

Exporting metal parts for process instruments to Europe

European imports of parts for process instruments from Developing Countries have increased every year since 2011. The share of Developing Countries is forecasted to grow to 12-13% in the coming years. The most interesting market is Germany, followed by the United Kingdom and France. Safety and environmental standards are becoming increasingly important and there is more and more automation.

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1. Product description

When 'process instrument parts' or '(metal) parts for process instruments' are referred to in this survey, this concerns the [Harmonised System](#) codes in Chapter 9026, paragraph 90. Note that this selection does not classify the type of material, which means that not only metal parts are included in the statistical data, but also parts made of other materials.

Product specification

Specifications of metal parts for process instruments as required by European buyers are described below. Furthermore, the pictures directly below show some examples of process instrument parts that are used in process instruments in Europe.



Pictures below show some examples of applications (or: instruments) in which instrument parts are used.



From left to right: mass flow meter, oxygen flow meter, pressure transmitter part, metal tube flow meter

In turn, process instruments are used in a very wide range of industries, as they are necessary when process variables need to be measured, such as temperature, pressure, level and flow. The largest market segments for process instruments are oil and gas, food, chemical and pharmaceuticals processing industries.

Material and design

Metal parts for process instruments are made of various materials. Such as cast iron, stainless steel (often SS 304 and for medium contact material it is more and more SS 316), carbon molybdenum, brass, titanium, nickel or copper. The majority of them are made out of carbon steel or stainless steel.

European buyers demand that parts are generally completely protected against corrosion and then finished by high quality machining or a polishing, shot blasting (stainless steel), coating or painting treatment. Depending on use, they should also be resistant to pressure or temperature variations. The exact requirements of the instrument parts are specified by the buyer and can vary per buyer or brand.

Labelling and packaging

Due to the great variety of process instrument parts, there is equally a variety of packaging methods. The standard means of transportation is wooden boxes for large and heavy parts and cartons for smaller and light-weight parts. Packaging and labelling is an aspect that is usually dealt with according to buyer specific requirements.

Last but not least, packaging must always be marked. Not only for the purposes of identification during transport, but also to indicate the quantity, weight, the products themselves and the producer's name.

Quality

The quality standards of European process instrument producers are among the highest in the world. Many of the European process instrument producers increasingly depend on exports. Therefore they have implemented stricter quality standards than before.

2. What makes Europe an interesting market for metal parts for process instruments?

Imports

European imports of metal parts for process instruments increased by 5% per year between 2011-2015. In 2015, total European imports amounted to almost €1.3 billion, which was nearly 6% higher than 2014. With that value, Europe accounts for a rough one third of the world's imports.

Metal parts for process instruments are mostly imported from within Europe, followed by 'Rest of World'. Import from Developing Countries has increased almost every year, but the share remained relatively stable at 10% of total European imports. Note that China is included in the group of Developing Countries.

Germany is the largest importer of metal parts for process instruments, followed by the United Kingdom and the Netherlands. Together, they held 50% of European imports in 2015.

In the same year, German imports reached €341 million, which was almost double of the import of the United Kingdom. Other important importing countries for process instrument parts are France and Italy.

Germany is also the largest importer of process instrument parts from Developing Countries (€37 million in 2015). Second largest was the United Kingdom (€21 million), followed by the Netherlands (€19 million).

With an absolute growth of +€9 million in four years' time, Germany showed the highest absolute growth of all European importing countries.

Leading suppliers

Germany, the United States of America, Switzerland, France, China and the Netherlands are the top six leading suppliers. Together, they represented 70% of the total European imports in 2015.

Holding 7%, China is the largest Developing Country supplier of process instrument parts to Europe. China was followed by India and Philippines at large distance.

The United States (16%) and Switzerland (9%) are the largest suppliers in the category 'Rest of World'. Of all important supplying countries, China showed the highest annual growth in 2011-2015 (9.7%), followed by France (9.5%) and Germany (8.3%).

For the coming years, the share of Developing Countries in total imports is forecast to grow to 12-13%. This is because more European companies will start to import parts from China in the next few years.

As European companies have gained considerable experience in importing from a diverse range of countries around the world, there are good prospects for further growth of the Developing Countries' share. However, the list of suppliers from Developing Countries will not change substantially, as the European buyers will prefer to expand outsourcing of metal parts from existing suppliers instead of starting to source in new countries.

Tips:

Benchmark your company against your peers from China. Don't forget to benchmark your company against peers from Europe's main supplier Germany, as German manufacturers are leading when it comes to quality.

You should expect most competition from China. The region of Ningbo is a very dense instruments (and parts) production region with more than 60 producers located there. In the past decade this region has developed considerably. Most instruments produced there are commodities in large to medium volumes with a cost price in the range of 1-2 US Dollar. The quality of these instruments has improved considerably and nowadays also the stainless steel instruments from that region meet the European buyer's requirements.

You must exploit your advantage of low labour costs. You have to specialise in parts efficiently manufactured by labour-intensive processes. Like casting and CNC machining.

Exports

Total European export of metal parts for process instruments increased by 6% per year between 2011-2015 to almost €1.3 billion in 2015.

European exports of process instrument parts are mainly destined for other European countries. But, highest growth was recorded by exports to Developing Countries. It increased by 8% per year between 2011 to 2015. In 2015, 24% of total European exports was destined for Developing Countries.

Germany is the largest European exporter of process instrument parts (€457 million in 2015), followed by the United Kingdom and France. The export of Germany accounted for 36% of total European exports. The United Kingdom and France represented both 10% each in 2015. Other exporters are Italy (9%), the Netherlands (9%) and Sweden (6%).

The process instrument parts exported by Europe are to a small extent for after-sales/maintenance and service purposes. Suppliers of process instruments often sell their systems with after-sales and maintenance services. As a result, they will also supply parts in case of maintenance or repairs, which is apparent from the destination countries of exports. In general, the destination countries for process instruments are the same as for process instrument parts.

Tips:

You can find more information about the process instruments (and parts) industry of different countries on the websites of sector associations and societies in Europe. Such as [AQUA](#) (Europe), [SIMTEC](#) (France), the portal [Processinstrumentatiezoeken](#) (Netherlands), or for Germany the company database [WLW](#). In the UK the [Institute for Measurement and Control](#) offers a [member list](#).

Production

Note that the production and demand figures presented here, apply to process instruments and not only to metal parts for process instruments.

The European production totalled €7.1 billion in 2014. The average annual growth of 6.7% per year in 2010-2014 shows that production of process instruments in Europe has steadily increased.

Europe is a net exporter of process instruments. This means that local production exceeds local demand, with the balance exported to countries outside Europe. Local demand is about 72% of total production output.

Germany is the largest process instruments producer in Europe (48% share), followed by the United Kingdom (13%) and France (11%).

Countries that showed the highest annual growth rate between 2010-2014 are Romania, Norway and Finland. However, the value of production in these countries remains relatively small in comparison with the top 4 process instruments producing countries.

Demand

The apparent demand (or market) for process instruments in Europe increased by almost 7% per year in 2010-2014, amounting to €5.1 billion in 2014. Germany, France, the United Kingdom and the Netherlands are

the largest markets for process instruments in Europe. Together, these 4 countries represented 67% of the market in 2014.

The total instruments market is expected to remain relatively stable in the next years because of continuous replacement demand, which is driven by the increasing importance of safety standards, the development of automation, increased environmental standards and energy efficiency requirements.

At the same time, developments in individual market segments may have a huge influence on the instruments market. In 2015-2016, this is definitely the case with the oil and gas market segment, where demand for process instruments is considerably lower because of the low oil price.

Market segments that show a more stable demand over the years are:

- food processing industry,
- chemical processing industry,
- water and waste water processing industry.

Relatively high growth is expected for the pharmaceuticals market segment. Technological development in pharmaceutical processing, especially related to more and more shifts from batch to continuous manufacturing processes, is driving investments in new equipment and instrumentation.

Globalization has not yet fully affected the European process instrument industry. In several countries in Europe there are small niche players that provide specific instruments on a global scale. Such examples are French companies [Georgin](#) (specialised in pressure and temperature industrial applications) and [Ultraflex](#) (specialised in flow meters).

These and medium-sized companies may act as sub-suppliers for the small number of remaining large companies. But they often also supply each other with instruments.

Tips:

One example of a promising sector where you could find new opportunities is the pharmaceutical industry. However, the exceptionally demanding safety requirements in this industry drive a need for high quality control through standardisation and certification procedures.

3. What trends offer opportunities on the European market for metal parts for process instruments?

Safety issues make customers to buy well-known brands

The European market relies heavily on well-known quality brands for process instruments. European buyers tend to look for a high level of accuracy and reliability. And usually choose products from internationally either nationally renowned manufacturers. This is because many process instruments are crucial instruments related to safety.

Tips:

The focus on high quality and safety makes it difficult for you to penetrate the market with finished instruments. Therefore, you are advised to enter the market via subcontracting to European instrument manufacturers.

The oil price is an important market driver

The European process industry has a mature character. To a relatively large part, the industry consists of replacements and the maintenance of existing equipment and instruments.

One major driver of demand until 2015 was the relatively high investments in the gas pipeline and power generation network. As the oil price dropped sharply in 2014/2015, investments in this sector dropped considerably. It is expected that this has caused a -10% to -20% decline in demand for process instruments over 2015 and 2016.

The impact of legislation on environmental protection

European legislation on environmental protection and energy efficiency requirements are becoming stricter. Think of, for example, the legislation on energy efficiency ([Directive 2012/27/EU](#)). In addition, private and public organisations more and more rely on metrology and process instruments to monitor environmental factors such as water, air and soil. These developments are pushing several market segments to expand.

The following segments are therefore expected to show above average growth in the period 2015-2020:

- motion measurement
- temperature measurement
- instrumentation for monitoring air and water variables

Innovation never stops

Technological development is an important characteristic of the process instrument industry. Innovations occur on an on-going basis. For example, systems integration has been a driving force in process control technology. With particular emphasis on linking sensors, actuators and other field instrumentation on the processing plant floor.

Other developments in relation to process control applications include the use of technologies such as micro-electromechanical systems (MEMS), electronic noses and tongues, biosensors, and nanotechnology.

Nanotechnology is an important trend in the process instruments market in Northern and Western Europe, especially in some niche markets such as healthcare and oil and gas.

Multi-functionality

Product trends are developing towards multi-functionality. For example, level indicators that can also measure other parameters, such as temperature, chemical substance, et cetera.

Tips:

Subcontracting of metal parts production for European instruments manufacturers offers good opportunities, while there are very limited chances for Developing Countries suppliers of complete instruments.

Refer to our study [Trends for Metal Parts and Components](#) for general trends.

You should first look at European companies that run a facility in your own country. Contact them and look at opportunities to become their supplier or subcontractor. In the end, it might turn out that you will be able to supply European facilities as well.

You should focus on manufacturers who supply instruments to those growing sectors in Europe that are driven by the European environmental and energy efficiency legislation. In practice, European

producers make their instruments for a range of segments. They rarely focus on one or a few segments alone.

To adjust to market trends, you should take the process instruments transition from mechanical to electronic and towards multi-functionality into account.

Geographically, you could focus on and search for opportunities in regions with a strong process instruments industry, such as l'Ile-de-France and Rhône-Alpes in France. At the same time, most European countries host at least one but often several process instruments producers, so in fact most countries offer subcontracting opportunities.

4. What requirements should metal parts for process instruments comply with to be allowed on the European market?

Requirements can be divided into: (1) legal requirements, which must be met in order to enter the market and (2) non-legal requirements, which most competitors have implemented, and which should be met in order to keep pace with the market.

See our study [EU buyer requirements for metal parts](#) for a general overview of requirements, below are the requirements that specifically apply to parts for process instruments.

Legal requirements

No specific legal requirements apply to metal parts in general. This also means that there are no specific legal requirements for metal parts that are exported to Europe for application in process instruments.

Standards

There are no standards for metal parts for process instruments. But in the case of complete instrumentation, these directives can be relevant:

- Pressure equipment ([Directive 97/23/EC](#))
- Measuring instruments ([Directive 2004/22/EC](#))
- Equipment used in potentially explosive atmosphere (ATEX, [Directive 94/9/EC](#))

Packaging and liability

Note that there is also non product specific legislation on [packaging](#) and [liability](#) that applies to all goods marketed in the European Union.

Import Duties

Process instrument parts can be exported [duty-free](#) to the European Union.

Non-legal requirements

Certification according to ISO 9001 is a minimum which European buyers expect when searching for new suppliers. Other certification, such as ISO 14001 (environmental management) and [OHSAS 18001](#) (health and safety), can be beneficial when promoting your company and products to potential buyers.

Buyer's specification

Buyers' main requirements will be related to the parts; material, dimensions and finishing must meet the buyer's specifications. In fact these issues are key in the sample phase. If the buyer accepts the samples and all

other conditions are agreed upon, the contract can be signed. After that, the main challenge for the suppliers is to deliver the products according to the agreed specifications, delivery times and volumes.

Tips:

You should not underestimate these conditions. When supplying directly to instrument producers in particular, delivery times and delivery reliability are of utmost importance.

Material and testing requirements

The material that is used must be covered by an (international) standard and approved with an EN10204 - type 3.1 certificate. This type of certificate is internationally accepted.

In addition, the buyer may also have testing requirements. Such as:

1. Non-destructive testing (NDT) surface tests: magnetic testing or MT, penetrant testing or PT,
2. Section tests: ultrasonic testing or UT and RT or X-ray testing.
3. Other tests like pressure or leakage testing.

Tips:

Product specifications should be clearly described and completely matching with the buyer's requirements.

You should not underestimate the importance of buyer satisfaction. Buyers naturally consider good product quality to be important, but they also attach a great deal of value to meeting delivery times and delivery volumes.

You should have access to good testing facilities (service suppliers or in-house). Although professional testing equipment can be expensive (like gas chromatography), it may be worth the investment.

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](#). These tips also offer more information on which topics are decisive for European buyers when searching for (new) suppliers.

Also refer to our study [European Buyer Requirements for Metal Parts and Components](#), the [EU Export Helpdesk](#), the [ITC Market Access Map](#) and the [ITC Standards Map](#) for more information related to gaining access to the European market.

5. Through what channels can you get metal parts for process instruments on the European market?

European instrument producers are the most logical prospects for Developing Country producers of instrument parts.

Importers could in rare cases also be potential buyers.

Below follows an explanation of the types of prospects including a few examples per type.

Producers

European producers can be large companies with production operations in several countries in- and outside Europe. Examples in 2 of the 3 largest European production countries (Germany and France) are:

- [Burkert](#), [Wika](#), [Endress+Hauser](#), [Siemens](#) (from Germany)
- [Itron](#), [Schlumberger](#) (France)

Other examples of such large European companies are [Danfoss](#) and [Grundfos](#) from Denmark. But probably more interesting for you are the following type of producers: the many small to medium-sized manufacturers of instruments. Several of these have developed specific expertise, like:

- [Armaturenbau](#), [Conatex](#), [Jumo](#), [Sentracon](#), [UAS](#) (Germany)
- [Georgin](#), [Pernin](#), [Scaime](#), [Chauvin-Arnoux Group](#), [PI](#) (France)

Tips:

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


The leading trade fair for metal parts for process instruments in Europe is [Achema](#) in Germany (next event is in 2018). Also in Germany, [Hannover Messe](#), every year in April the Hall 10 and 11 are meeting place for the instruments industry. In France the fair [Metrologie](#) (France, biennially, uneven years) is the best event to visit, for the United Kingdom it is the [PPMA](#).


You can get information about the latest trends and developments in the instruments industry from magazines such as [Proces News](#) (Germany), [Contrôles Essais Mesures](#) and [Mesures](#) from France and [Process Engineering](#) from the United Kingdom.

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