ets®
engineering
trasporto sollevamento

Heavy lift spreader beams

The way to lift and carry your ideas and your things.

_The company reputation is based on the delicate and complex interconnection between Customer and Producer.
Our success is therefore the success of our customers who have been putting for many years their trust and ideas into the professionalism and dynamism of our wonderful Staff.
Thank you all

ets®

THE WAY **TO LIFT**

ETS is a point of reference for the medium and heavy lifting equipment industry.

ETS has been working in the manufacturing sector of medium and heavy lifting appliances and equipment for off shore and on shore applications since 1977. As a manufacturer, we are able to provide you with tailor-made equipment and customized solutions. Our production includes bridge cranes, gantry cranes, manual and electric hoists & winches and lifting beams. Our growth and development are all about people who work here: qualified engineers and consultants, motivated by passion who are able to respond to the demands of our customers providing efficient and competitive technical solutions that testify the truthfulness of the slogan that best expresses the philosophy of the company **"The way to lift and carry your ideas and your things".**

Table of Contents

6 01_The company

10 _01.1 The Company
12 _01.2 The Team
14 _01.3 Our Quality
16 _01.4 Our Process
18 _01.5 Our Certifications

20 02_Design

22 _02.1 Risk analysis & Assessment
24 _02.2 Standards & Rules

26 03_Quality

28 _03.1 Materials Testing
30 _03.2 Our documentation

32 04_Production

34 _04.1 Industry
38 _04.2 Energy
42 _04.3 Oil & gas
46 _04.4 Subsea

48 05_Lifting Beams

50 _05.1 Main Features
52 _05.2 Testing machines & load tests
54 _05.3 Special tests & Prototypes

56 06_After sales services

58 _06.1 Safety & Optimization
60 _06.2 Our standard controls
62 _06.3 Total cover

THE **COMPANY**

01

DIRECTIONAL **OFFICES**

THE **COMPANY**

ETS is a Leading Company for the manufacturing of Lifting Devices dedicated to the OIL & Gas market both
On-Shore & Off-Shore.

ETS main responsibility is towards the continuous improvement of the quality of the product with special attention to environment and safety.
Modern technologies, constant training and commitment are the key factors that complete the great experience matured in the lifting sector after more than 40 years of activities.
Each achievement is the lifeblood for a new challenge.
Commitment, expertise, flexibility, innovation make ETS one of the most fair and dynamic companies of this sector in Europe with thousands of projects awarded all over the world for all major EPC companies.
Follow us in our daily endeavor to study, design and realize for you.
THE WAY TO LIFT YOUR IDEAS.

01.1

THE **TEAM**

"The way to lift your ideas" is the core and soul of our mission here in ETS.

We elevate your ideas and we make it possible in the easiest way because client vision is our starting point of view.
New things are constantly being developed and discovered by each new generation but on the other hand, life is a continuous chain of experiences coming from the past.
ETS team represents the right fusion between knowledge, experience and innovation thanks to a dynamic team of engineers and professionals, which combines their open minds to create new ideas and consolidate the company's strengths.
Constant Up-dating-and training are indispensable factors for the professional growth throughout the company.
Only if you never stop thinking, learning and asking you can achieve goals in life.
That's our Company.

01.2

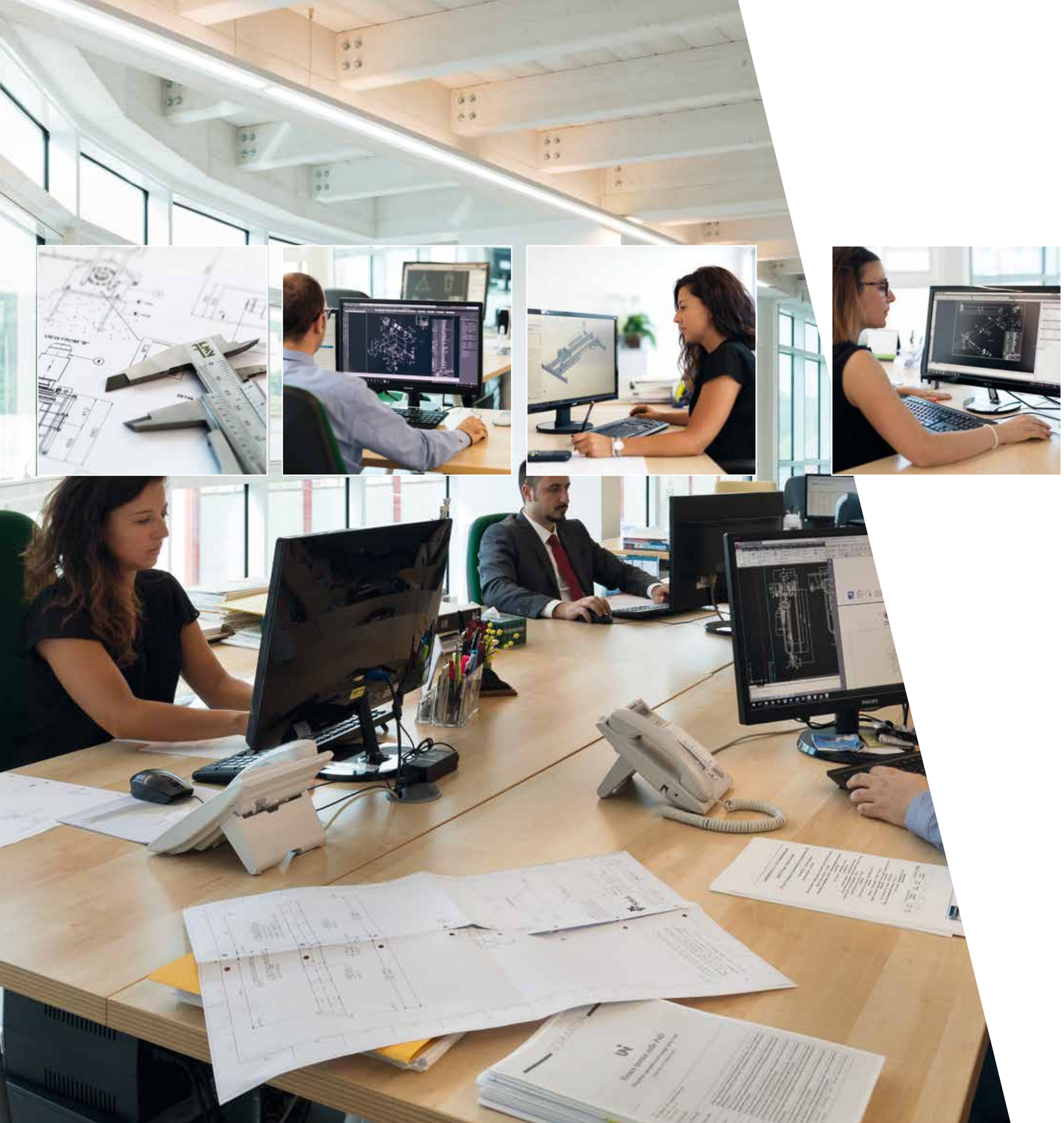
OUR **QUALITY**

Dedication, professionalism and flexibility makes ETS one of the sharpest and dynamic companies in the lifting sector.

ETS offers to its numerous customers highly specialized products, made of high quality material and certified technological procedures.
Our engineers flank the client in the execution of industrial prototypes and projects creating the perfect design to fulfill the stringent requirements that must be met.
Competence is based on project knowledge resulting from decades of experience and from the study of different applications, which are evaluated step by step with the customer design studies and with the third party organizations involved in the projects.
Acquired experience, tested preparation of our technicians and a well- trained technical department allow us to supply a product and service that is able to reply to the requests of an increasingly demanding market.

01.3

OUR **PROCESS**



From an idea to its creation.

ETS designs its machines according to a clear and solid production process that starts with an idea which is then transformed through the production process into the final product.

ANALYSIS
The study of customer specifications and interfaces together with the various technical departments in search of the best design solution.

DEVELOPMENT
Engineering and development of a model using a 3D interface to verify the adequacy of the initial choice.

PREPARATION
Preliminary assessment of possible solutions based on the performance of the machine required.

PROJECT LAUNCH
Creation of a task force for the launch of the project, and the production process according to strict quality protocols.

01.4

OUR **CERTIFICATIONS**

DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

ETS ENGINEERING TRASPORTO SOLLEVAMENTO S.p.A.

UNI EN ISO 9001:2008 (ISO 9001:2008)

DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

ETS
Engineering Trasporto Sollevamento S.p.A.

BS OHSAS 18001:2007

DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

ETS
Engineering Trasporto Sollevamento S.p.A.

UNI EN ISO 14001:2004 (ISO 14001:2004)

DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificato No./Certificate No.:
CERT-02707-98-AQ-BOL-SINCERT

Data prima emissione/Initial date:
07 marzo 1998

Validità/Valid:
19 febbraio 2016 – 15 settembre 2018

Si certifica che il sistema di gestione di/This is to certify that the management system of

ETS ENGINEERING TRASPORTO SOLLEVAMENTO S.p.A.

Zona Industriale Ganga, 152/A e 153 - 61045 Pergola (PU) - Italy

È conforme ai requisiti della norma per il Sistema di Gestione Qualità/
has been found to conform to the Quality Management System standard:

UNI EN ISO 9001:2008 (ISO 9001:2008)

Questa certificazione è valida
per il seguente campo applicativo:

Progettazione, produzione, collaudo, installazione ed assistenza di gru a ponte, a cavalletto, a bandiera, di paranchi, argani, bilancini di sollevamento e relativi accessori

(Settore EA: 18)

This certificate is valid
for the following scope:

Design, manufacture, testing, installation and assistance of bridge cranes, gantry cranes, jib cranes, winches, hoists and spreader bars for lifting and related accessories

(EA Sector: 18)

Production, environment and safety

Quality systems are sometimes misunderstood as nothing more than a heavy administrative load: difficult to implement and unable to provide business benefit or improvements. On the contrary integrated management system is a way to provide continuity throughout operations.
It's the link between policy, performance and targets.
The quality is more than a manual, and more than the certificate on the wall. It's a critical tool that helps us to meet the most demanding market desires.

1. Improve efficiencies
2. Mitigate risks during design, production, installation and use
3. Exceed customer requirements

That's the reason why ETS has decided to create and develop an integrated management system of quality based on strictly respect of applicable rules, first of all Machine Directive 2006/42/EC and Atex Directive 2014/34/EU and culminated in the acquisition of ISO 9001, ISO 14001 and OHSAS 18001 quality certifications in collaboration with DNV-GL.
These certifications are expression of a quality recognized worldwide, which explains and represents the values of the company.

DESIGN

02

RISK **ANALYSIS & ASSESSMENT**

Risk analysis and assessment.

2006/42/EC Machinery Directive states that " The manufacturer of machinery or his authorized representative must ensure that a risk assessment is carried out in order to determine the health and safety requirements which apply to the machinery. The machinery must then designed and constructed taking into account the results of the risk assessment."

Lifting equipment is included in this statement.
Manufacturers must perform a risk assessment that determines all risks that may arise when using the lifting equipment for its intended purpose and that takes into account any foreseeable misuse.
Manufacturers must define all possible risks arising from dangerous situation and set out all measures that can be used to avoid or minimize those risks.
The risk assessment must be the starting point for equipment design and construction and operators of lifting equipment are obliged to carry out a risk assessment for this equipment.
There are some major elements to be considered and taken into account when performing risk assessment:
- Connections with other equipment at site when the lifting device is in operation.
- Possible and Foreseeable Risks when using the lifting itself.
- Possible and Foreseeable Risks that may accur between the lifting equipment and the working environment.

Moreover, all operators must be aware of how and when to perform testing activities for star-up and later for maintenance purpose.
Employers also have to identify and establish the requirements to be fulfilled by personnel appointed by them to test and trial the lifting device.
The Risk analysis is mandatory and can be sometimes complex and challenging but ETS has decided to never compromise on this matter.

02.1

STANDARDS & RULES

Design for manufacturing and execution of lifting equipment.

DIN EN13155 Cranes-Safety-Non-fixed load lifting attachments

DIN EN ISO 5817 Reference standard for the assessment of welded joints and component-specific applications and test certificates; required evaluation class: B

EN ISO 12944-(x) Corrosion protection of steel structures by protective paint systems; required execution class: C3/P1 in the relevant parts (x) of the standard

Eurocode 3-(x) In the relevant parts of the section on the "Design and construction of steel structures"

EN13001-(X) Cranes-design (old national standard: DIN15018) In the relevant parts(x) of the standard

Machinery Directive EC Machinery Directive 2006/42/EC

ASME IX ASME Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators

AWS D1.1 Structural Welding Code - Steel

EN 15614-1 EN 287-1 Specification and qualification of welding procedures for metallic mater - Welding procedure test

Compliance & Certification with Third Party Standards & Regulations (DNV, ABS, RINA, SGS, BV, Lloyds) also available.

QUALITY

03

MATERIALS **TESTING**

All our tests are performed, during production and mandatory final inspections can be performed always by an independent testing inspector.

Magnetic particle examination
Magnetic particle Inspection (MPI) is a non-destructive testing (NDT) process for detecting surface and slightly subsurface discontinuities in ferromagnetic materials such as iron, nickel, cobalt, and some of their alloys. The process puts a magnetic field into the part. To identify a leak, ferrous particles, either dry or in a wet suspension, are applied to a part. These are attracted to an area of flux leakage and form what is known as an indication, which is evaluated to determine its nature, cause, and course of action, if any.

Dye penetration
Dye penetration also called liquid penetrant inspection (LPI) or penetrant testing (PT), is a widely applied inspection method used to locate surface-breaking defects in all non-porous materials (metals, plastics, or ceramics). The penetrant may be applied to all non-ferrous materials and ferrous materials, although for ferrous components magnetic-particle inspection is often used instead for its subsurface detection capability. LPI is used to detect casting, forging and welding surface defects such as hairline cracks, surface porosity, leaks in new products, and fatigue cracks on in-service components.

Ultrasound testing
Ultrasonic testing (UT) is a non-destructive testing techniques based on the propagation of ultrasonic waves in the object or material tested. In most common UT applications, very short ultrasonic pulse-waves with center frequencies ranging from 0.1-15 MHz, and occasionally up to 50 MHz, are transmitted into materials to detect internal flaws or to characterize materials.

03.1

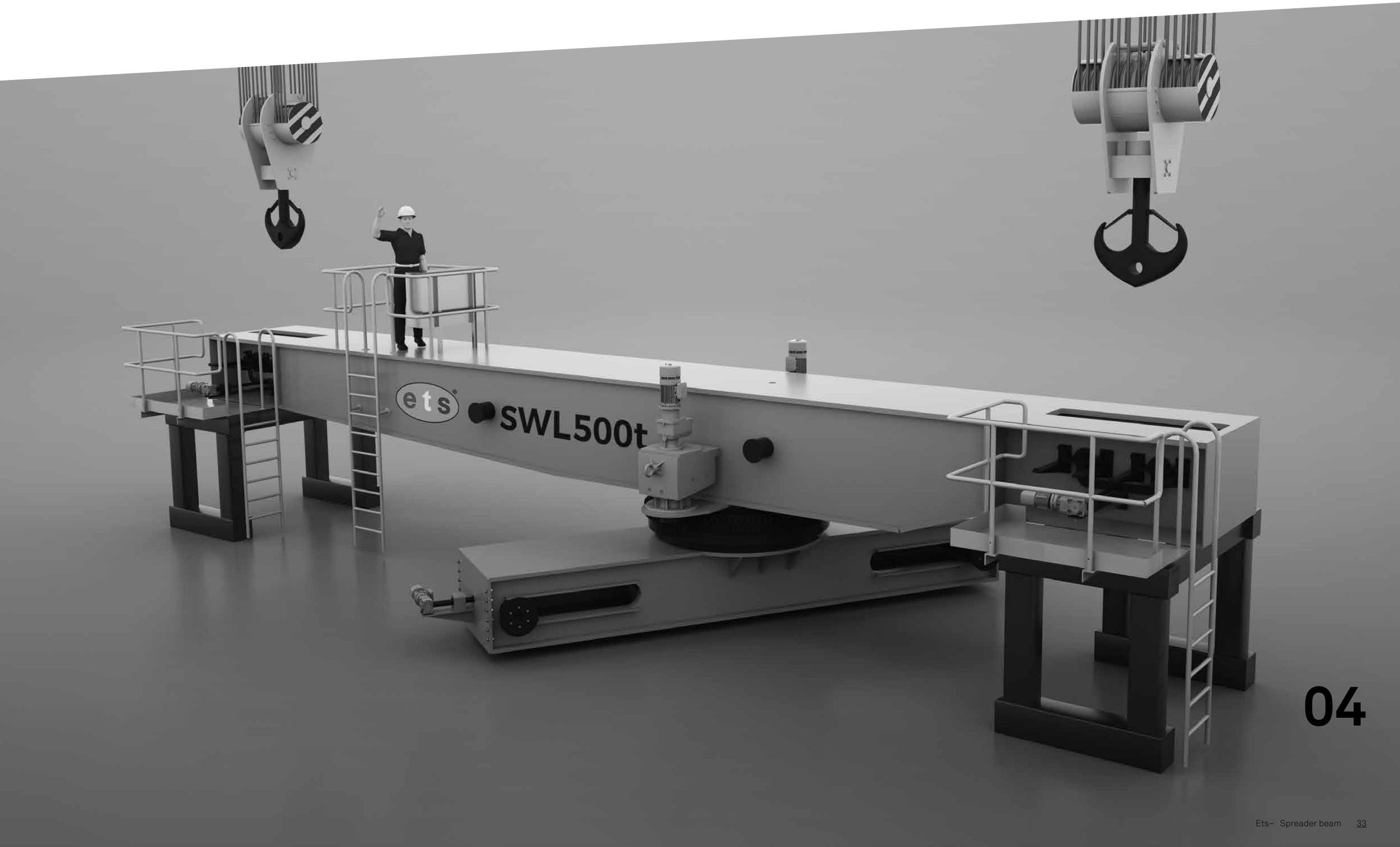
OUR **DOCUMENTATION**

One of the most important aspects of the process is the Documentation.

Documentation is an indispensable element for placing the product on the market and for the proper use of the machine.
Complete papers, with drawings, calculation report, material certificates, non-destructive tests, dimensional controls, paint checks, laboratory tests, load test reports, and calibration certificates of internal monitoring systems, ensure the congruity between what has been produced and what specifications and standards require.
Most updated calculation systems, cross-checking systems, laboratory tests by independent external bodies, project audits through Notified Bodies make the machine's documentation a key factor for customer satisfaction and quality assurance..
Full traceability means fulfilment of client expectations.

03.2

PRODUCTION



04

INDUSTRY

04.1

INDUSTRY

04.1

ENERGY

04.2

ENERGY

04.2

OIL & GAS

04.3

OIL & GAS

04.3

SUBSEA

Subsea Spreader Beam.

ETS is specialized in the design and manufacturing of subsea spreader beam specifically studied to be suitable for water submersion by eliminating the risks of cavity or pressure issues.
Special attention is dedicated to material selection, welding procedures and testing and painting philosophy to assure the highest performance level.
ETS complies with European Standards and DNV rules.

04.4

LIFTING BEAMS

05

MAIN **FEATURES**

In the manufacturing sector of lifting beams, ETS offers to its customers a rich range of technical solutions.

Possible designs are:
- Linear with two or more lifting points
- Orthogonal with four or more lifting points
- Extensible or removable modular to be easily transportable from one site to another
- According specific requirements

LIFTING SLING AND ACCESSORIES
In order to guarantee a quality level for all the lifting equipment according to the highest worldwide range, ETS has selected as partners the best European sub-supplier specialists in the manufacturing of hoisting equipment for the heaviest lifting applications such as grommets, cable-laid grommets, wire rope slings etc., as well as lifting accessories such as shackles, turnbuckles, sockets, thimbles, pulleys and blocks.
The range is complete for any type of request.

TESTING MACHINES
& LOAD TESTS

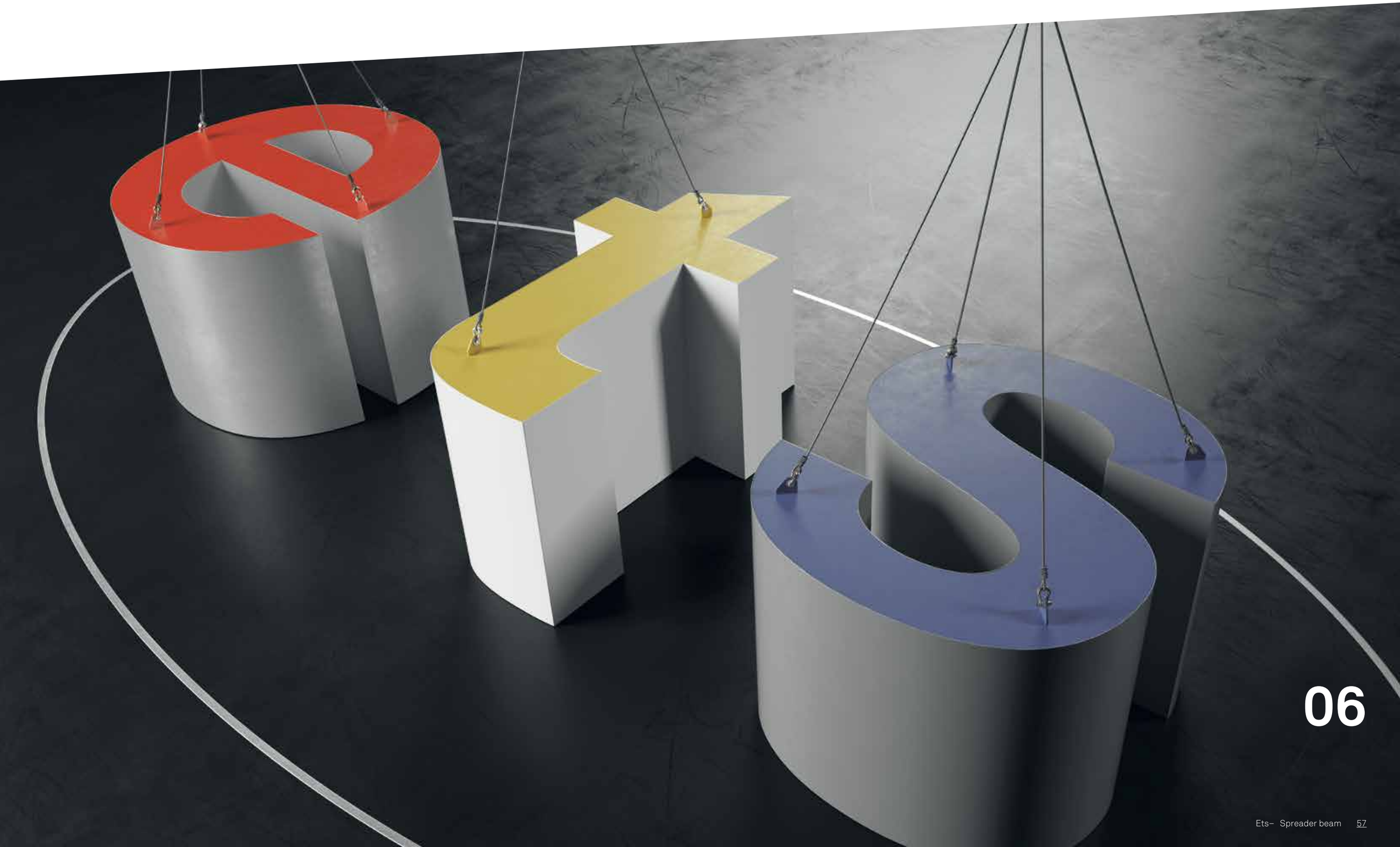
One of the main challenge of this market is the essential requirements to supply a complete lifting system tested and certified before the use at site and therefore before delivery.

ETS has designed and manufactured a Testing Machine to test Lifting Spreader Beam itself with capacity up to 1000tons.
The structure is designed to simulate the real lift action on the lifting bar in configuration with 2 hydraulic cylinders to 540Ton.
The machine is certified by third body – Bureau Veritas.
Moreover ETS has designed and manufactured an impressive TEST BED with capacity up to 500 Ton. and length 25 mts.
This is Test Bed is specifically used to test ropes, shackles and turnbuckles. A dedicated software provides all necessary information about testing activity.
Thanks to the Testing Machine and the Test Bed, ETS is able to provide a Lifting System fully certified with Notified Body.
This is the maximum expression of a Total Service Experience.

SPECIAL TESTS & PROTOTYPES

05.3

AFTER SALES SERVICES



06

SAFETY & OPTIMIZATION

To deliver constant support and maximum product optimization.

With each effort to improve service quality: security, experience, speed, commitment and savings are all well-versed concepts for ETS.

SAFETY
Over the years, ETS engineering has matured a conscience driven by safety through large scale investments in consulting and after-sales services.

OPTIMISATION
E.T.S. Engineering is able to offer a complete service in Italy and abroad including: regular maintenance, emergency maintenance and replacement of worn parts using the most technologically advanced equipment, therefore ensuring the reduction of operating costs and expensive downtime.

OUR **STANDARD CONTROLS**

We leave nothing to chance

LIFTING EQUIPMENT
We carry out standard checks for lifting using the following specifications:
- Suspension of the Hoist.
- Cables and restrictions.
- Struts and Loading hooks.
- Drum – Guide ring – cable tensioner.
- Engine – Brake – Reducer.
- Emergency and work limit switches.

SLIDING EQUIPMENT
We carry out standard checks on sliding winches based the following specifications:
- Control of chucks.
- Control of idler wheels and driving gears.
- Engines – Brake – Reducers.
- Limit switches and operation switches.

TRANSFER EQUIPMENT
We carry out standard checks on translational winches based on the following specifications:
- Trolley.
- Engine – Brake – Reducer.
- Idler wheels and driving gears.
- Limit switch.

ELECTRICAL EQUIPMENT
We carry out standard checks on electrical equipment based on the following specifications:
- Control of electrical cabinets.
- Alarms.
- Pushbutton panels.
- Condition of cables and connections.
- Remote control.

06.2

TOTAL **COVER**

Spare parts, scheduled assistance, upgrades, training, emergency work.

SPARE PARTS
ETS engineering offers a complete range of spare parts for all its machines and cranes on the market, guaranteeing a prompt and efficient service.

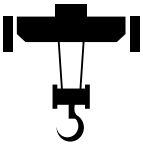
SCHEDULED ASSISTANCE
ETS's maintenance schedule for bridge cranes guarantees not only correct servicing of your cranes in conformity with current legal requirements but also detects possible malfunctions in good time, limiting costly downtime. For this reason, ETS offers a maintenance subscription service. It is a Full Service that enables our customers to increase the life span of their cranes.

UPGRADES
Just because a machine is old does not mean it has to be scrapped. By carefully checking the pieces to be replaced, the residual life-span of the crane can be increased.

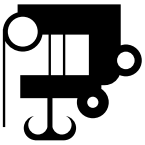
TRAINING
Most accidents in the lifting sector are caused by operators. For this reason, ETS aims to minimise the occurrence of these accidents by offering a training service and courses for crane operators. Our programmes put safety first and foremost.

EMERGENCY WORK
We promise to be with you within 36/48 hours, wherever you are.

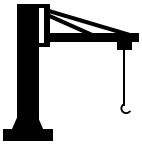
OTHER PRODUCTS
& SERVICES



Bridge cranes



Hoists and winches



Jib cranes

Transfer trolleys

After-sale services

ets®
engineering
trasporto sollevamento

by Bold group

E.T.S engineering trasporto sollevamento s.p.a.
Zona Ind.le Ganga, 153 - 61045 Pergola (PU) Italy
Phone +39 0721/775450, Fax +39 0721/775451
ets@ets-spa.com - **www.ets-spa.com**