

Exporting jigs and fixtures to Europe

Many European countries are home to some kind of assembly line production. These countries offer opportunities for exporters of jigs and fixtures. Germany is especially interesting for exporters from developing countries. In addition, the high labour content in jigs and fixtures production, design, engineering and testing offers opportunities. The best chances are for relatively complex and costly jigs and fixtures.

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1. Product description

Jigs are custom-made tools used to control the location and/or motion of another tool. A jig's primary purpose is to provide repeatability, accuracy, and interchangeability in the manufacturing of products. A jig is often confused with a fixture. While a fixture holds the work in a fixed location, the device that does both (holding the work and guiding a tool) is called a jig.

Welding jigs are also called 'frame jigs'. They can be defined as follows: a device designed to allow something being welded to be held in such a way that the intended shape is made and can be made repeatedly using the jig. In this manner each unit produced by the jig has the same dimensions. In other words, welding jigs are a special type of jigs, controlling the location and/or motion of welding equipment.

Welding jigs are used in medium-to-high-volume production lines. Such production lines can be found in many industries, from car, bicycle and truck manufacturing to the fabrication of household equipment such as beds and the prefabrication of welded constructions and equipment for machinery, for example.

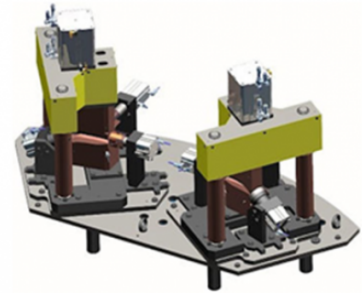
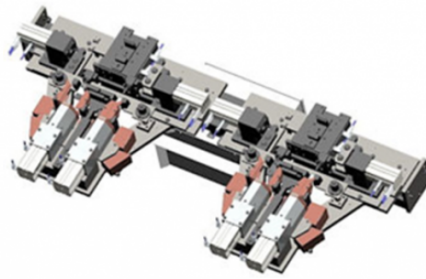
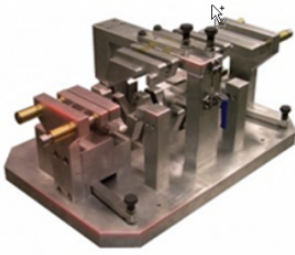
When 'jigs and fixtures' are referred to in this survey, this term relates to the following Harmonised Standard (HS) codes in chapters 8466 and 8515, unless stated otherwise:

- 84662010 and 84662020 - Jigs and fixtures
- 85159000 and 85159090 - Welding jigs

The [TARIC database](#) shows more details for these codes if you enter both the code and a random country of origin.

Product specifications

Jigs and fixtures are often tailor-made, as they have to fit the products which they need to hold in place. They are usually made of hardened materials such as cast iron, die steel, CS and HSS in order to resist wear and to avoid frequent damage. Pictures below show a few examples of jigs and fixtures.



From left to right: custom jig, mounting jig for seating components, welding jigs for exhaust system



Welding jig ([Sherani Engineering](#), Pakistan)

Specifications of jigs and fixtures as required by European buyers can be categorised as follows: great precision in positioning and location, maximum possible adaptability and process safety, and easy maintenance. These three specifications are explained in more detail below.

Precision

The jigs and fixtures must offer the required precision during production. Ensuring accurate dimensions of the final products can be very demanding; for instance, in the case of welding jigs for bed frames production, tolerances may have a maximum of approximately 0.5 mm.

Note that, notwithstanding the clear categorisation of certain types of products, definitions of what constitutes low-, medium-, and high-precision items vary by product application and end use market. This is why the final use and intended market segment or consumer affect the levels of precision needed and the subsequent degree

of accuracy built into the required jigs and fixtures.

Adaptability

In many cases, customers require the jigs and fixtures to be used in the manufacturing of more than one product. As a result, they want the jig or fixture to accommodate the production of various combinations of width and length. Welding cases must therefore have engagement points for all the product variants that a customer wants to put out on the production line.

Furthermore, shims can be used at critical tolerance positions in welding jigs to compensate for the distortion of the product during welding. These shims allow adjustment during test phase or preliminary trials.

Safety and easy maintenance

The jigs and fixtures must guarantee optimum safety during production and offer good ergonomics and ease of use to machine operators, for example through a tilting lift design. The welding jig should also be strong enough to resist scratches and erosion. It should also prevent welding impact and spatter adhesion. For example, welding jigs can be made of high-quality plasma nitride steel (hardness >700 HV).

The development of jigs and fixtures for European customers can take between 4 and 50 weeks. This figure depends on the customer's requirements and on the production basis – some projects start from scratch, while other projects can be based on existing, established designs. The projects for which exporters from developing countries could act as partner take approximately 8 to 12 weeks and often involve jigs or fixtures with a cost price of more than €5,000 when based in European production.

There are many possible variations in the production setup, varying from fully or semi-automatic to manually operated. For example, the clamping and discharge of components can vary (for instance, manual or pneumatic), while welding, inspection and other functions can also vary between manual and 100% automatic operation.

Labelling and packaging

Depending on the product characteristics and customer wishes, jigs and fixtures can be packed in wood, plastic or in containers. In the case of a heavy fixture, for example, the outer package is a heavy box with the jig or fixture secured with help of a range of supporting materials such as wooden beams. For examples of jigs and fixtures packaging, see pictures below.



Examples of packed jigs and fixtures

The European Union maintains a set of requirements on packaging and labelling; see the [EU Export Helpdesk](#) for more information on these requirements.

The package for ocean transportation may be wooden pallets wrapped with wooden sheeting, strengthened with metal strips on the exterior.

In some cases, the packaging and labelling requirements are included in the customer's specifications.

Lastly, for the purposes of identification during transport, packaging should always be labelled. You have to indicate the following details:

- Quantity
- Weight
- Products themselves
- Name of the producer
- Name of the customer

2. Which European markets offer opportunities for exporters of jigs and fixtures?

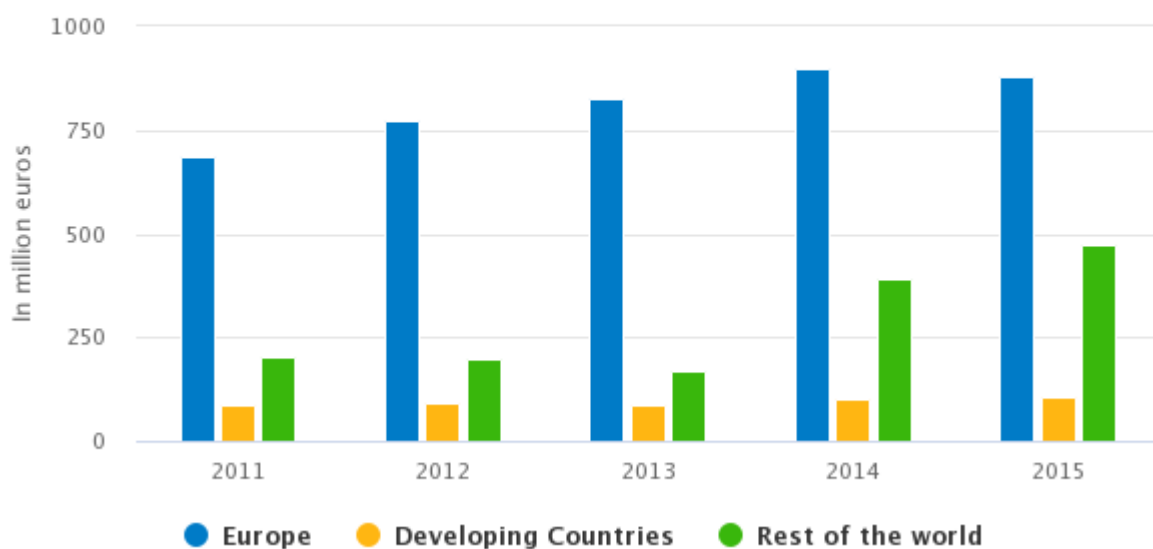
Imports

European import of jigs and fixtures has increased by 11% per year since 2011 reaching €1.5 billion in 2015. On the one hand, this was caused by the relatively weak reference year 2011. On the other hand, it was also the result of the growth of investments in industrial production lines which have jigs and fixtures as their components.

Jigs and fixtures were mostly imported from countries within Europe. However, the import from developed countries outside Europe ('Rest of the world') showed the largest growth in the four years under review (+24% per year on average).

The import share of Europe dropped from 65% to 60%, whilst the share of the 'Rest of the world' (dominated by Japan) increased from 28% to 32% in four years' time. In 2015, imports from developing countries represented 7% of all European imports. For the coming years, the share from developing countries is forecast to remain relatively stable.

Figure 1: European import of jigs and fixtures by main origin
2011-2015



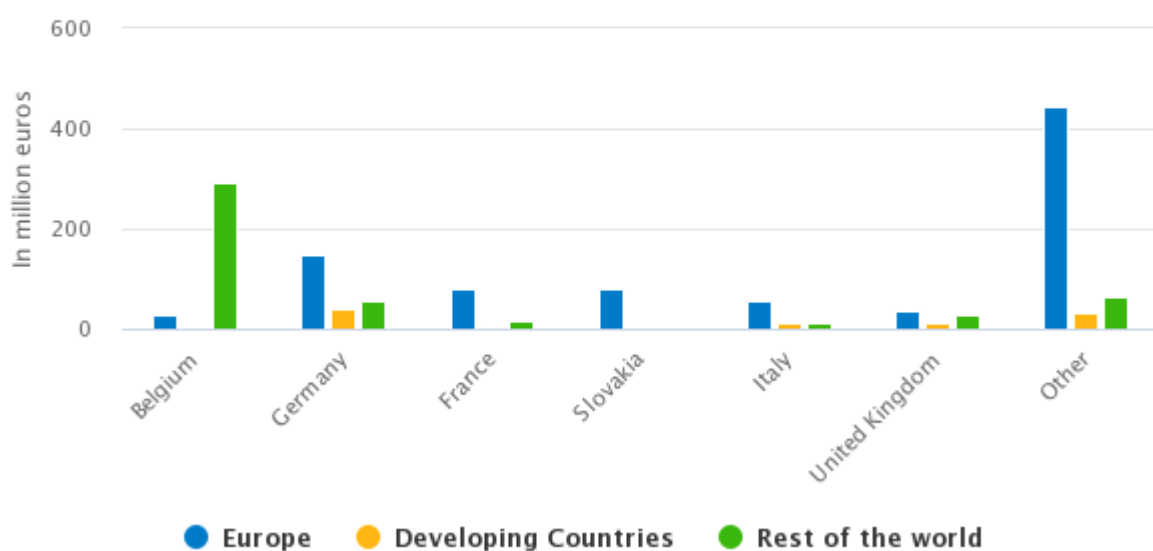
Source: Trademap

In the period under review, Germany has been the largest importer almost every year, with the exception of 2015. In that year, because of an import of jigs and fixtures from Japan worth €280 million, Belgium surpassed Germany as the largest importer. This development is fairly unexpected and difficult to explain properly.

In 2015, Belgium and Germany together represented 39% of European imports. In terms of imports from developing countries, Germany is the dominant country (€40 million), followed by Italy (€13 million) and the United Kingdom (€12 million).

Germany also showed the largest absolute growth in imports from developing countries (€6 million in four years' time). The import of jigs and fixtures is expected to show a small growth in the next few years, in the range of 1 to 3%. This is because the strong growth in previous years is expected to slow down in the coming years.

Figure 2: Leading European importing countries of jigs and fixtures
2015



Source: Trademap

Leading suppliers

Germany and Japan are the leading suppliers to Europe. Together, they represented 46% of the total import of jigs and fixtures in 2015. Other leading suppliers are:

- Switzerland (6% share)
- the Czech Republic (5%)
- the United States (5%)

Imports from Developing Countries are dominated by China (€69 million in 2015, 5% share of total European imports). Out of these countries, Japan showed the highest growth in four years' time (+73% per year on average), followed by the Czech Republic (+9%), China (+8%) and Germany (+7%).

Tips:

Benchmark your company against your peers from China and those from European countries. Several factors should be taken into account, such as market segments served, perceived price and quality level, and countries served. One source which can be used to find exporters of jigs and fixtures per country is [ITC International Trade Statistics](#) (you have to register first).

You can get information about the latest trends and developments in the jigs and fixtures industry from international magazines and news sources. Please note, though, that these sources basically cover the standard jigs and fixtures. Examples are [European Tool & Mould Making](#) or national sources such as [Werkzeug & Formenbau](#), [Maschinen Markt](#) (Germany) and [Machinery](#) (the United Kingdom). You can use Google Translate to convert these websites to your own language.

You can use trade fair databases like [Eventseye](#) or [Auma](#) to find relevant trade fairs in Europe. Relevant trade fairs for jigs and fixtures suppliers are [AMB](#), [METAV](#), [MOTek](#) (Germany), [Manufacturing UK](#) (United Kingdom), [Midest](#), [Industrie Expo](#) (France) and [EMO Milano](#) in Italy.

Exports

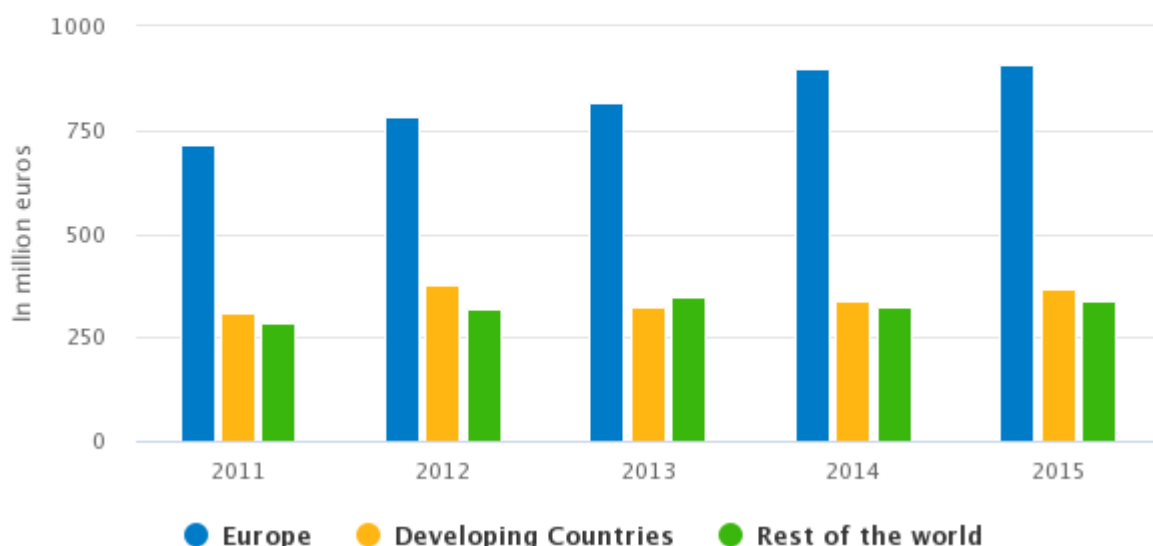
Total European export of jigs and fixtures increased by 5% per year between 2011 and 2015 to €1.6 billion. The export of European jigs and fixtures was mainly destined for other European countries.

In 2015, European exports to developing countries amounted to €366 million. The share of developing countries in European exports showed notable growth in the period under review, reaching 23% of all European export in 2015.

For the coming years, the share of developing countries is forecast to remain relatively stable. In practice, exports to developing countries mostly involve standardised jigs and fixtures. These types of jigs and fixtures are different from the non-standardised jigs and fixtures on which exporters from developing countries focus.

Figure 3: European export of jigs and fixtures to main destinations

2011-2015



Source: Trademap

Germany is the largest European exporter of jigs and fixtures (€681 million in 2015, 42% of all European exports). Other large exporters are:

- France (9% share)
- Italy (8%)
- the Czech Republic (6%)

- Austria (5%)
- the Netherlands (5%)

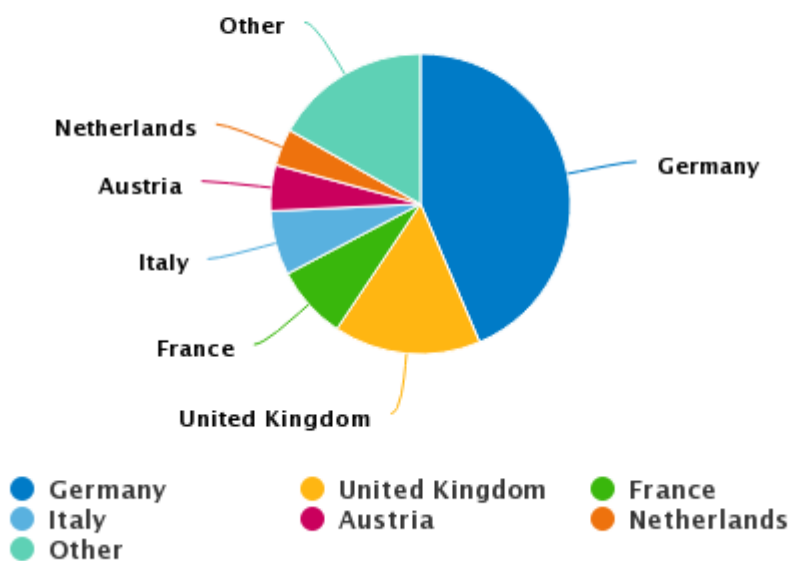
The countries with the highest absolute growth in exports to developing countries over four years' time are France (+€15 million) and Italy (+€13 million). The European export of jigs and fixtures is expected to show a small growth in the next few years, in the range of 1 to 3%.

Production

The annual growth of production of jigs and fixtures in Europe was +7% between 2011 and 2015. Thanks to a constant growth, the total of European production amounted to €1.9 billion in 2015. Figure 4 shows that Germany is the largest European jigs and fixtures producer (44% share).

Of the top six producing countries, France (+33% per year on average) showed the highest annual growth between 2011 and 2015. In the case of France, the reference year was a very weak year in terms of local demand and local production. After 2011, investments in production lines, including jigs and fixtures, recovered and grew strongly in France.

Figure 4: Main European producers of jigs and fixtures in %
2015



Source: Eurostat Prodcom

Tips:

Producers can be found especially in Germany and the United Kingdom, but also in several other countries. These countries therefore offer good subcontracting opportunities.

Take a look at each country's associations for the jigs and fixtures sector. Examples include [International Special Tooling and Machining Association](#), [European Association of Machine Tool Industries](#), [European Welding Association \(Europe\)](#), [German Machine Tool Builders' Association, VDMA](#) (Germany), [The Manufacturing Technologies Association, GTMA](#) (the United Kingdom), [SYMOP](#) (France), [UCISAP](#), [UCIMU](#), [ANASTA](#) and [ANIMA](#) from Italy.

Industrial demand

European demand for jigs and fixtures increased by 11% per year between 2011 and 2015, amounting to €1.7 billion in 2015. The machine tool and welding equipment industry (and thus the demand for jigs and fixtures) experienced a growth in production and exports up until 2008-2009 when it was hit by the economic turmoil, which led businesses to postpone new tooling and equipment purchases. Since 2010, the European market has increased year by year, with the highest annual growth realised in 2011 (+30%).

The major determinant of jigs and fixtures demand is the spending activity in the end user industries. Jigs and fixtures demand depends mainly on the demand for new equipment and the level of investments in new products in a wide range of industries, such as automotive, rolling stock production, construction equipment, and other industries in which assembly line production is common. In general, both branches are boosted by economic growth. Note, however, that some market segments are relatively stable (e.g. medical), while others are very sensitive and do not always follow GDP development (e.g. automotive). Electronics and the engineering industry have a cycle that mostly corresponds to GDP development.

Germany, Italy, the United Kingdom, Belgium and France are the largest markets for jigs and fixtures in Europe. Together, these three countries represented 75% of the market in 2015. Each of these countries has its own specific market profile. Their market profiles can be described as follows:

Germany

Germany is the number one producer in virtually every industry in Europe. The country is well-known for its output of machinery, cars and electronics.

United Kingdom

Key manufacturing sectors in the United Kingdom include:

- Aerospace
- Automotive
- Defence equipment
- Electronics

The United Kingdom has a long tradition of producing machinery and equipment. Important segments include 'Agricultural Machinery' and 'Construction, Quarrying and Mining Machinery'.

Belgium

Belgium's main industries are:

- Engineering and metal products
- Automotive
- Aerospace
- Motor vehicle assembly

Belgium is particularly strong in textile machinery production.

France

France's leading industries produce a wide range of:

- Machinery
- Automobiles
- Metals
- Aircraft

- Electronics equipment

Most machinery production is focussed on agricultural machinery and machinery for textile, apparel and leather.

Italy

Italy's leading industries are:

- Iron and steel
- Machinery
- Motor vehicles
- Footwear
- Ceramics

After Germany, Italy is the second largest machinery producer in Europe. The country produces virtually all categories of machinery.

Tips:

Exporters from developing countries should focus on the countries with a relatively high production output of jigs and fixtures. These countries are home to a relatively large number of producers that offer subcontracting opportunities to exporters from developing countries. These countries are, in order of importance, Germany, the United Kingdom, France, Italy and Austria.

You can use [EU Export Helpdesk](#), [ITC Market Access Map](#) and [ITC Standards Map](#) for more information related to gaining access to the European market.

[Commisceo Global](#) offers a great deal of information on differences in business cultures and etiquette. You should pay some attention to this aspect before you start exporting to Europe.

3. What trends offer opportunities on the European market for jigs and fixtures?

In Europe, jigs and fixtures are relatively complex and expensive manufacturing tools in terms of design and production. This is mainly because of a high labour content in the development, engineering, manufacturing and testing. The costs deriving from the high labour intensity offer opportunities for producers from developing countries.

However, the complex nature of jigs and fixtures is also a barrier for subcontracting jigs and fixtures production to producers overseas. This is because well-designed jigs and fixtures made in Europe, while they are expensive to make in Europe, offer the guarantee of a stable product quality, a long lifetime with relatively low maintenance costs, and an increase in profit and production efficiency. Exporters that are able to combine quality with cost efficiency stand a good chance of delivering to European clients.

The automotive industry is the frontrunner in innovation

The automotive industry is often a frontrunner in new developments and trends. The major trend in the automotive industry is probably the continued downsizing of engines in terms of weight and size. This will increase the need for machining smaller parts. Suppliers of manufacturing tools, including jigs and fixtures, will need to adapt to this development and reduce the footprint of tools as well by:

- Switching to more environmentally-friendly processes, and
- Making equipment and tools smaller.

Importance of high-end segment

European machine tool producers are focused on high-end, customised machines with relatively longer production cycles, rather than on standard machines with short lead times. Major technological trends in the high-end segment include:

- Advances in machining technologies to create faster processes with fewer resources
- Processing technologies for new materials (such as glass, composites, titanium)
- Advances in precision, reliability and productivity
- Increasing automation to eliminate monotonous work and ensure a more extensive scope of delivery
- Improvements in machine-user interface to improve safety and ergonomic aspects

Recovery of the European manufacturing industries

The robust levels of the manufacturing indicators suggest that the manufacturing recovery in Europe is set to gain further ground in 2016 and 2017.

While previous years showed strong growth for investments in machinery and equipment (about 3% growth in 2014 and 4.5% in 2015), this growth is expected to be lower in 2016 and 2017 (2.5 to 3.5%). This forecast offers a good perspective for jigs and fixtures sales in Europe over the next few years.

Jigs and fixtures are seen more and more as part of the manufacturing process, not as an independent resource without connection to other processes. Jigs and fixtures makers in Europe therefore strive to ensure their integration into the value chain of their customers. Within this context, lean production, co-design and cooperation with customers and other suppliers are all becoming more and more important.

3D printing/additive manufacturing of jigs and fixtures is emerging

3D printing is changing the whole manufacturing industry. Companies are shifting from 'design for manufacturing' to 'manufacturing of the design'. This means that companies are now able to manufacture the required jigs and fixtures by themselves, with the help of 3D printing.

Nowadays, there are several 3D printing machines in the market that are able to produce jigs and fixtures with several benefits over traditional jigs and fixtures production, such as translucent features, anti-slip surface, sharp corners with deep contours, and more.

It is expected that the use of additive manufacturing will continue to increase in the next decade, as it saves costs and time and reduces inventory control problems.

Tips:

For more information on general trends, refer to our study [Trends for Metal Parts and Components](#).

See our research on [Trends for Automotive parts and components](#) for trends in the automotive industry.

Use [EU Export Helpdesk](#), the [ITC Market Access Map](#) and the [ITC Standards Map](#) for more information related to gaining access to the European market.

[Commisceo Global](#) offers a great deal of information on differences in business cultures and etiquette. You should pay some attention to this aspect before you start exporting to Europe.

4. What requirements should jigs and fixtures comply with in order to be allowed on the European market?

Requirements can be divided into: (1) legal requirements you must meet in order to enter the market and (2) non-legal requirements, which are those most of your competitors have already implemented; in other words, the ones you need to comply with in order to keep up with the market. See out study [EU Buyer requirements for Metal Parts and Components](#) for a general overview of requirements.

Legal requirements

As jigs and fixtures are parts only used in manufacturing processes, virtually no legislative requirements are applicable.

Packaging requirements

Europe sets requirements for wood packaging materials used for transport (including dunnage) ([Directive 2000/29/EC](#)). Another packaging-related directive is the general directive about [packaging and packaging waste](#) (Directive 94/62/EC). This directive prescribes the marking of the kind of packaging material used and the maximum levels of heavy metals in the packaging material.

Import duties

For jigs and fixtures, a [1.2%](#) (jigs and fixtures) or [2.7%](#) (welding jigs) duty is levied on European imports from countries outside Europe, which also covers China. Several countries benefit from a preferential 0% tariff, for example Turkey and South Africa.

The TARIC database shows more details for Chapters [8466](#) and [8515](#). Note that it is only possible to claim a preferential tariff treatment with a Certificate of Origin.

Tips:

Make sure that your wood packaging material is approved for the European market. If you are unsure, ask your wood packaging material supplier for clarification. Your wood packaging material supplier should take any further action required in order to comply with the Directive. If the supplier is not able to do so, it may be possible to switch to another supplier.

Be sure about the origin of your product and the correct use of preferential rules of origin. Depending on the trade arrangement between your country and the European Union, using preferences to import into the European Union may result in penalties. Research through the EU Export Helpdesk.

Non-legal requirements

The customer's main requirements will be related to the jigs and fixtures themselves, as described in "Production tolerance/Precision", "Adaptability" and "Safety and easy maintenance" in the chapter 'Product description'.

Public standards

Certification according to [ISO 9001](#) is a minimum which European buyers expect when searching for new suppliers. Additional certification, such as [OHSAS 18001](#) (health and safety), can be beneficial when promoting your company and products to potential customers.

There are also a few [ISO standards](#) (use the search bar to find relevant ISO standards) that apply to jigs and fixtures. The potential buyer will specify such standards in his request for quotation.

Buyer's specifications

The development of jigs and fixtures for a European customer can take between 4 to 50 weeks. Producing for the European market requires strong communication skills. This does not only apply to the communication skills of the sales manager (who is mainly involved in the presales and aftersales process).

Communication skills are even more important for the engineering and quality assurance and control departments. This factor should not be underestimated, as it is in fact another reason why European companies often choose a local partner for such development projects.

European customers may also want to keep control of all design, technical documents; sometimes they may even want to keep ownership. In order to safeguard this process, European customers may want to make sure already during the contract negotiations how the jigs and fixtures will be handled.

Tips:

See our [10 tips for doing business with European buyers of metal and plastic parts and components](#) and our [10 tips for finding buyers in the metal parts and components sector](#). The above tips also offer more information on which topics are decisive for European buyers when searching for (new) suppliers.

5. Through which channels can you find jigs and fixtures on the European market?

The European producers of jigs and fixtures are the most important trade channel for jigs and fixtures producers from developing countries. Manufacturing companies in Europe often employ subcontractors, including those from low-cost countries, which can be low-cost European countries but also developing countries.

For additional information, refer to our studies [Market Channels and Segments](#) and [Competition for Metal Parts and Components](#).

There are a few other trade channels, however, though these are less important. They include direct sales to end users of jigs and fixtures, and trade with distributors. The best way to approach prospects in Europe is to exhibit at the leading European trade fairs, such as [EMO](#), [AMB](#) or [METAV](#) in Germany.

The end users of jigs and fixtures are manufacturing companies that operate in a wide range of industries, for instance:

- Automotive
- Rolling stock production
- Construction equipment
- Other industries in which assembly line production is applied

Europe is home to several interesting players. As all companies are unique, with their own customers, market segments and products, the profile of potential partners is very important. You are very likely, however, to find a match. A short list with examples of prospects in the main European markets is given below.

Germany

- Producers of jigs and fixtures: [ALLMATIC-Jakob Spannsysteme](#), [Erwin Halder KG](#), [Heinrich Kipp Werk KG](#), [Schunk](#).
- Producers of fixtures: [ANDREAS MAIER & Co](#), [BEST](#), [BISON](#), [Kemmler Präzisionswerkzeuge](#).
- Producers of welding jigs: [Forster Welding Systems](#), [Robolution](#).
- Producer of chucking tools including vices: [Röhm](#).

United Kingdom

- Producers of fixtures: [Craftsman Tools Limited](#), [Taylor Design Engineering](#), [TOP](#), [TQC](#).
- Producer of jigs, fixtures, robotic welding tooling: [Magor Designs Limited](#).
- Producer of jigs and fixtures for machining, welding and assembly: [TRS Engineering Services](#).

France

- Producer of jigs and fixtures: [Norelem SAS](#).
- Producer of fixtures: [Loiretech](#).
- Producers of welding jigs: [Ets Bergheaud](#) and [FARMAN](#).

Italy

- Producers of fixtures: [Gerardi](#) and [Scm](#).
- Producer of jigs for welding: [Meccanotecnica Centro](#).
- Producer of jigs and fixtures for welding: [Mille Miglia Engineering](#).

6. What are the end market prices for jigs and fixtures?

To establish an export price, you need to consider a multitude of factors involved in pricing for the domestic market:

- Aim to set the price that the market will bear and keep in mind the quality-price ratio of your products. It should be in line with competitor prices
- Pricing is a mix of knowing your domestic costs and calculating costs you will incur in delivering and supporting your activities in a foreign market
- The negotiated price depends on the delivery conditions, method of payment, credit terms and currency risks, quantities and the method of transport
- Exchange rates fluctuate. Cover this risk by including the currency risk in the contract

Tips:

Include the currency risk in the contract.

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