



global fastening solutions
WIND ENERGY



automotive - **wind energy** - aeronautics - petrochemical - nuclear - civil engineering - rail - naval

www.tsftsh.com

Company



History

TSF, founded in June 1996, is a company dedicated to the marketing of hardware and fasteners, as well as its engineering, calculation and integral logistics.

In the beginning, the main activity was focused on the marketing of automotive hardware.

Later in 2004, begins its journey in the renewable energy sector, combining the two activities with expertise engineering to calculate bolted joints and an effective integral logistics service for our customers materials.

At present we supply our products and services in over 20 countries within and outside the EU in diverse logistics systems.



Services

Location, selection and follow-up of both national and international suppliers.

Management of purchases, warehouses, security stocks...

Delivery of goods according to each customer's requirement: Entrega de materiales según requerimiento del cliente JIT, Kanban, según programación.

Analysis of needs and improvement studies.

Our large level of stock enables us to give an immediate response to our customers' needs.



Blades Studs

T-Bolt



Improved Perpendicularity Nuts Couplers

Bushings, Elastic pins, Washers



- We supply kits of different fasteners for all the parts of the windmill: (Foundation, Tower, Nacelle, Hub, and blades), with total traceability).
- We supply screws from M-2 up to M-100, cold, hot stamped and machined, depending on the size and characteristics of each pieces and according to each customers specification.
- All the components are manufactured according to ISO production standards:ISO 898/1 e ISO898/2 and the specification agreed with the customer.
- All the products are validated by an internal or external laboratory.
- Our fasteners provide unitary crack analysis through Magnaflux.
- Our fasteners are supplied with thread protection.
- Test 3.1b supply under customer requirement.



Manufacturing

TSF has in its workshop various high end productive systems for the manufacturing of parts per revolution, mainly parts threaded by rolling. We also have metrology equipments to ensure customer requirements in process, as well as in final product.

In TSF we define stable and reliable processes to always ensure the quality of our products. We are constantly integrating new technologies in each process to be ahead of the current quality standards.



Materials

Our certified raw material comes from steelmakers recognized worldwide. This fact allow us to fulfill with our products any international material specifications as ISO, DIN, SAE, JIS, BS and many others.



Machining

For the manufacture of special parts or carrying out second operations of high accuracy, with this process integrated in TSF, we are capable of offering a quick response in service to our customers.



Thread rolling

We are able to provide the highest requirements on special parts by thread rolling even after heat treatment, reaching up to 100 mm of diameter under this requirement.



Traceability

Our products are marked with the manufacturer identification, as well as the quality, and the production batch figure that ensure the complete traceability.



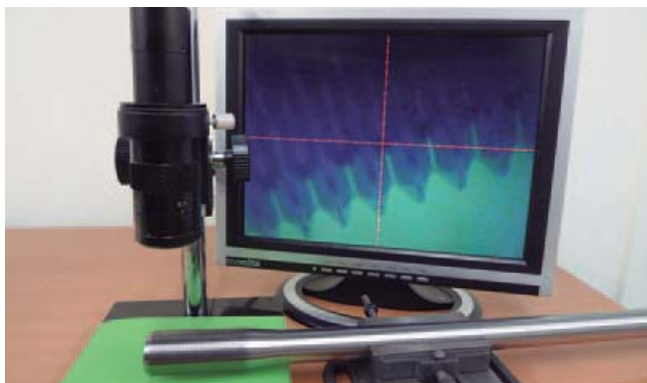
Nuts perpendicularity improvement

We produce improved perpendicularity nuts, including this added value to the accessories, always with the aim of getting an improved assembly and better technical characteristics as preload value or lower dispersion.



Coating

Our long development in the automotive field has instructed us in the most advanced technologies for coating applications. This expertise is also applied to the different kind of finishings required by our customers in their different sectors.



Inspection

Our manufacture follow a flow chart with continuous control through measurements and registers of each stage of the process, that will be expressed in our final quality certificate collaborating with external laboratories for the extra tests required as per each customer specification. dimensional check and Eddy current systems to guarantee the optimal metallographic structure on safety and high responsibility products.



Packing

We adapt to each customer packing specification, in kits, with thread net protection, even in returnable boxes



Logistics



Storage

TSF has its facilities fully palletized in a warehouse of 5,600m with capacity for 15,000 pallets.

Our computer system allows us to manage the stocks of our customers in an individual way, both in our facilities and in their own due to the type of identification and traceability implemented by TSF.

Kits, preassemblies and assemblies

TSF in addition of being an expert in supply of materials according to different methods as JIT, Kanban, as scheduled, and so on. Kits can also be supplied for different chain assemblies and sub-assemblies as well as preparing Kits with other items than those provided by TSF keeping and documenting the full traceability of the various components that compose them.

Integrated materials management

We carry out needs analysis and improvement studies with the client to define and particularize the most viable solutions to specific problems.

Integrated Management of materials and suppliers, whether of TSF or indicated by the customer.

Location, selection and monitoring of providers nationally and internationally. We offer our clients extensive experience and network of contacts that give them effective and time saving in the identification of valid providers.

Management of purchases, warehouse, agreed security stock, packaging, even payment to suppliers proposed by the customer.

The preparation of materials to the needs of client companies, ensuring agreed quality standards and certification as initial samples and homologations.

Quality

TSF incorporates quality management as an essential part of its strategy and development. So in the year of its founding was certified ISO 9002:1994 and at present is certified ISO 9001:2008 and ISO TS-16949. Our practice of quality is included in the products, services, environmental policy and labor risks prevention.

Due to the implementation of quality policy we guarantee that manufacturing of our products and our value process meet the specifications of our customers.

Our environmental commitment is to reduce the impact on the environment of our products, services and operations, seeking for TSF activity as that of our suppliers and customers to be more sustainable.



Traceability

TSF ARAZURI NAVARRA Tfn: 94 948 324420 www.grupotsf.com		O.F. 9001355/1				
Nº REFERENCIA PROVEEDOR: GP0CRITIC						
DESCRIPCION TORNILLERIA CRITICA GP055433	CAJAS 1/1					
Nº REFERENCIA	UBICACION: 491/ 1/ 1/ 1					
TSF Formación		Fecha: 18/01/2009		Hoja: 1		
MAGINA: MONTAJE DE...		O.F.: 801034 Nº PROCT: 16-20				
PEDAJAS		Nº ALBARAN				
Referencia	Descripción	Cant.	Entrega	Unid.	Fecha	Proveedor
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801034-02	801034-02 CAJA DE TORNILLOS	1,00	18/01/09	CAJAS	18/01/09	GP0CRITIC
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801034-10	801034-10 CAJA DE TORNILLOS	1,00	18/01/09	CAJAS	18/01/09	GP0CRITIC

LOGO: 27/01/2011
BARNA RED: 637.65X6000 C10
CODIGO TSF: M102756000
LOTE: 55324
FECHA: 27/01/2011
ALBARAN Nº: 80591780
PROVEEDOR Nº: 1291

CONTROL RECEPCION
OK

Alm	Est	Alt	Hue
7	2	1	1

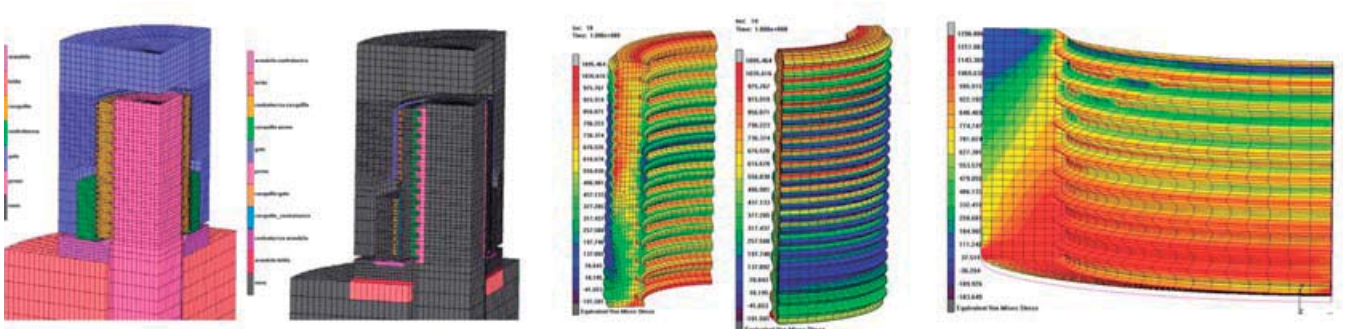
We offer our integral traceability service to companies that require high levels of quality as well as to all products under customer specification, bringing benefits from raw material to finished product.

An optimal management of integral traceability on materials provides significant cost and resources savings, locating and identifying any lot or piece when necessary.

All materials are traced and documented from raw materials, manufacturing, heat treatment, surface coatings and packed up their delivery to customers, who from in different shapes to choose from, will be given all the documentation regarding to his materials. "Link to photos of pallets and nameplates"

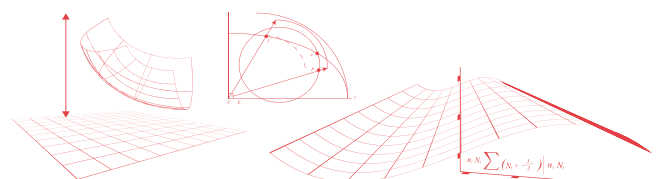
The traceability of all the different item batches to their raw material are designed on the delivery notes, invoices, packaging and labeling indistinctly.

Engineering



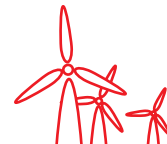
Calculation and development of bolted joints for automotive, aeolian, construction, equipment, etc. For the calculation of the unions, the engineering of TSF has a powerful simulation tool using finite elements. The program used is the prestigious MSC.MARC.

The customer is offered the solution with our design and geometry and the certification of such unions in government agencies.





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Norte 2 4, Nuevo San Juan
76807 San Juan del Río,
Querétaro **México**
Tel.: + 52 55 5082 0185
infomx@tsftsh.com



Johannes - Obernburger - Strasse 14
63785 Obernburg, **Germany**
Tel: +49 6022 2655675
Fax: +49 6022 2655680
Mobil: +49 172 9716185
infode@tsftsh.com



Área Industrial Arazuri-Orcoyen.
31170 Arazuri, Navarra. **Spain**
Tel.: +34 948 324 420
Fax: +34 948 324 388
infoes@tsftsh.com

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