



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Complete Piping Solutions

High-quality pipe connection systems
from a single source



ENGINEERING YOUR SUCCESS.

Used around the world

From connection technology to system supplier

For many years Parker Hannifin has had various systems for hydraulic connection technology and can therefore access wide-ranging experience. Classical hydraulic connection systems (using DIN and SAE standards) can handle tube diameters up to 42 mm O.D. These use metallic and soft-sealing cutting ring and formed tube connections.

In recent years Parker Hannifin has also been successful in the marketplace with innovative solutions for weld-free connection technology in the range above 42 mm O.D. The development was characterised by a change in the hydraulic market associated with rising system pressure, the need to reduce installation, maintenance, operating costs, and safety requirements.



Ever more powerful and larger machines and equipment require changes to the connection technology.

There is also an increased variety of types and the requirement for compact, space-saving hydraulic pipework systems.

All of this requires re-thinking of planning, construction and operations; it also demands new solutions. This applies to lines in both, stationary and mobile systems. Parker has had an answer to this for some time. The Complete Piping Solutions concept it has developed shows the way for the future.

Complete Piping Solutions

Homogeneous solutions offer efficiency

From Components to full service.

Parker offers you the competent complete solution for hydraulic systems. From advice via design and pre-configuring to delivery and installation - everything with the best quality and reliability. You only have one contact. You take the pressure off your own team, release capacity and overall save a lot of time. You achieve new efficiency at high pressure.

Excellent complete solution.

Complete Piping Solutions from Parker are always to the customer's advantage. Equally high quality in all areas and available around the world.

The complete solution from a single source frees up customer capacity and lowers the need for customers to provide coordination effort. As a supplier of piping system solutions we offer our customers significant added value.

Advantages that pay off.

- High-quality system technology
- Saves time
- Saves money
- Customised user solutions
- Environmentally friendly
- Global supply
- Integration into existing systems

Advice	Briefing/design meeting
Design	Pipe layout Pipe dimensioning Drawings Documentation
Prefabrication	Pipe bending Pipe end processing Pipe cleaning
Delivery	Assembly/ Dispatch Documentation
Assembly	On-site advice On-site assembly Testing and flushing Documentation



Pipe bending

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Weld-free pipes

Potential for your profit

Connect without welding.

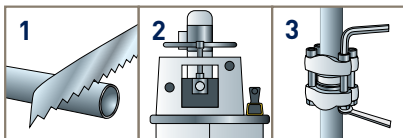
Welding is a complicated process for producing pipe connections. The best welder does not produce perfect welds and comprehensive checks require a lot of time. Appropriately certified specialists are rare. Welding is associated with special cleaning, degreasing agents, anti-corrosion resources and the use of a significant amount of energy. Welding fumes are emitted and the risk of fire and explosion cannot be excluded.



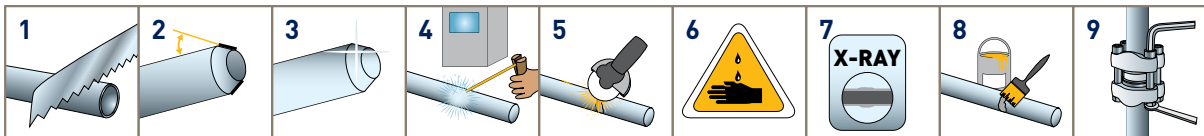
The Parker F37 technology connects tubes in a simple, secure and energy-efficient manner. The cold reforming process is much quicker than welding and ensures an integrated connection.



Flange machine Parflange® F37 as a WorkCentre



The work steps of an F37 flange connection compared with conventional welding.



Best recommendations

Guaranteed and certified

Parker flange connection systems meet the ever higher requirements of the offshore industry, ship-building, heavy machinery, press manufacturing as well as in mining, recycling systems and mobile machinery.

The important requirements such as compressive strength, no leakage and contamination-free lines are met. Conformity to standard enables integration into existing hydraulic systems.

User-friendly and environmentally compatible
Compared with a welded design the Parker Hannifin solutions are very user-friendly and environmentally compatible.

The user-friendliness is demonstrated in the orientable flanges. These are not rigidly connected to the pipe and can therefore be assembled very easily. In contrast to the traditional welding process, no dangerous gases are released and there is no risk either of fire or explosion. This enables them to be used in locations with high safety requirements such as offshore platforms. The risk of corrosion due to stress cracks during welding does not exist. This contributes to an increased lifespan for the piping system.

As the „Parflange® and Parflare“ technologies do not use external heat sources, they are more energy efficient when compared with welding and require neither degreasing nor anti-corrosion agents. Errors during machine setting are mostly excluded if the instructions supplied in the user manual are followed.

Chromium-6
Free



The Parflange F37® flange process is approved by DNV, ABS, BV and other well-known classification companies.

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The Parflange® F37 system

Innovative connection technology



The F37 flange system

Parker has comprehensive know-how in handling flanged pipes and connections. The excellent sealing characteristics and the high mechanical stability of the Parflange® F37 technology is achieved by the continuous orbital pipe reshaping. An insert is placed in the flared pipe end and is a soft seal for the connection and pipe sides.

The Parflange® F37 flange system is used for pipes with an external diameter of 16 to 273 mm (1/2" - to 10" flange). It is suitable for pipe wall thicknesses of up to 9 mm and pressures up to 420 bar. The newly developed SAE 1000 version is available for the low-pressure range (up to 70 bar).

Parflange® F37 system

The Parflange® F37 programme forms the basis for the Complete Piping Solutions concept. Used in millions of solutions, this connection system is supported by decades of experience. The Parflange® system is part of the leakfree „DryTechnology“ programme at Parker.

DryTechnology is a synonym for leakfree systems with soft sealing elements at each connection point. The special F37 flange process requires few steps and thus offers significant time savings as against the welding process.



The F37 retaining ring system

Parker supplies the F37 retaining ring system for connections where there is no chance of assembling a pre-flanged pipe. This system uses a retaining ring for fixing the flange, together with a highly developed seal carrier. It is available as a high-pressure version for up to 10" and as a newly developed SAE 1000 (up to 70 bar) version.

The connections of the Parflange® F37 system comply with the ISO 6162-1, SAE J518, 3000 psi interface (Code 61), ISO 6162-2, 6000 psi interface (Code 62) standards and also the ISO 6164 flange pattern.

Parflange® F37 alternatives

In addition to the F37 flange/retaining ring system, there are other market-specific and innovative connection solutions available.



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Complete Piping Solutions

The complete solution for hydraulic systems

The Parker Complete Piping Solutions concept can be used in the most varied and demanding applications. These include shipbuilding, the oil industry, steel plants and other industrial applications. Parker piping solutions offer you the competent complete solution for hydraulic systems.

Starting with the design via pre-configuring to delivery and installation, everything produced by Parker is top quality and extremely reliable. Even at an early stage

of designing machines and systems, Parker engineers and technicians are available to you to provide ideal assistance for the development of hydraulic line systems.

The support offered to you by Parker includes a suggestion for the type of connection (product to be used) and the choice of materials to be deployed starting with the lines and even the seals. The manufacture of special components, e.g. blocks or manifolds, is no problem for Parker.

If you have no opportunity for line configuration and assembly Parker is there and able to provide advice with its Complete Piping Solutions concept. It is completely irrelevant whether this is an initial fitting or modernising a machine or equipment. Parker's service covers measuring, preparing the pipeline flange connections, including the pipe flanges and assembling the connections.



Machine preparation for the bending process

Such customised mechanical hydraulic connections offer massive time savings during conversion, expansion or disassembly.



Delivery of components in secure packaging



Our customer solutions

Achieving more together

Parker is highly successful with its weld-free piping systems for many applications.



In the Offshoremarket these are pipes for such different ship types as suction dredgers, work ships to install and supply oil platforms, ferries and installation ships for the wind industry. The most varied of hydraulic systems can be given Parflange F37 connections. Piping solutions are also created for drilling and transport towers, crane systems and hoists using Parker's weld-free systems.

It is always about fast, low-cost completion and installation. Weld-free systems enable customers to respond quickly and efficiently to new projects and generate new business. The hydraulic systems in plant and mechanical engineering are also equipped with the Parflange® F37 system. These are the hydraulic, cooling system and return lines. Customers often have to fight against long manufacturing lead times for a new machine.

If for instance a main ring line for a cooling system needs to be welded, time passes before the final installation on the machine can take place. This is the result of such matters as the set-up and cleaning times for the pipe.

Other applications include renewable energy industries (wind power, water power). Also vehicle construction (car, truck test stands) and general mechanical engineering (wood processing machines, press construction, waste processing).

Precision and flexibility are essential for all applications. Orientable flanges give the pipe fitter greater flexibility during assembly.

The Parflange® F37 machine (WCM-WorkCentre Model) offered by Parker gives the customer a high level of flexibility for on-site assembly.

In summary, the weld-free connection systems from Parker achieve a high level of financial and time savings, flexibility, precision, quality and reliability. And this is associated with extraordinary customer and delivery service.



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Centrally located at the heart of Europe

Complete Piping Solutions Centre in Augustdorf

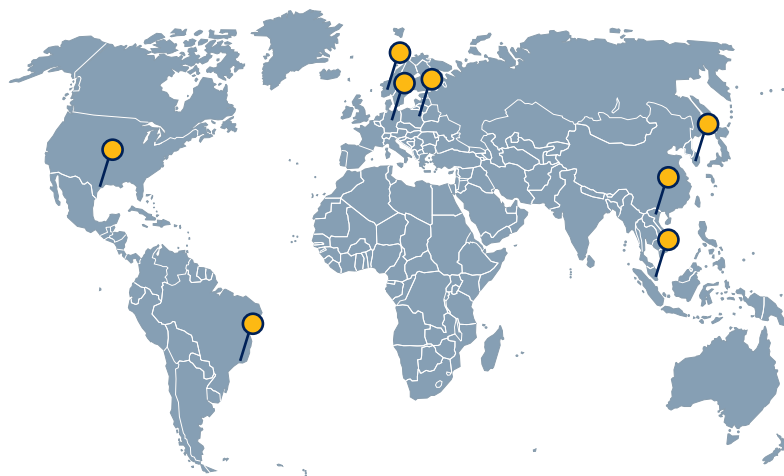


As a result of the global piping strategy introduced by Parker Hannifin some time ago, there is now also a German piping centre close to Bielefeld (in Augustdorf). The German CPS (Complete Piping Solutions) has a strategic location close to the Parker factory at Bielefeld-Windelsbleiche and the European Distribution Center (EDC).

The CPS Germany offers comprehensive options for customer-specific piping system solutions. Piping system solutions are developed in line with customer requirements and requests, in the newly designed office areas with modern IT equipment. The complete production process is characterised by optimised routes for materials ordering, manufacturing and then



Locations of the global Parker Piping Solutions Centres



dispatch. The flow of goods has been copied from the existing piping centres and the associated positive experience gained. The functional workshop can process pipes with external diameters up to 220 mm on the modern CNC bending machines. These machines can also realise 2xD to 3XD bending radii which are defined as standard for the relevant pipe diameters. The other machines also match the high quality standard used by Parker.

The requirements increase

So does our performance

In order to comply with the market and customer requirements in this segment we have aligned our performance to this. The following overview aims to emphasise the range of services offered by CPS Germany.

Development and design:

- Modern CAD systems can process all common 3D and 2D data formats and simulate installation situations
- The projects are produced as required by or in cooperation with the customer. These may be new systems or upgrades
- It may require taking pipe measurements on-site using a modern measurement system. These data can be handed over to the CAD System
- Data from the measurement system are used later for quality control in order to ensure an ideal and secure production process

Cold bending:

- After creating the data required for production these are transferred to the machines. The available bending machines process tubes with diameters from 6 x 1 mm to 190 x 20 mm (thin-walled Ø 220 x 6 mm)

Tube end processing:

- Modern CNC controlled machines are available for processing pipe ends. Tube end processing is carried out based on internal standards

Tube cleaning:

- Tube cleaning using the ISO 4406 / NAS 1638 standard
- Permanent control of the pollution and cleanliness level with modern measuring devices

Pressure test:

- Pressure test to customer specifications possible
- Documentation at the customer's request



Installation / support:

- Delivery of pre-configured tube systems to the customer's desired address
- Installation of tube systems whilst taking into account the parameters and work steps set in the installation manual
- Installation by end customer training conducted by Parker



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