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Catalogue FITTINGS-PROMO

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process control
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High integrity instrumentation tubing packages from Parker

ENGINEERING YOUR SUCCESS.

A Smarter alliance that delivers pure quality: single order tubing and fitting packages

Specifying and purchasing instrumentation installation projects just got a whole lot easier.

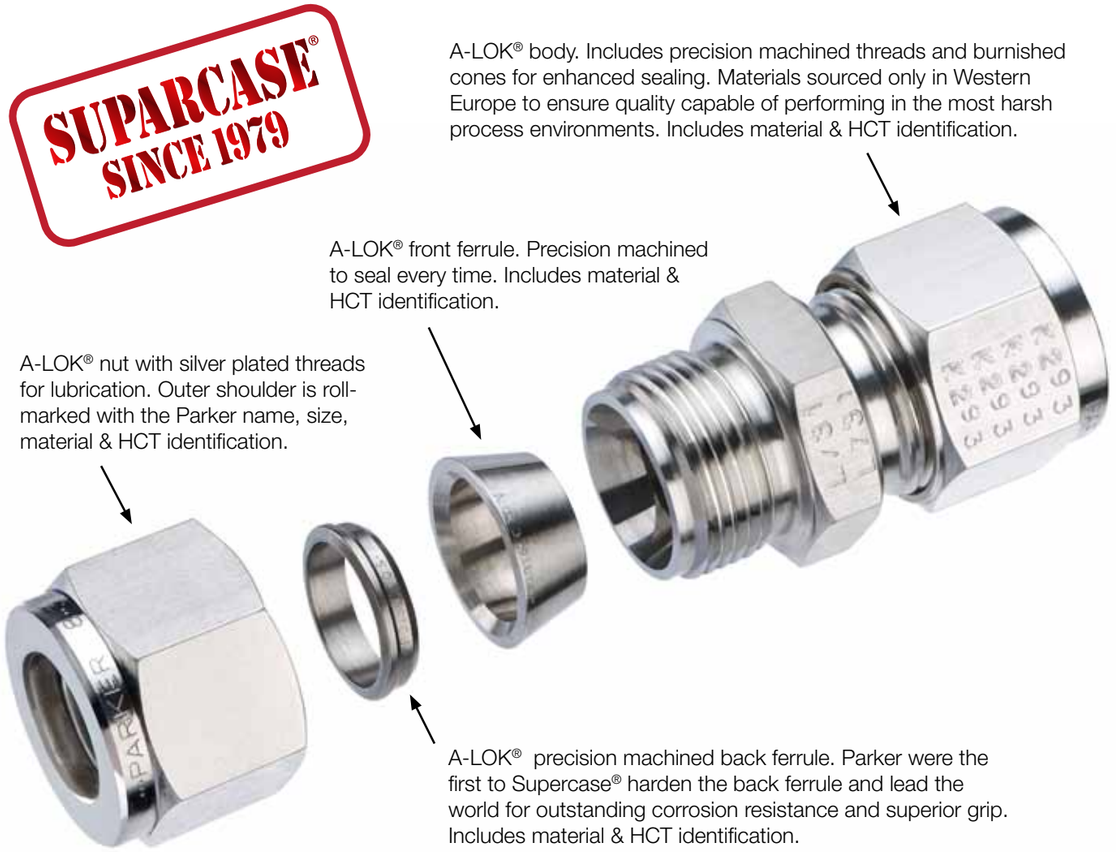
Thanks to a groundbreaking alliance with tubing leader, Sandvik Materials Technology, Parker Hannifin is making it possible to obtain complete packages of tube fittings and tubing via a single order.

Parker Hannifin is one of the largest suppliers of tube fittings worldwide and the scale of our business means that Sandvik Materials Technology can supply tubing at exceptional rates. We're passing that volume benefit on to all our customers - regardless of whether you're buying a few metres of tubing, or a few thousand.

When you purchase complete packages, you benefit from an alliance of two of the world's largest and most trusted suppliers. Stringent control over every stage of fitting/tubing design and manufacturing processes ensures that our instrumentation solutions will perform with the utmost integrity and reliability.

Parker & Sandvik alliance equals a high integrity joint solution	
Anti corrosion properties	✓
Volume pricing regardless of size	✓
Safety at work training for installers	✓
Independent testing and verification	✓
Western European material sources	✓
Full heat code traceability	✓
Superior product design and quality	✓
Global logistics availabilty and support	✓

SUPARCASE® SINCE 1979



Safer product integrity

For a large proportion of Parker Hannifin's and Sandvik's customer bases, the safety, integrity and reliability of products are critical selection factors.

Our tubing supply partner, Sandvik Materials Technology, controls every step of the tube production process to ensure consistent quality. All of its products are characterised by the ovality, eccentricity and controlled hardness required for superior performance for hydraulic and instrumentation systems. They feature high surface smoothness and close dimensional tolerances to ensure that there are no leakages when connecting with couplings.

The Instrumentation Products Division of Parker Hannifin is one of the foremost suppliers of instrumentation tube fittings in the world today, a position built on decades of investment in research, development, manufacturing and the supply chain.

Our business is built on innovation. The ideas behind these innovations spring from an unusual innovation biased business model. Parker Hannifin's engineers follow a development process that demands close engagement with our client's engineers. By listening to our customers and understanding the problems and challenges they face, we create highly practical solutions that improve the way equipment is built and reduce system costs.

Owing to this we offer no less than four threadless fitting innovations to allow users to make tubing connections faster, smarter, cleaner and safer, and deliver improvements ranging from lower bill of material costs and faster assembly, to fewer potential leak paths, lower emissions and longer life.

- **A-LOK** is a twin-ferrule compression fitting that dominates low pressure applications, aided by the unique anti corrosion performance of its Suparcase treated ferrule.

- **CPI** delivers a single-ferrule version (Suparcase treated) of the industry standard twin-ferrule fitting, reducing potential leak paths.

- **MPI** brings the familiar and simple ferrule (Suparcase treated) compression assembly principle to medium pressures, providing a time and cost saving alternative to cone and thread fittings for applications up to 15000 PSI (1034 bar).

- **Phastite** extends the time and cost saving compression approach to even higher pressures (20000 PSI/1378 bar), providing an easy-install alternative to many permanent connection applications currently served by welded or cone and thread technologies.

Material matters

Some categories of tube fittings are industry standard products, served by numerous vendors. As many fittings are used in plants processing harsh media, or in environments that are corrosive, the implications of choosing parts based mainly on cost criteria can be serious.

Failure approaches — in just 7 days! This image shows corrosion around a tube fitting assembly after just 175 hours exposure to salt spray (as per ASTM B117), a common problem in offshore environments. The tubing itself — also sourced from a low cost producer — is corroding just as rapidly.

Low cost products can be fabricated from poor quality metal containing lots of inclusions and impurities. This can result in end products with little resistance to corrosion.

Material sources
We source our material exclusively from Western European foundries, and additionally subject it to an independent intergranular corrosion test before product manufacturing even begins. This is followed by a number of unique production steps and stages aimed at optimising reliability and corrosion resistance.

Heat code traceability
Parker provides comprehensive heat code traceability (HCT) audit trails. HCT refers to the fact that a specific part can be traced back to the original mill heat of metal from which it was made. Beginning with the original melt, a package of documents is created which completely describes the metal in physical and chemical terms. The end result is an audit trail number that is permanently stamped onto each component. HCT provides users with a record of the raw material back to the originating mill's testing in accordance with 3.1B in accordance with EN 10204 and DIN 50049.

Such certification is typically required when delivering packages of parts. Unusually, Parker is also able to supply certification retrospectively if required, thanks to the unique permanent marking system used on its components.

Exotic materials
Parker Hannifin's alliance with Sandvik covers welded or seamless Instrumentation tubing in 316/316L stainless steel, plus a range of the most commonly used exotic alloys: 304/304L, 6Mo, 321, SAF 2507, 625, 825 and Hastelloy C276. (to be confirmed) to assure corrosion free performance in specific applications, including media, pressure, temperature and environment.

Unsurpassed quality
When you purchase complete Parker and Sandvik fitting and tubing packages, you will benefit from an alliance of two of the world's largest and most trusted suppliers. The quality and integrity of products are fundamental to the business ethos of both our organisations, and our instrumentation solutions will give you peace of mind. Combined with Parker Hannifin's and Sandvik's global logistics network, this new instrumentation supply service will give your organisation the solid platform it needs to expand while, keeping costs under strict control.

The table below illustrates the connectors required for various tube thicknesses.

Table 1 **Connector Selector for Metric Size Stainless Steel Tubing**

	Wall thickness in millimetres														
	0.5	0.7	0.8	1	1.2	1.5	1.8	2	2.2	2.5	2.8	3	3.5	4	4.5
2	AC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	AC	AC	0	0	0	0	0	0	0	0	0	0	0	0
4	0	AC	AC	AC	AC	0	0	0	0	0	0	0	0	0	0
6	0	AC	ACP	ACP	ACP	ACP	P	P	0	0	0	0	0	0	0
8	0	0	0	ACP	ACP	ACP	P	P	P	0	0	0	0	0	0
10	0	0	0	ACP	ACP	ACP	P	P	P	P	0	0	0	0	0
12	0	0	0	ACP	ACP	ACP	ACP	ACP	P	P	P	P	0	0	0
14	0	0	0	ACP	ACP	ACP	ACP	ACP	ACP	P	P	P	0	0	0
15	0	0	0	AC	AC	AC	AC	AC	AC	0	0	0	0	0	0
16	0	0	0	P	ACP	ACP	ACP	ACP	ACP	P	P	P	P	0	0
18	0	0	0	0	AC	ACP	ACP	ACP	ACP	ACP	P	P	P	0	0
20	0	0	0	0	AC	ACP	ACP	ACP	ACP	ACP	ACP	P	P	P	0
22	0	0	0	0	AC	ACP	ACP	ACP	ACP	ACP	ACP	P	P	P	0
25	0	0	0	0	0	0	ACP	ACP	ACP	ACP	ACP	ACP	P	P	P
28	0	0	0	0	0	0	AC	AC	AC	AC	AC	AC	AC	0	0
32	0	0	0	0	0	0	AC	AC	AC	AC	AC	AC	AC	AC	0
38	0	0	0	0	0	0	0	0	AC	AC	AC	AC	AC	AC	AC

Table 2 **Connector Selector for Inch Size Stainless Steel Tubing**

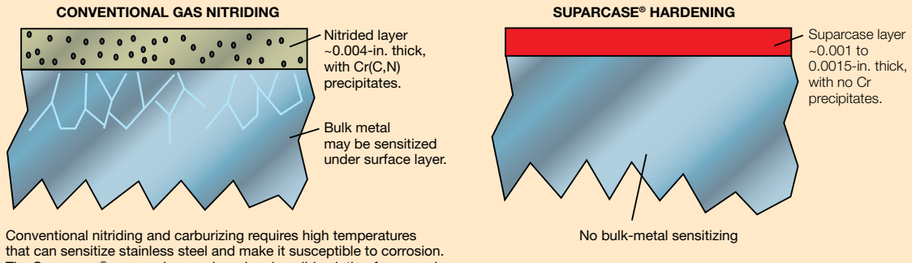
	Wall thickness in inches																
	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188	0.220
1/16"	AC	AC	AC	AC	AC	AC	0	0	0	0	0	0	0	0	0	0	0
1/8"	0	0	0	0	0	AC	AC	0	0	0	0	0	0	0	0	0	0
3/16"	0	0	0	0	0	AC	AC	AC	0	0	0	0	0	0	0	0	0
1/4"	0	0	0	0	0	AC	ACP	ACP	ACPM	PM	0	0	0	0	0	0	0
5/16"	0	0	0	0	0	0	AC	AC	AC	0	0	0	0	0	0	0	0
3/8"	0	0	0	0	0	0	ACP	ACP	ACP	PM	PM	M	0	0	0	0	0
1/2"	0	0	0	0	0	0	ACP	ACP	ACP	ACPM	PM	PM	PM	M	0	0	0
5/8"	0	0	0	0	0	0	0	ACP	ACP	ACP	ACP	P	P	0	0	0	0
3/4"	0	0	0	0	0	0	0	ACP	ACP	ACP	ACP	ACPM	PM	PM	PM	M	0
7/8"	0	0	0	0	0	0	0	ACP	ACP	ACP	ACP	ACP	P	P	P	0	0
1"	0	0	0	0	0	0	0	0	ACP	ACP	ACP	ACP	ACPM	PM	PM	PM	M
1 ¼"	0	0	0	0	0	0	0	0	0	AC	AC	AC	AC	AC	AC	0	0
1 ½"	0	0	0	0	0	0	0	0	0	0	AC	AC	AC	AC	AC	AC	AC
2"	0	0	0	0	0	0	0	0	0	0	0	AC	AC	AC	AC	AC	AC

KEY		
	AC	A-LOK & CPI but not suitable for gas service
	ACP	A-LOK, CPI & Phastite but not suitable for gas service
	AC	A-LOK & CPI
	ACP	A-LOK, CPI & Phastite
	ACPM	A-LOK, CPI, Phastite & MPI
	P	Phastite
	PM	Phastite and MPI
	M	MPI
	0	Combination not available

Suparcase® avoids corrosion problems

The long term seal performance and reliability of ferrule type connectors is aided by Parker's unique Suparcase® treatment, which hardens the active ferrule so that it can bite into the tubing and make a seal without opening up an avenue for corrosion.

Case-hardening processes



Conventional nitriding and carburizing requires high temperatures that can sensitize stainless steel and make it susceptible to corrosion. The Suparcase® process keeps chromium in solid solution for corrosion resistance and does not affect the bulk metal.

Commonly used hardening techniques such as chrome plating, work hardening or chemical edge treatment, all weaken a metal's corrosion resistance in some form. Suparcase® treatment eliminates this potential weakness by means of a unique infusion that penetrates for a few microns only and does not affect the underlying molecular structure of the base material.

Designed to perform

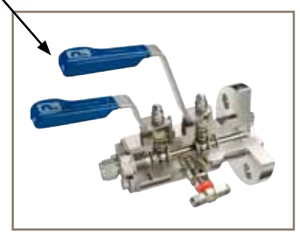
You can be confident that Parker tube fittings are fit for purpose because of the rigour of our development and manufacturing processes.

All of Parker's fitting designs must be suitable for connecting tubing conforming to the ASTM A-269 specification for seamless and welded austenitic stainless steel tubing, with a minimum safety factor for pressure containment of 4:1. These and other fundamental performance characteristics are verified by a battery of real world testing during the development process - including pressure tests until tube burst. Parker Hannifin has one of the best equipped tube fitting laboratories in the world, with sophisticated design automation tools that allow ideas to be refined and optimised, supported by a comprehensive array of test equipment for verifying pressure containment, leakage, vibration, deflection and so on.

Once a product reaches the end of development, Parker Hannifin continues to support its users by subjecting products to independent verification by world renowned testing laboratories, as well as regularly performing tests to meet users own standards.

Cleaner and Safer with integral ended solutions

Parker recommends their proven A-lok technology that compliments the innovative new product range, including the PED-certified relief valve and Pro-Bloc manifold solution.



An Integral ended solution will eliminate the requirement for NPT threads and the problems associated with them such as; poor quality threading requiring the use of PTFE taping to seal, potential galling where many manufactures taping threads, poor quality which will result in lack of sealing first time. Utilising Parker's cleaner and safer fittings, your business can significantly reduce the potential for leaks, making the Parker option an environmentally friendly choice for connecting.

Value Proposition

SMARTER
- Save significant assembly time
- Reduce installation and purchasing costs
- European sourced materials, one complete solution with
- Sandvik tubing

FASTER
- Reduced maintenance
- Seals first time, every time

SAFER
- Reduced leak paths, eliminating risk of emissions

CLEANER
- Fewer components and less leak paths

Training completes the package

Making a reliable joint starts with the design of the connector, but concludes with installation.

Choosing Parker as your fittings and tubing partner also gives you access to some of the industry's most advanced training support. Parker and its distributors regularly run a range of training seminars including dedicated courses on the correct make-up of tube fittings and have been doing so for over 20 years. Known as the Safety at Work programme, countless users have been through this valuable educational training seminar, which has made a major contribution to reducing the number of incidents attributed to incorrect assembly.