hydraulic cranes in the world: over 500 versions and more than 30,000 configurations. An enormous repertoire of options, which means that it is possible to find a crane that will respond to the needs and expectations of every user. It is thanks to the professionalism and competence of Fassi partners that this extraordinary breadth of opportunity can be accessed immediately and translated, in real time, under the customer's eyes and thanks also to the power of dedicated software, into specific, well documented offers. The professionalism and competence of Fassi partners is in fact essential to turn expectations into solutions, requests into answers. Fassi partners have an in-depth knowledge of the technology used in the cranes, and how the progress of these technological and operating systems results in top-class performance, high levels of reliability and complete safety. Talking to a Fassi partner means first of all discovering what characterises progress in the sector, and finding out how even the limits that until yesterday appeared insuperable have now become a standard for Fassi. Nobody knows a Fassi crane better than a Fassi partner. They are the first to be informed about evolutions and new features, and gain valuable knowledge directly with the manufacturer so that they can combine this with their own experience and professional training. The result is service "without compromise" in terms of quality.

Fassi painting processes

Combining high quality paintwork and long-term durability: on this principle Fassi, together with BASF, world leader in this sector, has developed a top-level process that respects the environment.



One characteristic that is frequently underestimated when evaluating an article is the paintwork, one phase in the product's manufacture which has the task of protecting the treated component. The choice of which products are best suited to this operation is dictated by what is to be achieved in terms of the crane's resistance to corrosion and ageing. Until recently, painting was considered a compulsory step in the manufacturing process, but it was not thought to provide any added value for the product. In reality, the perception of quality also derives from the state of preservation of the article, and thus from the presence or absence of corrosion and from the loss or retention of shine. For these reasons, Fassi considers painting to be an integral part of its manufacturing quality. The choice of the correct painting cycle has been made in co-operation with BASF Coatings, the world's top chemical group with enormous experience in the field of low environmental impact painting. For example, BASF products are used by car manufactures of the calibre of Mercedes, BMW and Audi. To understand the difference between a crane that has simply been painted and one that has been painted/protected, it is necessary to distinguish the levels of quality performance offered by the various paint products available on the market.

The quality of paints, with different chemical composition and applied in different combinations, is of fundamental importance in determining performance

The so-called "base coat" (primer) applied to the article has the job of protecting the support from corrosion and creating the best possible conditions for adhesion of the enamel, which in turn has the task of retaining its original colour and

shine as unchanged as possible over time. Epoxy primers, whether they be water soluble or high solid, are the best way of providing rust-proofing, while polyurethane enamel is the best way of protecting against atmospheric agents.

As well as rusting and atmospheric agents, painting cycles are required to provide a series of levels of resistance to the materials with which the crane might come into contact, including solvents, petroleum and hydraulic fluid. To guarantee the best results, the saline mist test is particularly severe, as this reproduces potentially extreme corrosive conditions.

The choice of a paint, as well as its quality characteristics, must also take into account environmental regulations, so that the impact on the ecosystem in which we live, the abolition of heavy metals (chrome, lead, molybdenum) in paints, is something that Fassi has been working on for many years, together with the use of products with a low solvent content, which have been in use in crane painting for some time now. More recently, there has been a transition to hybrid painting systems using water-soluble epoxy primers which, while retaining the quality of the product unchanged, guarantee almost total elimination of solvent emissions.

The quality of the painting process used by Fassi aims to guarantee optimum results on a long-term basis

The first phase in the process is phosphodegreasing, an operation in which any pollutants, oil, dirt, machining waste etc. that might prevent proper adhesion of the primer to the support are removed from the surface. Together with the degreasing operation, phosphatisation is also carried out, laying a thin layer of iron phosphate salts to guarantee optimum conditions prior to





Fassi plants implement a co-ordinated series of controls for final testing of paint quality, including testing of the thickness and quality of the paint layer applied (photo 1) and an abrasion test (photo 2). The aim of these tests is to check that the painting processes comply with those perfected in co-operation with BASF, which involve three essential working phases: phosphodegreasing, application of the epoxy primer and application of the enamel finish (sequence of photographs below).



the proper painting operation.

The primer is applied in the first of the painting cabins, using humanoid robots that are capable of painting all the components making up the crane (base, main boom, secondary boom, etc.) in an even, repetitive manner, and using a dedicated program that is capable of identifying any changes in model. Proper mixing of the primer and the catalyst is managed by a computerised mixer, which intervenes in the event of any anomaly to block the robot and sound an alarm. This means that improperly catalysed paint that does not comply with the set requirements is never applied. The next operation involves application of the polyurethane acrylic enamel in the characteristic Fassi red colour. This phase is likewise managed by a sophisticated electronic program, which renders the operation completely robot controlled. All working parameters are thus checked, corrected if necessary and then stored so that the manufacturing process can be monitored. After a suitable curing period, the components are fired at a temperature of 60°C, after which, following a further quality control operation, they are ready to be handled and can be sent on for the subsequent assembly operations.

Paint film characteristics

The painting cycle involves the use of non-toxic products, free from heavy metals and with a low solvent content. It features high chemical





and physical strength properties, and does not change over time. The use of epoxy primers, with the addition of suitable rust-proofing pigments both in the high solid and water soluble versions, combined with acrylic finishes, makes the article resistant to atmospheric agents even in particularly aggressive conditions, such as those found near the sea (ports, shipbuilding yards, etc.) or in industrial environments (job sites, environments involving aggressive chemicals, etc.). Particular care has been taken to safeguard the environment, thanks to the use of paints containing no lead and chrome, and above all featuring a low solvent content, so as to reduce harmful emissions to a minimum.

FOR 10 YEARS, FASSI HAS BEEN WORKING WITH THE BASF LABORATORIES, SERVING PAINTING QUALITY AND RESPECTING THE ENVIRONMENT

The professional resources of a world leader in the chemical sector ensure top-level research into the quality of Fassi paints, providing indications for better use in a carefully coded and technologically advanced process.

Water based paints

These are a responsible choice because of the numerous advantages they provide: reduction of solvent emissions into the environment, shorter processing times, excellent elasticity and resistance of the paint layer to changes in temperature and atmospheric agents, optimum re-coating, no spontaneous combustion.

Materials used in Fassi paintwork

- Dual component, water based epoxy primer with zinc phosphate
- High solid acrylic semi-gloss finish.
- High solid epoxy primer with zinc phosphate
- High solid acrylic gloss finish.

Good set-up improves performance

An essential factor when comparing two technologically synergetic but also very different universes, those of industrial vehicles and cranes, is the service provided by the fitter, who has a fundamental role in determining the performance of that new “dynamic and working entity” that is a truck fitted with hydraulic crane.

How much does a good set-up count in the performance and operation of a crane? To answer this question and clarify the many aspects that make up and give significance to the term “set-up”, we contacted a specialist organisation that has been dealing specifically with this activity for over thirty years. With their help we attempted to gain a fuller understanding of the problems encountered when combining vehicle and crane, but above all to identify what it is that makes the set-up such an essential factor in the quality of service provided by a sales and service network. Fitting a hydraulic crane on a truck means placing two highly industrialised technological products in close relation with each other, creating the conditions that will ensure these two worlds not only establish a positive, safe relationship, but one that will enhance their mutual potential. When described in so many words this may not seem a particularly complex task, but on the contrary it involves a great deal of experience, a solid professional background and also a good dose of sensitivity and intuition. Not without reason

the work of the fitter retains certain process features typical of craftsmen, while at the same time imposing the use of high technology knowledge. From this point of view it must be noted that both cranes and trucks have, over recent years, become increasingly evolved “products”, featuring electronic, hydraulic and mechanical progress that would have been unthinkable until recently. Crane and vehicle: two modern “brains”, combined with a great deal of muscle, that have to be able to understand each other, dialogue with each other, agree with each other. Then there is another aspect that helps make the work of a quality fitter even more complex and full of responsibilities: each truck has specific needs, and the possible configurations may be almost endless, even though, based on the needs of the user, there may only be one that is truly “ideal” and therefore recommended. From a structural point of view it must first be said that the crane is an “unforeseen” element in the vehicle’s construction, and must therefore be integrated with a reality that, while it has to

ensure full efficiency and maximum safety of the crane itself, also has to be able to travel on the road, transport goods, retain its dynamism and reliability even in extreme conditions (ice, rain, uneven road surfaces, etc.). While this is a relatively simple task for cranes of up to 20 tonnes per metre, from that point on there must be a careful “reworking” of the truck as it is supplied from the factory. In effect, the first goal of a good set-up is to ensure that the structural and dynamic stress imposed by the crane, both when at rest and in particular when working, is transferred to the frame of the truck itself in a proper way. If this does not happen there is a high risk of creating dangerous conditions, and it may only be possible to make minimum use of the crane’s potential. Starting from this need a variety of solutions have been created, first among them the production of counterframes, destined to reinforce the structure of the vehicle itself. The quality of the set-up is mainly based on the ability to create counterframes that, while making the truck with the added weight and stress of the crane more reliable, do not have a negative influence on the way it drives. Not without reason Fassi has been studying this problem in great depth from the Eighties, also in harmony with growing development of potential and expansion of its range of medium-heavy cranes, and has provided solutions that have been shared by and perfected in co-operation with its partners. These are the people constantly involved in transferring this culture of quality and safety to their main interlocutors: industrial vehicle dealers. This is because it’s more often the dealer to be called upon by his customer to provide information on what a good set-up means, and to offer advice on what is possible or what it is best to do or not do. In this sense, part of the professionalism of Fassi



partners lies in becoming in turn the best assistants for industrial vehicle dealers. This is why, when setting up cranes of over 20 tonnes per metre, there is more and more often a three-way discussion (user, dealer and Fassi service professional), aimed at getting a better understanding of how to proceed to provide the best solution. In this way, the purchase becomes a genuine project, and moves away from a merely commer-

cial and towards a more technological viewpoint. In effect, as well as purchasing the vehicle and the crane, the user is also purchasing the right set-up for his needs, which is under no circumstances a secondary feature but, in particular for medium-heavy and heavy cranes, takes on strategic importance. Thus, the quality of service offered by a professional fitter, and one which Fassi requires and knows it will obtain from its

partners, starts with that fitter's consultancy abilities. The quality of Fassi service requires the fitter to enclose a detailed list of operations to be carried out when he presents his offer. This list is also valuable from a guarantee point of view for the truck manufacturer, as it enables the latter to give its opinion on the validity of the proposal in advance, in terms of compliance with its own protocols.

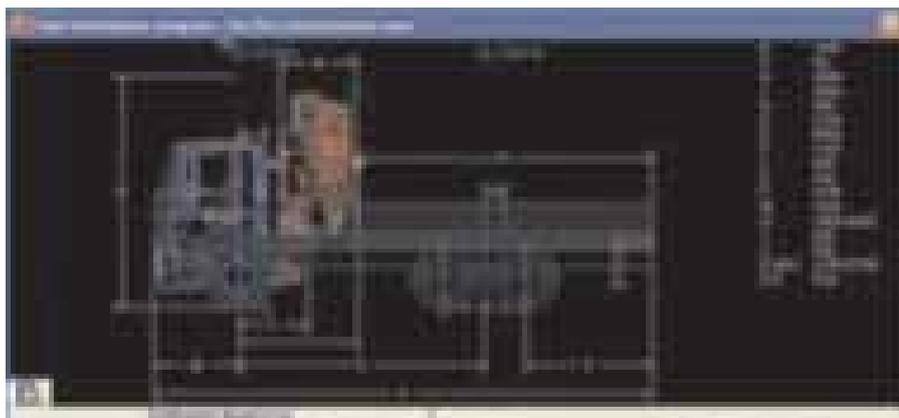
A proper set-up means responding with intelligence to complexity

Today, only authorised workshops have the know-how, the software and the hardware necessary to provide set-ups capable of combining quality operations and current regulations. This situation has been determined by the greater complexity, particularly in terms of technological equipment, of both the vehicle and the crane. Electronics, hydraulics, but above all a multiplication in the number of details making up that organism that is a modern industrial vehicle, that is to say everything that goes on under the loading bed, inevitably mean that the fitter has to deal with increasingly difficult situations from the point of view of location and rational, safe fitting of the crane. Each item must be taken into account in advance, and it is frequently necessary to move entire elements from one part of the vehicle to another. All this without taking into account that reinforcement of the frame is always at the base of the set-up, and this has its own requirements and working spaces. Each truck has its own needs, and these must be interfaced with those of the type of crane to be fitted. Fitting a crane is a "tailor-made" operation, but one that must also guarantee certain parameters.



F.I.P. - Fassi Installation Program

Fassi provides its partners with a software that simulates installation needs, characteristics and variables, according to the crane configuration and type of truck.



Fassi's involvement in innovation comprises not only the design of increasingly high-performance, safe cranes, but also all those support services that help select and obtain the ideal crane based on choices that regard both the crane itself and the vehicle on which it will be fitted. Fitting is an operation that requires experience and specialist training (more is said about this on page 12 of this issue of "Without Compromise"). However, it is possible to aid the professional experience of the fitter by providing solutions that are the

fruit of state-of-the-art technical and information technology research, as applied specifically to truck-mounted hydraulic cranes. This awareness has resulted in the Fassi Installation Program (F.I.P.), an exclusive computer program developed by Fassi, which is capable of intervening on three strategic aspects of the set-up: dimensioning of the counterframe positioned between the crane and the truck frame; definition of weight distribution, bearing in mind that trucks have a formal/legal weight that cannot be exceed-

ded; calculation of stability, referred to the crane while operating at maximum performance, on a stabilised truck with an empty loading bed. This calculation serves to see whether or not the vehicle is at any risk of overturning.

It must always be taken into consideration that the truck and the crane together form a new dynamic system, which does not merely correspond to the sum of their two weights. There are an enormous number of variables. It must also be recognised that the fitted vehicles must then be approved by national bodies, and the counterframes must be dimensioned to comply with specific regulations. The F.I.P. takes all this into account.

The F.I.P. is an interactive, versatile program, which allows the optimum set-up parameters to be identified

This program, which has been created in-house by the Fassi research centre, has three libraries of pre-set data: cranes, trucks, crane accessories (winches, manual jibs, etc.). The program is

1) A record of offers available at all times



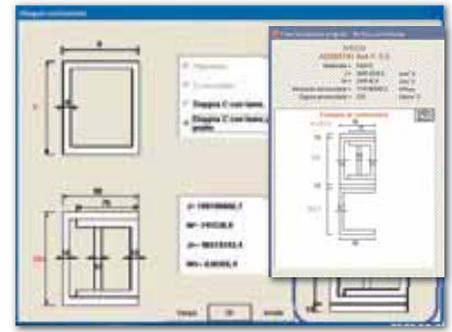
The F.I.P. stores and makes available a full range of offers made to customers.

2) General data input screen



A rational graphic interface enables the vehicle and crane parameters to be entered with ease.

3-4) Input of Counterframe parameters



According to the characteristics requested, the program allows the dimensions of the counterframe and the quality of steel to be defined.

5) Weight distribution - loading bed



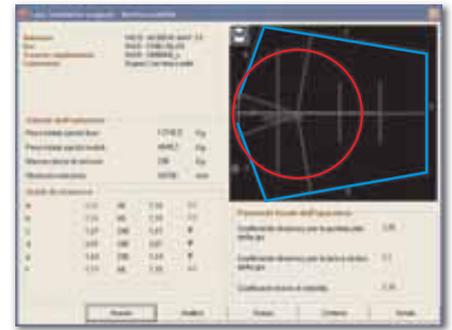
All the data relating to the position, length of bed and rear overhang are communicated.

6) Detailed weight distribution



This screen performs an automatic control of weight distribution. If the distribution is suitable, the message CHECKED will appear in red.

7) Stability of the crane-truck system



The red circle indicates the centre of gravity. The system is stable if the circle falls within the BLUE polygon.

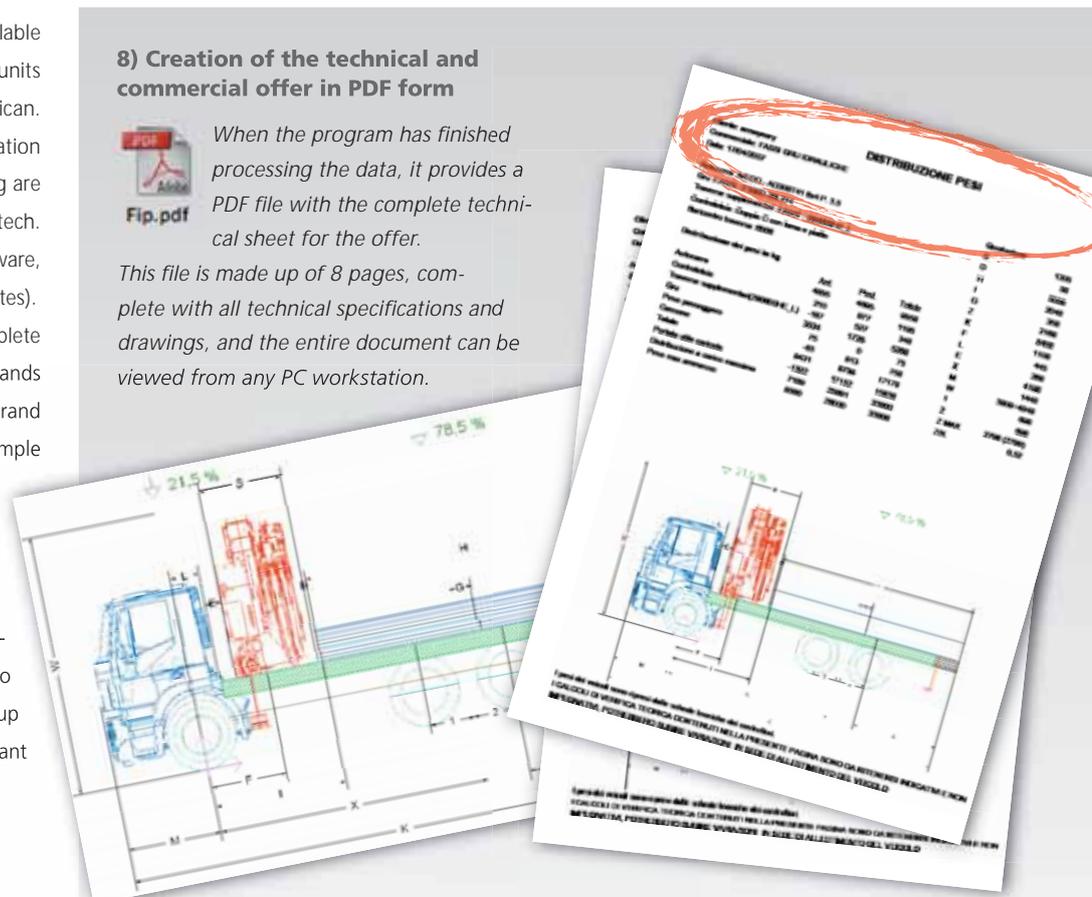
designed to operate world-wide, as it is available in 5 languages and works in the two main units of measurement, decimal metric and American. The F.I.P. is supplied on CD ready for installation on a personal computer, while the following are available from the intranet site www.fassitech.com: upgrades (improvements to the software, executable .EXE files); updates (library updates). The truck library is extensive, and as complete as possible, and includes non-European brands of truck. If the crane is to be fitted to a brand new truck, the program allows fast, simple implementation of the library, simply by entering data that can be found on the vehicle's technical sheet into the program. Then again, versatility and updateability are two characteristics of the F.I.P., and the libraries can be expanded continually. Thanks to the F.I.P., Fassi partners have a unique set-up system, a true "added value" that is a significant aid for their consulting and market services.

8) Creation of the technical and commercial offer in PDF form



When the program has finished processing the data, it provides a PDF file with the complete technical sheet for the offer.

This file is made up of 8 pages, complete with all technical specifications and drawings, and the entire document can be viewed from any PC workstation.



Fassitec Switzerland: a F1100AXP.28 for Meier Walter Transporte AG of Würenligen

This Swiss user is extremely attentive to the quality of its cranes, while at the same time preferring innovative, versatile solutions. A significant proof of this is the crane set-up prepared by Fassitec, the Fassi dealer for Switzerland, on a high-performance F1100 supplied to the firm Meier Walter Transporte.

An authoritative reference point in a highly evolved market

The size of the Swiss market as regards the articulated crane sector is currently estimated at 500 units per year, and has been increasing progressively over the past few years, as has the level of competition provided by main international competitors. All the main crane manufacturers have consolidated sales networks in Switzerland. Thanks to the innovative and complete range of Fassi products, combined with the competence of FASSITEC AG, Fassi's market share has increased constantly in recent years. Fassitec AG is based in Boswil, and has three other centres in Switzerland. The Sales, Planning, Mechanical construction, Painting, Assembly, Spare parts service (eliminare) and Hydraulic lines service departments have a total staff of 80 employees. The spare parts stock comprises over 20,000 articles. Approximately 250-300 spare parts transactions are carried out every day. Each day, more than 50 packs leave the Fassitec AG warehouses and

make their way to customers all over Switzerland. Various forms of transport ensure high levels of service. Fassitec AG has been certified to comply with ISO 9001:2000.

The competence and organisation of Fassitec have enabled the company to become a genuine reference point for a variety of customers who give priority to quality of service, in all aspects of the dialogue between dealer and user: advance consultancy, set-up solutions, preparation of the vehicle in combination with the ideal crane, post-sales services.

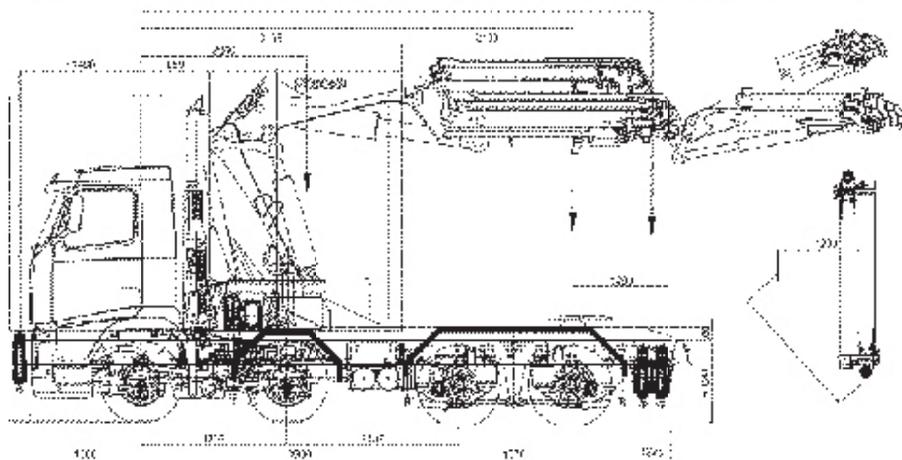
A significant example that helps understand the professionalism and organisation of Fassitec AG is the recent supply of a high-performance F1100AXP.28 to one of its most important customers: Meier Walter AG of Würenligen. This is a company founded in 1948 and still owned by the same family, which has grown considerably in size and has an excellent reputation. The excellent service it offers is widely recognised in a large part of Switzerland. The company works

in the crane hoisting, transport and recycling sectors. The professionalism of both its fleet of vehicles and its staff are a clear indication of a truly professional business.

From the needs of the user to Fassitec's solution

These are the principle needs and requirements expressed by Meier Walter AG of Würenligen with reference to purchase of a new, heavy-duty crane: high lifting capacity, installation on an agile, extremely compact vehicle, longest possible hydraulic crane extension, high residual load capacity on the vehicle, excellent balance of crane performance and vehicle payload, use with a high performance hoist and with pick-up accessory fitted on the hydraulic jib, great management autonomy (a single person has to be able to operate all the functions of both vehicle and crane).

Furthermore, as always, the customer requested Fassitec AG to provide competent sales support





Bernard Birchmeier, manager of Meier Walter Transporte AG, underlines the philosophy that guides his company's operations:

"If we do something, we want to do it properly. Our employees all work to provide excellent service, because they know that in the end quality is the key to success. With regard to our work with cranes, we have acquired an excellent reputation. Our new investment in the FASSI F1100AXP with all its many accessories is the proof of our concentration on becoming the first choice for customers in the heavy load lifting sector. We expect an equally competent and professional service from our suppliers. In the end the excellence of this service also counts for our customers. Fassitec AG offers us a suitable package in terms of customer, product and post-sales service support. FASSI cranes provide quality, performance and ease of use. I also consider the intelligent control and emergency equipment fitted to prevent crane malfunctions very good".



Bernard Birchmeier

and guarantee excellent technical servicing all over Switzerland.

The set-up proposed and supplied by Fassitec AG, to be installed on a Volvo 8x4 tractor with DOLL. 40 t. semi-trailer for heavy loads comprised the following: FASSI F1100AXP.28 L516 crane with 2 manual booms (to reach a horizontal extension of over 35 m.), winch type V30 (3000 kg direct lifting power), 2 supplementary functions, activated down (eliminare!!!!) to the tip of the hydraulic jib, to work with pick-up accessory, one stabiliser on the front of the vehicle, with a minimum of 8000 kg vertical force, to optimise stability.

As regards the counterframe, a FASSITEC-NOTTER made from high quality steel was used, with CAD-optimised weight. Reduced section profile, bent to reduce the height of the fifth wheel. A bridge counterweight was also provided, for

simple direct installation on the fifth wheel coupling when the semi-trailer is not hooked up. All the accessories on the vehicle have been designed to ensure the most comfortable working conditions possible. The solution, developed by the Fassitec planning department, was fully documented and explained to the customer: the latter interacted with the planning group during the set-up period. The project also included a training session on use of the equipment, aimed at the end user and carried out prior to delivery. In this way the customer was able to get the best profit from his investment.

The FASSI F1100AXP has been working for Meier Walter Transporte AG for almost a year, often in extremely strenuous working conditions. The crane has served the company successfully for over 1000 working hours.





In these pictures we see the Fassi F1100AXP in action. The crane was chosen by Meier Walter AG in co-operation with Fassitec for its ability to combine very high lifting capacity with considerable versatility of operation in all working conditions.



Reading the “lifting capacity charts with winch”

The lifting capacities of cranes fitted with winch change significantly with respect to standard loads, and therefore require specific charts.

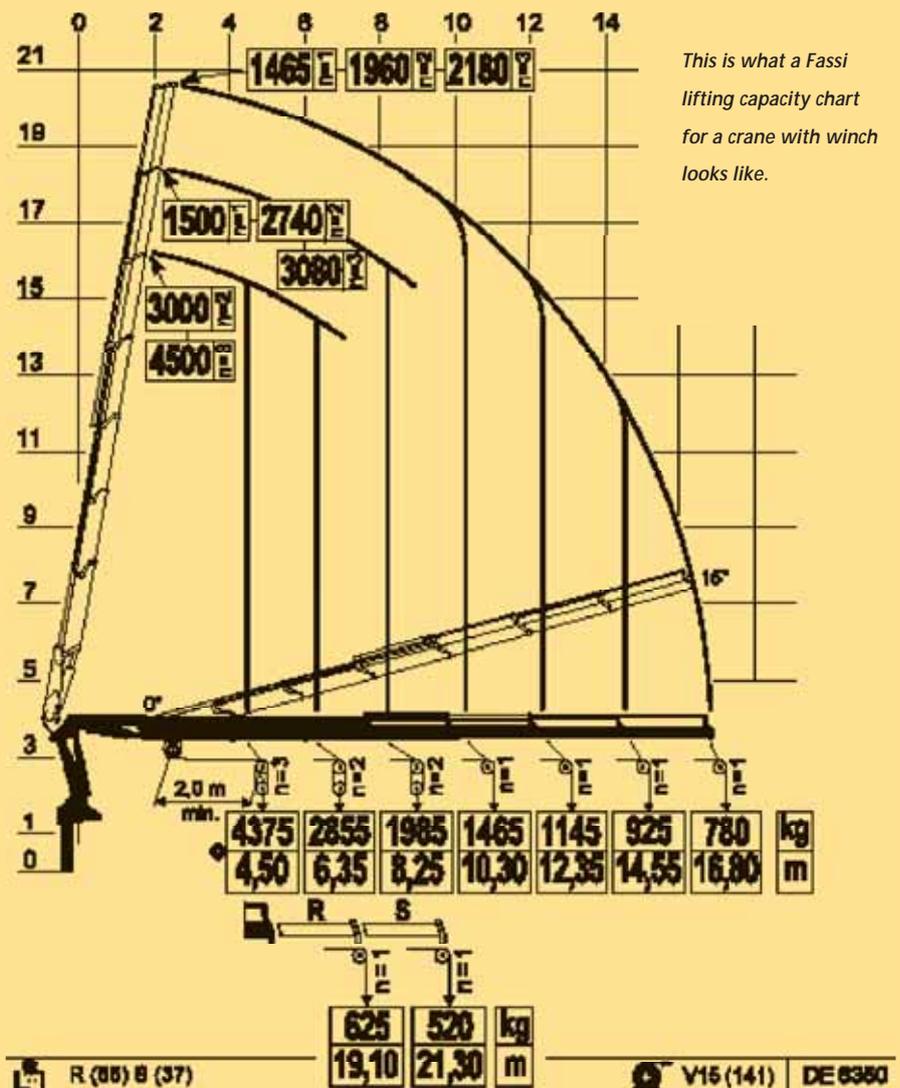
When the crane is fitted with a winch, the lifting capacity parameters vary, and as a consequence there are changes that must be taken into careful consideration, both in a horizontal and in a vertical position. Based on this principle, it is to be considered an indication of good practice by crane manufacturers to supply specific charts resulting from the application of load formulas related to the use of single and multiple cable lines and from practical testing of crane behaviour when these loads are applied. All this is to provide the user with a maximum possible guarantee of the crane's working safety and the actual working loads that can be lifted. Winch lifting capacity charts should therefore normally form part of the standard documentation accompanying the presentation (and eventual offer) for a crane that has been fitted with a winch, although this is not always the case. On the market it can in fact be seen that these lifting capacity charts for winches are by no means always supplied.

To confirm its philosophy of good practice, transparency and active co-operation with its partners, who are required to pass on an equally high quality of service, Fassi demonstrates its professionalism and consistency by producing precise, detailed lifting capacity charts for its cranes fitted with winch, complying with current directives that require all the lifting capacity charts for the specific working configurations of each crane to be present on board the machine.

The contents of a lifting capacity chart for a crane with winch is to be read using the following data:

- The lifting class of the winch is defined based on the rated lifting capacity under direct load at the fourth layer of cable wound onto the drum.

- The working capacities of the winch with the crane booms horizontal, regardless of the number of cable lines, corresponds with a good level of approximation to the rated capacity of the crane at the hook, after deducting the tare weight of the winch itself and of all the accessories such as



The chart gives all the information necessary to find the variations in lifting capacity determined by the winch, both in terms of working performance and safety.

cable guides, pulleys, pins, counterweights and hooks required to operate the accessory.

• The working capacities with the booms above the horizontal, regardless of the number of cables, are determined by the mechanical resistance of the extension rams at peak load and by the maximum lateral deformation of the extending booms, based on the accepted principle that the rated pull of the winch at the point of connection to the pulley doubles, because it is exerted on the one side by the drum pull and on the other side by the load pull itself. To increase the working lifting capacity of the winch when

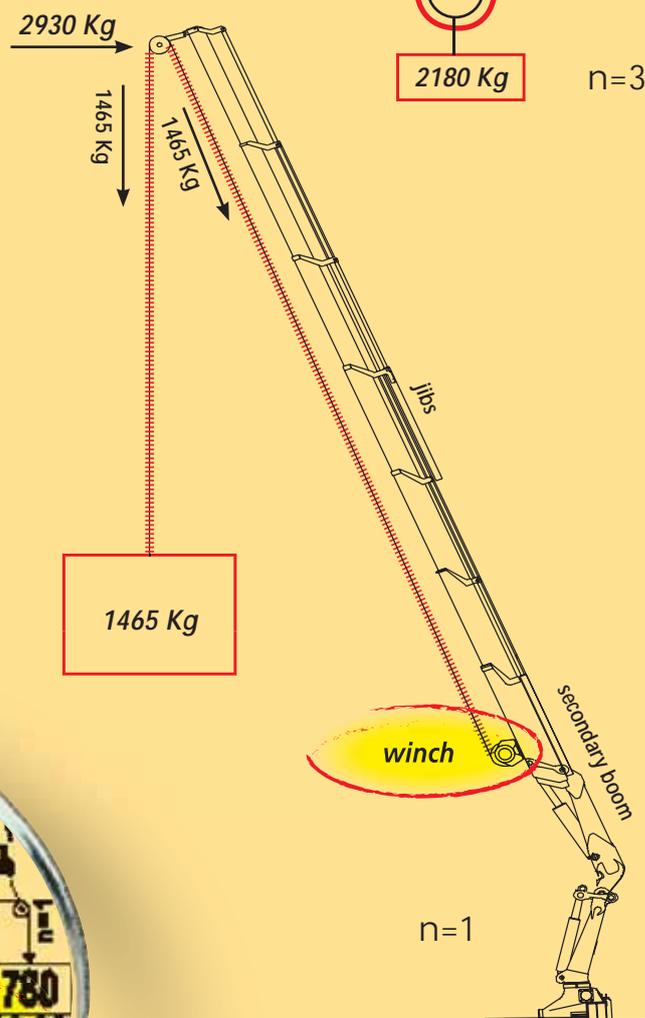
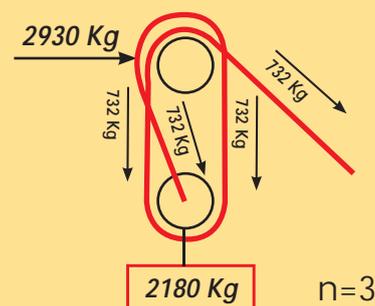
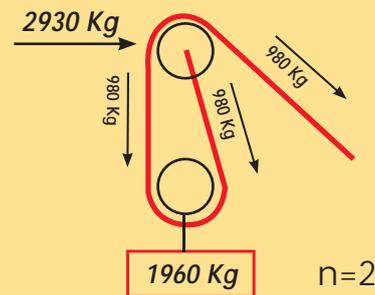
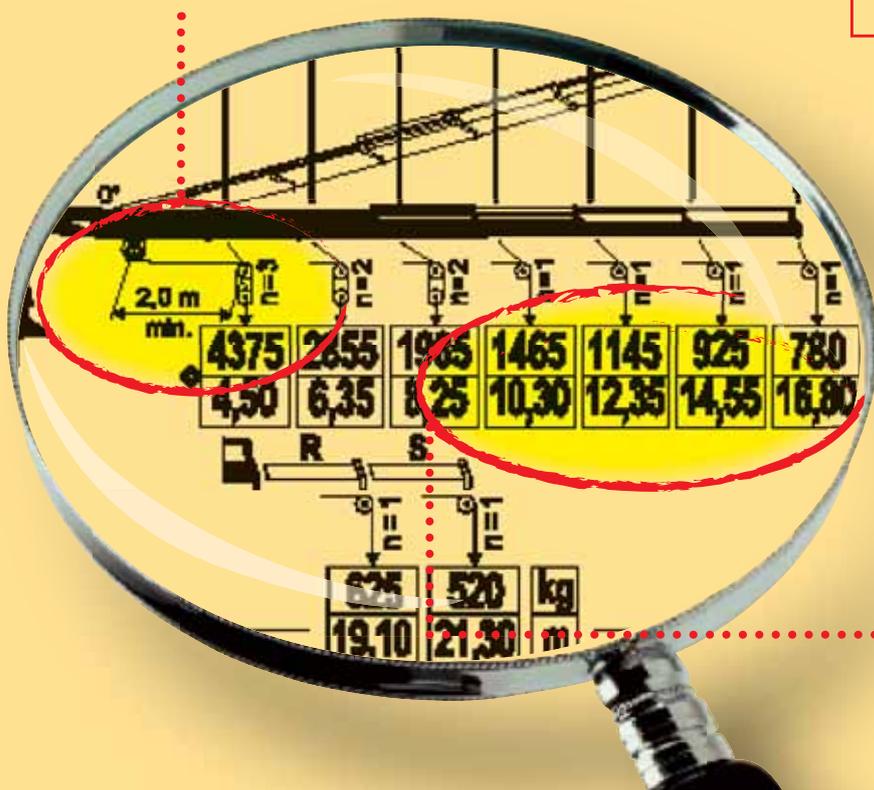
operating above the horizontal it is necessary to use multiple cable lines, which, by proportionally reducing the incidence of the rated load on the upper pulley from the load side, allows larger loads to be moved at the end of the extensions booms while still complying with the maximum mechanical resistance of the crane components and the power of the winch.

As in the case of the working configuration with horizontal booms, the working lifting capacity of the winch is net of the tare weight of the winch itself, and of all the accessories required to operate it.

In a working configuration with vertical booms, it can be seen that a working load on the hook of 2960 kg when vertical with the crane fully extended, corresponds to the following working loads at the fourth layer for a winch with a rated load capacity of 1500 kg:

- n=1 cable line 1465 kg., corresponding to 50% of the rated load at the hook, net of the weight of the winch accessories.
- n=2 cable lines 1960 kg, following division of the forces due to an increase in the number of cable turns, net of the weight of the winch accessories.
- n=3 cable lines 2180 kg, following division of the forces due to an increase in the number of cable lines, net of the weight of the winch accessories.

For completeness of information and in compliance with regulations, the Fassi lifting capacity chart also highlights the minimum safety distance that must be maintained between the winch and the pulley to guarantee proper winding of the cable with no overlap.



When working with the booms in horizontal, the working lifting capacities of the winch can reach, regardless of the number of cable lines, the rated lifting capacities of the crane in the hook working configuration.



Interview with LUIGI PORTA

Fassi Team Export Manager

Fassi's "glocal" vision

Fassi's presence on all world markets derives from its ability to offer not only product quality, but a quality partnership with its local dealers. Fassi works with a strategic view (global thinking) and, at the same time, deals with each of its customers in a very personalised manner (local action). In the modern-day market this way of operating is known as "glo-cal", that is to say thinking of product dynamics and market trends on a world scale while, at the same time, providing response to the expectations of each individual local reality.

Product quality is the unifying factor throughout the world

For Fassi the common value, beyond any consideration of nation or continent, is the all-round quality of its cranes, whether in terms

of performance, working capacity or safety. Not without reason Fassi is a world protagonist in research and innovation, thanks to constant updating of its cranes to include all the most advanced features made available by progress, such as the extraordinary evolution in Fassi electronics that has been applied to the "Evolution" series.

Another Fassi value that can be found throughout the world is its design work, and the guaranteed reliability that accompanies products and derives from extremely careful fatigue testing of prototypes. The same thing can be said for the choice and use of materials: each Fassi crane, regardless of the market it will be working in, is made using the same types of steel that mark its superior quality, and is painted with state-of-the-art products and processes, as you can see by reading this issue

of our magazine. Also in common throughout the world, regardless of nation, are the opportunities provided by Fassi for its partners to become more familiar with products, so as to understand the points that make them unique and provide dealers with tools to pass these values on to the end user. The satisfaction of customers, when using a Fassi crane, is at the centre of each and every one of our team's projects and actions.

Made-to-order production: the link between "global" quality and "local" needs

The extraordinary breadth of the Fassi range, largest in the world with over 60 models in numerous versions and over 30,000 configurations, means that it is always possible to provide "tailor made" cranes to suit individual



needs and uses.

Acting locally takes the form of listening to needs, based on the knowledge and experience of each dealer, who knows better than anybody else what his own market and customers require. Fassi's job is to provide answers that will fulfil the promises made and that, while strengthening the global identity of the brand, will at the same time be sufficiently customised that they satisfy each individual request.

Professionalism, competence and service organisation of Fassi dealers

All over the world, Fassi dealers distinguish themselves by their technical preparation, and are recognised as lifting specialists. Another parameter on which co-operation is based is the economic solidity of businesses, which

combine management and commercial abilities with workshops organised to provide full technical services. These structures operate using protocols that are the fruit of experience, and are organised to provide high quality service. This also means that staff are trained and re-trained continually, always in close co-operation with Fassi. Working with precise protocols means that the dialogue with the crane user is optimised 100%, starting from initial contacts and consultation on service operations, and going on to the transparency that can always be found at service cost level. This all creates the ideal interface for Fassi product quality.

Fassi Glossary

F.I.P.

The abbreviation F.I.P. indicates the Fassi Installation Program, a software aimed at assisting Fassi partners when drawing up crane set-ups. Created in-house by the Fassi research centre, the F.I.P. is structured with three libraries (cranes, trucks and crane accessories) and provides specific information necessary to dimension counterframes, define weight distribution and calculate stability.

Epoxy paint

Polymeric formula with a low molecular weight that renders the material impregnable to external agents such as detergents, fuels and lubricants, as it forms a sort of dense, durable film with excellent levels of resistance.

High solid paint

Contains fewer volatile organic substances, while still guaranteeing the same levels of quality as a traditional solvent-based product. High solid technology considerably reduces the environmental impact of painting plants, without the need to face additional costs, as no particular modifications need to be made to the plant itself.



CRANES WITHOUT COMPROMISE



WITHOUT COMPROMISE

Fassi Gru international publication with information and updates

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1

EASY TO USE

2

DESIGNED TO PERFORM

3

MADE FOR YOU

4

QUALITY OF PARTNERSHIP

