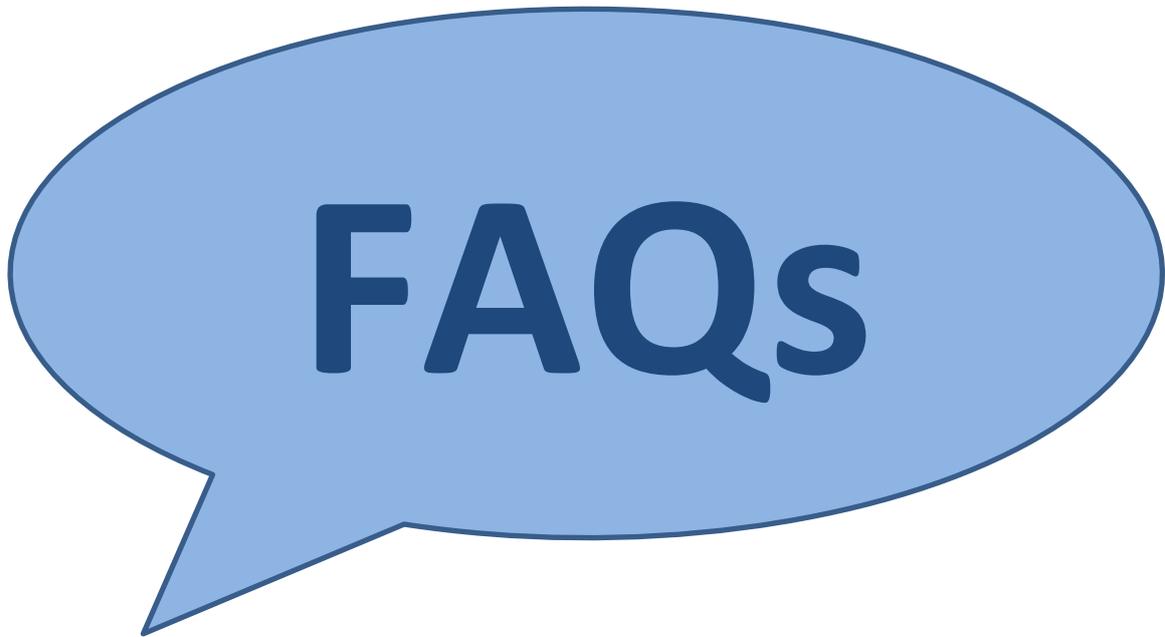


Product Recovery and Pigging Systems

Frequently Asked Questions



HPS Product Recovery Solutions

Quality • Innovation • Simplicity • Integrity

www.HPS-Pigging.com



Got a Question About Product Recovery or Pigging? (If it's not here, please ask!)

Since 1995, HPS has been delivering reliable, innovative and effective product recovery and pigging solutions to organisations throughout the world. We've successfully delivered well over 1200 projects, from simple pipe cleaning systems to highly sophisticated, custom-designed PLC-controlled multi-source, multi-destination product transfer solutions.

Here are some of the more common questions we're asked about product recovery and pigging.

If you can't find the information you're looking for here, please don't hesitate to [contact us](#).

Product Recovery and Pigging FAQs

What Does Pigging Do?

The main purpose of pigging is to remove or recover residual liquid that remains in a pipe after transfer from one location to another.

In its simplest form, a pigging system consists of a flexible projectile with a diameter slightly larger than the pipeline that needs pigging. Water, other liquid, compressed air or gas, or even the product being processed is then used to propel the pig through the pipe and remove or recover the remaining product. For an overview of pigging, please see [What Is Pigging](#).

Why Do Organisations Use Pigging Systems?

A properly designed and implemented pigging solution improves process efficiency, effectiveness, productivity and profitability. This is through increased product yield, reduced waste, less downtime, quicker changeovers, and less chemical and water consumption. For example, filling residual product into the final package, rather than disposing of it, reduces waste. Similarly cleaning a pigged line is quicker and uses less water, so improves efficiency while saving money.

The wide variety of [benefits provided by pigging systems](#) help increase profits and reduce carbon footprint.

What is a Pig?

A [hygienic or sanitary pig](#) is a specially-designed, flexible projectile, slightly larger than the diameter of the pipe it is cleaning, which pushes a product through a pipeline.

HPS food-grade pigs are made from FDA approved silicon materials (one of the reasons they're 'hygienic' or 'sanitary'). We also provide oil resistant and solvent resistant designs. They are 'full

contact' which means they clean constantly, even when travelling around corners. These are tough yet flexible and extremely effective: product removal is typically up to 99.5%.

What Types of Products are Piggable?

Any liquid or wet product that can be pumped can be pigged. This includes very low and very high viscosity products. We've successfully designed, implemented and commissioned systems for products including food, pet food, confectionery, soft drinks, water, wine, beer, spirits, shampoos, conditioners, body wash, bubble bath, toothpaste, deodorants, hairsprays, detergent cleaners, chemicals, paint, pharmaceuticals and many more

Can Pigs Travel Through Pipe Bends?

Yes. The flexible nature of HPS pigs enables them to travel through 1.5 D – 90° bends.

Can HPS Pigs Withstand High Temperatures?

HPS pigs will withstand temperatures up to 250 °C or 482 °F without degradation. This means you can steam clean them if required.

How Much is a Pigging System?

Because there are many different variables involved in working out costings, it is not possible to provide standard pricing. However, here is an article on [pigging system pricing and how to find out how much a pigging system costs](#). Pigging systems deliver a high return on investment and usually pay for themselves in less than a year.

How Can I Calculate Return on Investment (ROI) from a Pigging System?

Start by using the HPS [Pigging Systems Savings Calculator](#). Also be sure to read [How to Calculate Return on Investment from a Pigging System](#). This outlines a variety of other factors you should take into account (a pigging system can save you more than you think!).

How Long Does a Pig Last?

HPS pigs are robust, reliable and specifically designed to provide as long a working life as possible. However, the actual lifetime of a pig depends on the process, pipe material, products being pigged and so on. When you contact HPS about a pigging solution for your organisation, our experts will be able to advise you on the expected lifetime of your pigs. As a guideline, HPS pigs are usually guaranteed for 30 kilometres or 18 miles of use.

How Does a Pig Enter and Leave a Pipeline

All pigging systems need a method of introducing the pig (or pigs) safely in to the line and getting it out of the way when it's reached its destination. This is the key function of [pig launchers and pig receivers](#).



Do I Need To Manually Load or Remove the Pig?

Because most HPS pigging systems are fully automatic, there's no requirement for the operator to manually remove or load the pig. Usually the only time you'll need to manually access a pig is for inspection and maintenance.

What Propels a Pig Through a Pipe?

Pigs don't propel themselves, they are pushed along pipes by liquids or gases. There is a range of different [propellants used in industrial process pigging](#), including water, air, nitrogen, carbon dioxide and other products.

How Fast Do Pigs Travel Through Pipes?

The speed at which pigs travel through pipe lines depends on the product, pressure, process, pipe diameter, pipe length and a number of other factors. However, most people are often surprised by how fast pigs travel through pipes. Most pigging operations last just a few seconds, sometimes even fractions of a second. This makes the whole pigging process extremely quick, minimising interruption to operations. It is also a big advantage over slower and less effective methods such as ice pigging.

At What Stage in a Process is Pigging Used?

It depends on the process. Typically, an operator or automatic control system will send a pig through a pipe to clean it and recover product whenever required. This can be, for example, when a pump has emptied a holding tank, there's a change of product, before CIP, or when a particular batch run is complete.

Can You Fit a Pigging Solution to an Existing Process?

Yes. We fit pigging systems in existing pipeline processes, as well as new plant. Our engineers will design a custom solution that meets your precise needs, and install it with minimal disruption to your business.

What Type of Pipework is Suitable for Pigging?

Usually the pipework in a hygienic pigging system is made of stainless steel with a highly polished internal finish. This ensures high levels of product recovery, sanitation and cleaning. It is however possible to pig systems which use other types of pipe materials, but we will need to discuss this with you. Whatever pipework your system uses, the infrastructure must meet certain criteria. Here is an article providing guidance on [pipeline infrastructure for pigging](#).

Is Pigging Compatible with Clean In Place (CIP) Systems?

HPS [Pigging Systems and Clean In Place \(CIP\)](#) solutions are fully compatible. Because HPS pigs recover nearly all product within a pipe, pigging a system before the clean in place (CIP) procedure delivers significant benefits. These include reducing flush waste, speeding up processing, and using much lower amounts of cleaning chemicals and water. What's more, HPS designs pigging systems to

be fully compatible with CIP systems. This means that HPS pigs and other pigging system components (including specially designed HPS sanitary ball valves) can themselves be cleaned in place.

Can I Use a Pig Straight After a Hot Washout?

We do not recommend using an HPS pig immediately after a hot washout or clean in place (CIP) operation. Instead, allow the pig to cool before using it again. You can usually accelerate cooling by flushing the pig with water or suitable alternative cooling medium.

Are there Different Types of Pigging System?

Yes. We provide fully customised pigging solutions to meet the precise needs of each of our customers, so nearly every system is different. There are various types of pigging system available, however most hygienic pigging systems we supply fall in to one of three basic categories: [single-pig systems](#), [tank-drop off systems](#), or [double-pig systems](#).

Can You Design Pigging Systems with Automatic Control?

While some simpler pigging solutions still use manual control, most pigging systems are either partly or fully automated. [Automatic pigging](#) solutions, controlled by PLCs with either HMI or SCADA systems, have a wide range of benefits. These include increasing process speed, productivity and overall efficiency. Automation also reduces the chances of human error and so increases safety.

What is the Minimum Pressure Needed to Pig a Line?

It depends on the system. However, the pressure needed to push the pig is typically lower than the product pumping pressure.

Where Does The Term 'Pigging' Originate?

The terms 'Pigs' and 'Pigging' are commonly used throughout industry. The most common reason given for the origin of the term comes from the oil industry. This is where metal discs connected by a rod were propelled through oil pipelines to remove the build-up of paraffin wax on the internal wall of the pipe. The action of metal on metal were said to have made a squealing noise like a pig. However there are other reasons given for the name 'pigging'. One is that the letters are an acronym standing for "Pipeline Inspection Gauge". Another is that pig simply refers to a solid object, in the same way as a 'pig' of iron or lead. Either way, the common term for the process of sending an object through a pipeline to recover product or clean the lines is called "Pigging". Today, [pigging products and services](#) are the core business of HPS Product Recovery Solutions.

What if a Pig Gets Stuck?

If you have an HPS solution, your pig will not get stuck! We specialise in pigging systems and have extensive experience in providing workable, efficient and reliable product recovery solutions. If a pig doesn't reach its destination, there's always a logical reason. Typical causes are lack of air



pressure, pipeline faults, leakage from a pipe connection, or an obstruction such as a closed valve in front of the pig.

Is It Possible to Pig Through Hose?

Yes. While most systems use rigid pipes, some need to include flexible pipe. While there are special requirements, in particular in relation to safety, HPS can design, supply and commission high quality [pigging systems for hose and flexible pipe](#). Please note that we only supply complete pigging systems, we are unable to supply just the hose.

Can I Order Spares?

Yes. We have a dedicated customer service and after sales team. As long as it's an HPS solution, our friendly staff will be able to arrange [spare pigs and other replacement pigging system parts](#) for you.

How Does a Pigging System Detect Pig Location?

HPS pigs have special properties that enable us to magnetise them. Our specially designed [pig detectors](#), which fit to the outside of pipework, will detect the magnetised pig at either end of a line. These detectors are non-intrusive to the product line and can detect the pig's magnetic field through stainless steel pipe. The detector signals are then used for tracking and control systems.

My Product or Process is Unique. How Can I Find Out If It Can Be Pigged?

Many of our customers use specialist equipment, products and processes. If it's a liquid, we can design a system to pig it. [Contact one of our experts](#) to find out what is the best solution for your organisation.

What Other Products and Services Does HPS Provide?

HPS offers a comprehensive range of product recovery equipment and services. These include [Automatic Flowverter](#) (Automatrix) and Rotomatrix solutions, a wide selection of specialist valves, process system design and 3D design services, training, technical support and more.

Where Is My Nearest HPS Office?

HPS has offices, agents and representatives throughout the world. You can find the location of your nearest HPS representative [here](#). Alternatively, email info@hps-pigging.com and we'll ask your local representative to get in touch.

How Long Does a Pigging System Take to Install?

There's no clear-cut answer on how long a pigging system takes to install. That's because every pigging system is unique and designed around the exact requirements and needs of each customer. However, as a general guide, a simple single-pig system with one launch and one receive return, the average installation time is around 2-3 days. This includes electrical, pneumatic and mechanical



installation. Installation times for other types of solutions such as tank drops off systems would be slightly longer.

Our streamlined integration process means, regardless of the system, plant downtime is kept to an absolute minimum. We'll also work around your schedule and minimise disruption to operations.

Does the Length of the Pipeline Determine the Installation Time?

No, installation time is determined by the amount of equipment being installed and the number of pipelines. The length of the pipeline has limited impact on the installation time.

Are all Pigging Systems Designed Hygienically?

Some pigging systems are not designed hygienically as in some cases it's not required.

However, the majority of HPS pigging systems and components are designed hygienically which minimises cross-contamination risks and allows quick and efficient cleaning processes.

As well as providing hygienic solutions for the food and beverage industry, HPS also provide hygienic solutions to many more manufacturers. This includes the paint and coatings industry who are implementing hygienic pigging systems to reduce the risks of a microbial attack and the threat of contamination and product recalls.

What's the Longest Pipeline You Can Clean?

The team at HPS have a wealth of experience and expertise in installing long pipe runs. For example, HPS provided a pigging solution for an Australian bottling company and the process pig travels over 3000 ft (just under 1 km). HPS also provided a product recovery solution for a bottled water company located in Canada. The bi-directional pig travels over 1 km.

Regardless of the pipeline length, HPS hygienic pigs will not get stuck and will efficiently travel through pipelines and recover practically all of the product (up to 99.5%) from the pipe.

What Information Needs to be Provided for a Pigging System Quote?

In order to provide an accurate pigging system quote, we'll need as much information as possible about your current operation. This includes the following (if possible):

- The product you are looking to pig
- Pipeline inside diameter and length
- The number of product sources and destinations
- Project objectives such as increasing product yields, reducing waste etc.
- How you currently clean between changeovers
- How frequently you carry out changeovers

The more information we have about your project, the more accurate the pigging system quote will be.

How Long Do Pigging Systems Last?

If properly designed by a pigging system expert and appropriately maintained, pigging systems will last an extremely long time. In fact, some of our very first systems are still in use after twenty years. That's because HPS systems are highly effective, durable, reliable and long-lasting.

However, nothing lasts forever, so routine replacement of certain components such as pigs and seals will help extend the lifeline of your system. Pigging system maintenance is also essential to ensure your systems remains in prime condition and delivers optimum performance. At HPS, we recommend having a [pigging system service plan](#) which gives peace of mind and saves you money in the long run.

All pigging systems come with a warranty that lasts a year. In addition, the pig (or pigs) also come with a minimum usage guarantee of 30 kilometres or 18 miles of use (subject to terms and conditions). For many customers, we also offer [pig usage software](#), which tells operators when the pig is nearing the end of its working life and needs replacing.

How Could a Pig be Introduced into an Automated System and be Removed Without Manual Intervention?

Automatic pigging systems are nearly always 'closed loop' systems that require no manual intervention. The pig resides in a special housing at a launch station (and sometimes a receive station), which allows the system to automatically introduce the pig to the line as and when needed.

As well as storing the pig (or pigs) when they're not actually 'pigging', HPS launch housings are designed so that the pig can be cleaned and CIP'd without actually being removed. They are also designed so the pig can be introduced automatically into the process line as required by the pigging sequence.

Please note that even in automatic pigging systems, pigs need to be removed from time to time for maintenance and inspection.

I Still Have a Question About Pigging – Can You Help?

Of course! As well as being extremely good at what they do, HPS staff are a friendly bunch and happy to discuss any aspect of pigging or product recovery with you. Just give us a call, fill in one of the contact forms or drop us an email. We would love to hear from you!

Where Is My Nearest HPS Office?

Main HPS Offices are at:

United Kingdom:

T: +44 (0) 115 925 4700 E: info@HPS-Pigging.com

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Agents and Representatives

HPS has agents and representatives throughout the world. You can find the location of your nearest HPS representative [here](#). Alternatively, email info@hps-pigging.com and we'll ask your local representative to get in touch.

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