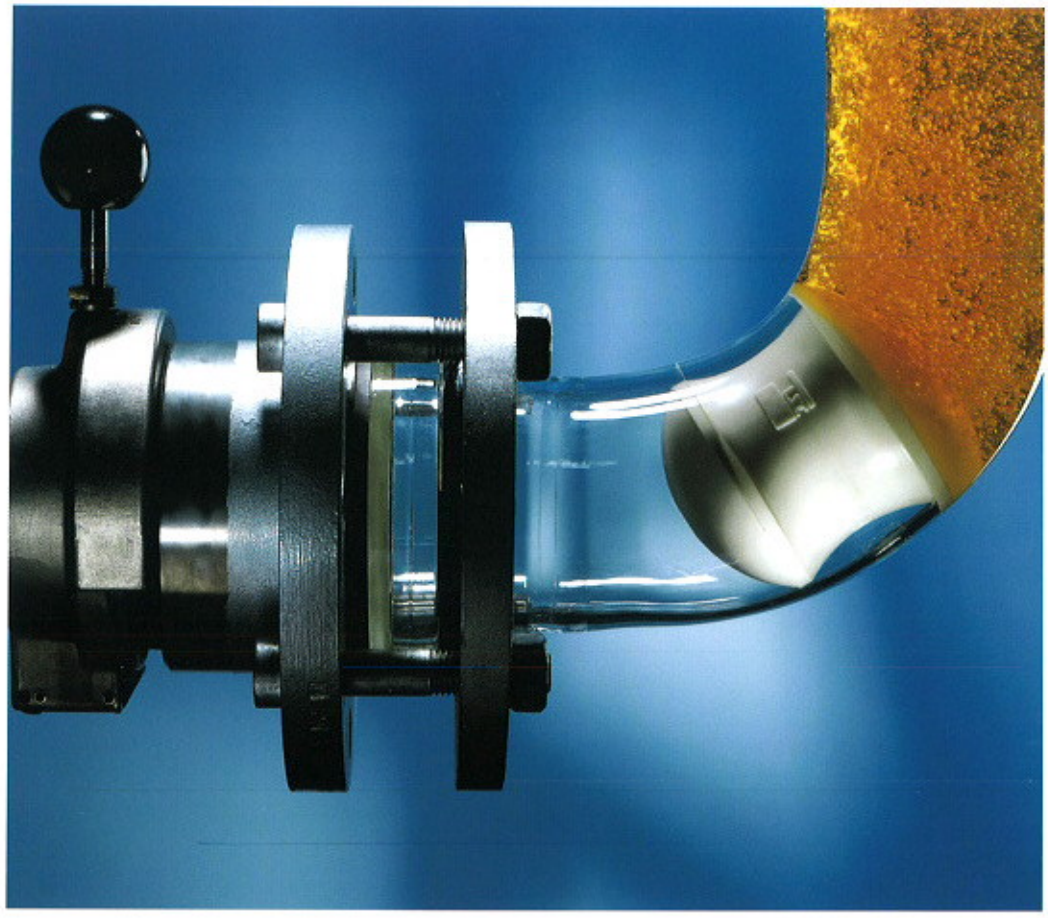
I.S.T. pigging technology.
Makes the best of your pipes.

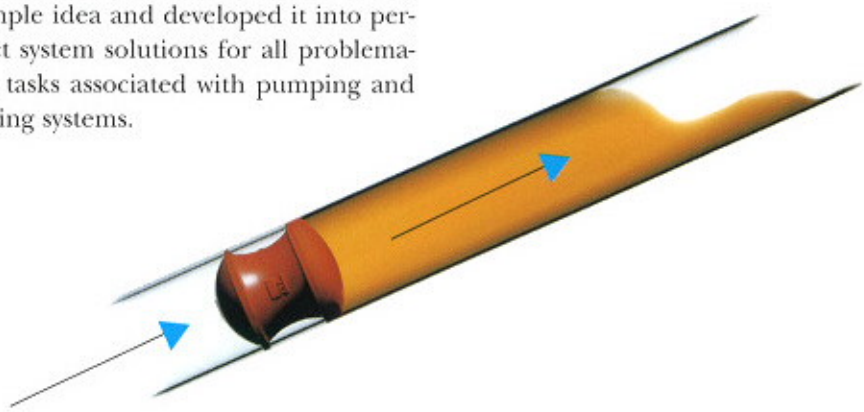


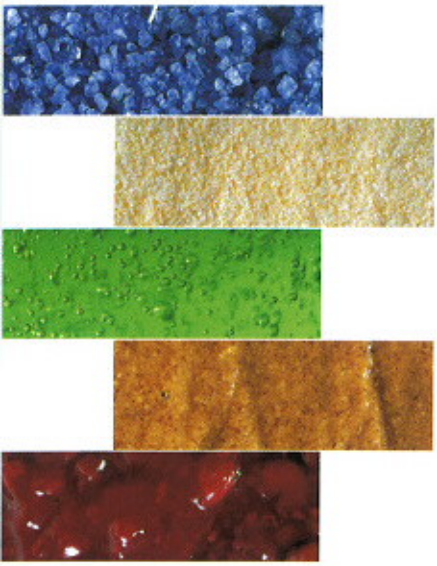
I.S.T. pigging systems for environmentally friendly, efficient and cost-effective pumping, filling, separating and cleaning.

I.S.T.

I.S.T.: The idea of pigging is brilliantly simple.

The best ideas are often the most simple. This is just the case with pigging. It was expended more than 30 years ago by I.S.T. „for new branches of industry", and is based on a process which is, in principle, very simple:
◗ a fit body, in other words a pig, is used to push out the contents of a pipe. What makes this principle so attractive is that it is suitable for use in various fields: I.S.T. pigging systems can be used ◗ to pump, fill, mix and separate large quantities of substance and also to clean pipes, in an environmentally friendly, efficient and cost-effective way. I.S.T. has taken a brilliantly simple idea and developed it into perfect system solutions for all problematic tasks associated with pumping and filling systems.





I.S.T. pigging systems can be used to move:
granules
powder
liquids
slurries
sludge
and much more

Encourages environmental protection and cost saving in very diverse lines of business.

Some sectors where I.S.T. pigging systems are already used successfully:
mineral oil
chemical
paint
food
drinks
cosmetics and
pharmaceutical industries

The very first I.S.T. pigging systems proved their worth in the mineral oil industry. I.S.T. pigging technology has also been used successfully in other areas for many years now, such as the pharmaceutical, food, paint, cosmetics and chemical industries. The decision to use a pigging system is always based on sound reasons of economy; safety standards and environmental protection certainly also have a large part to play. ◗ In principle, every pumpable product and also powders, granules and similar substances can be pigged fully automatically, for example lyes, solvents, paints, oils, liquid resins, sludge ... the list is endless. Because of this, I.S.T. pigging systems are being developed for pumping more and more new substances and for increasingly higher-performance systems.

Return on investment.

The advantages of pigging speak for themselves.

Your gain: **Rationalisation**

- Fewer pipes can be used to move a wider range of products, due to excellent separation methods
- Pipe heating and insulation is often no longer required

Your gain: **Cost saving**

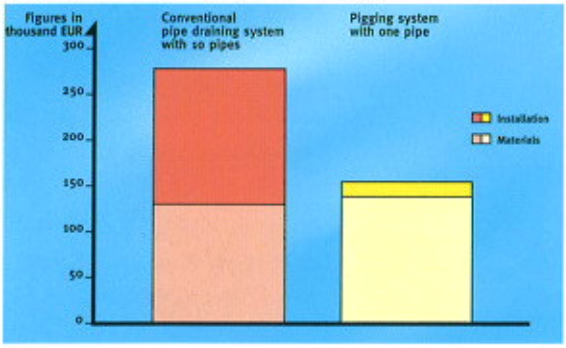
- Conventional draining, cleaning and rinsing processes are dispensed with
- Loss of valuable raw materials and products is now minimal
- The amount of cost-intensive waste water used is reduced drastically
- High energy savings
- No deposits or encrustation in pipes - lengthens the life of pipes

Your gain: **Quality assurance**

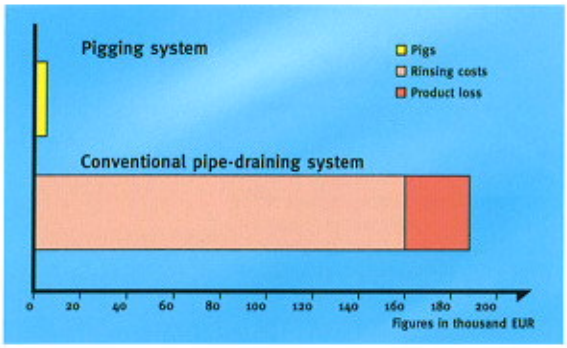
- High cleaning standards
- Hence no mixing of products
- Pigging systems can be fully automated
- Bubble-free feeding of filling systems

Your gain: **Environmental protection**

- No residual products
- Almost no waste water produced requiring treatment



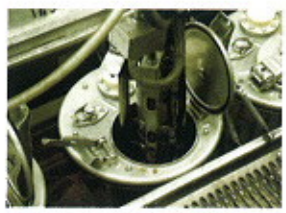
Comparison of investment costs for a conventional pipework system and an I.S.T. pigging system.



Comparison of resulting costs for a conventional pipework system and an I.S.T. pigging system.

The pig like no other. Almost all filling and pumping systems can be optimised with the I.S.T. pig.

◗ Even the most complicated pipework can be fully automated with the I.S.T. pigging system, even those in which, for example, more than 50 different substances must be transported over long distances. As a result, operation is considerably more cost-effective, safe and efficient. Of course the best idea is to choose an I.S.T. pigging system right from the start when you are planning a new filling and pumping system. However, existing systems can be converted into pigging systems at any time, and consequently greatly improved. The decisive factors for retrofitting are pipework layout and the quality of the pipes' inner surface.



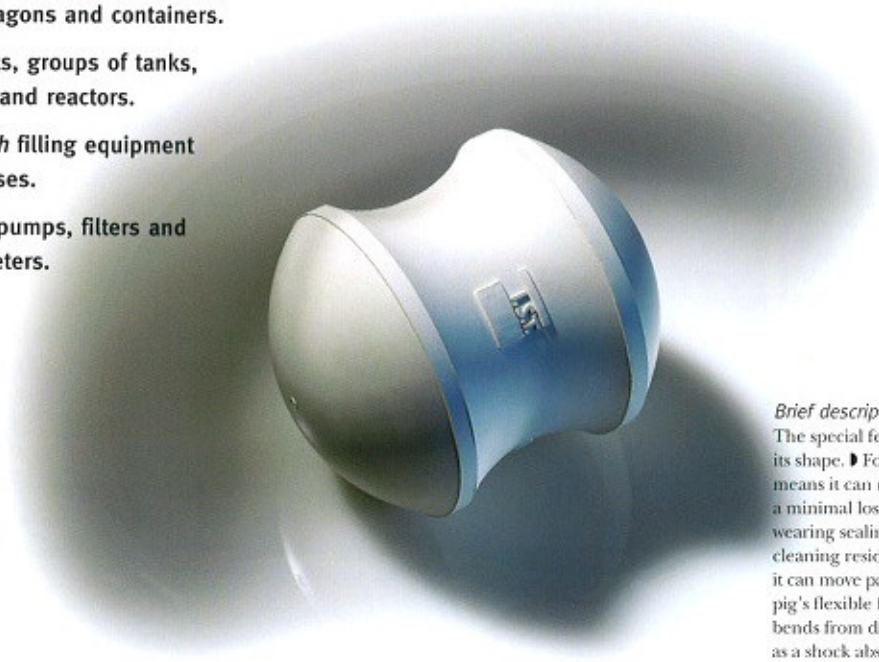
A few examples of piggable pipes:

From **the nozzles to tankers, tank wagons and containers.**

To **tanks, groups of tanks, mixers and reactors.**

Through **filling equipment and hoses.**

Round **pumps, filters and flow meters.**



Brief description of an I.S.T. DUO pig: The special feature about a DUO pig is its shape. ◗ For example its narrow waist means it can negotiate pipe bends with a minimal loss of friction. ◗ Its two hard-wearing sealing lips are excellent for cleaning residue from the pipe sides and it can move past openings in pipes. ◗ The pig's flexible front surface protects pipe bends from damage and wear and acts as a shock absorber. ◗ And the pig holds its position – none of that tumbling through the pipe as cleaning balls do.

Either one or more pigs may be used – in the following systems:

Open system

Closed system

Single-pig system

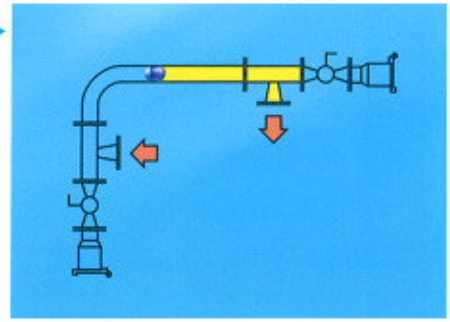
Two-pig system

Three-pig, multiple-pig and individual-pig systems are also available for special applications.

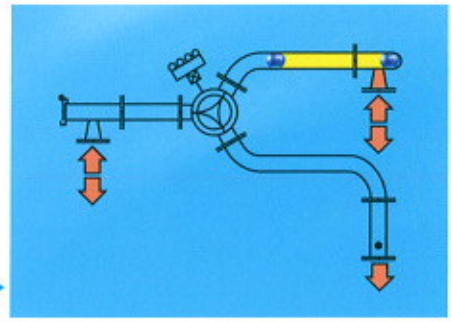
I.S.T. pigging technology.

The right system for your application.

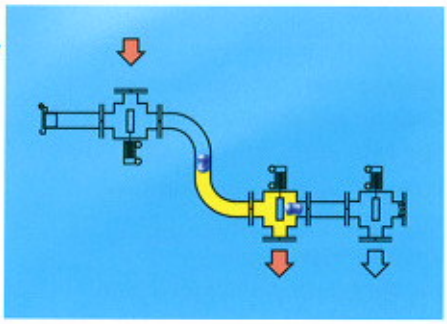
Which I.S.T. pigging system is the right one for you depends on the type of work you need it for. How many and what kind of products do you want to move? What level of cleaning do you expect? What is the limit of your investment expenditure? Just a few questions which need to be answered before planning begins. ◗ Whatever the final result, it will definitely be an customised one, and the optimum solution for your needs.



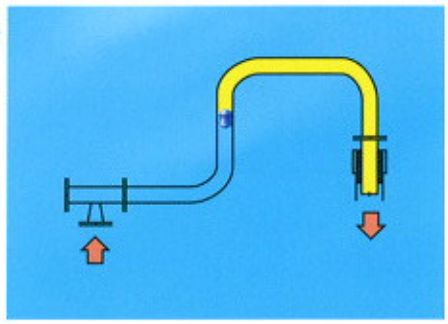
Open system: the pigs are forced into and expelled from the system whenever necessary. The system works on a one-way principle. Recommended for work such as loading ships or for long distance pipelines.



The closed system: the pigs remain in the system for their entire operational life and do not need to be constantly forced into and expelled from the pipe. When they have travelled through the system, they are registered at the receiving station. Once they have been pushed back into the launching station, e.g. with air or nitrogen, they remain there until the next pumping operation. The advantage? Pigs do not need to be changed frequently – they can remain in the system for up to several months.



The two-pig system: this is the pigging principle chosen most often. It has two pigs in a pig launching and receiving station. When the pumping process begins the first pig is pushed into the line and the product then pumped in after it. The second pig pushes the product out of the pipe, cleaning any residue from the pipe as it moves along it.



The single-pig system only has one pig in the pipe which goes into action when, for example, product residue needs to be cleared out of the line. The single-pig system is the cost-effective answer for simple tasks.

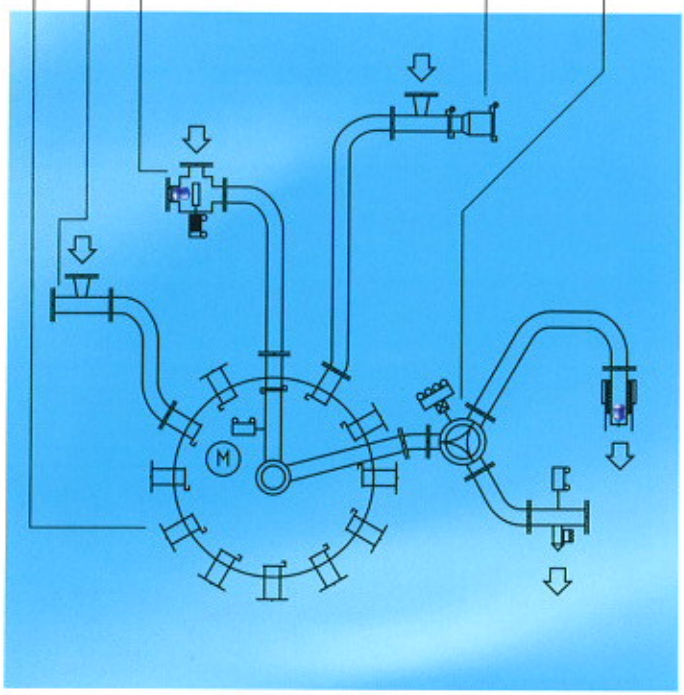
I.S.T. Tee-piece
For pigging in a straight line. The sliding surfaces on the I.S.T. pig remain sealed as it slides through the special Tee-shaped nozzle outlet.

I.S.T. Tee-ring valve
Special fitting with integrated lock and/or pig-receiving function. Enables diversion of product with almost no pressure loss.

I.S.T. sliding coupling
Connects hoses and pipes by an entirely new coupling method: simply slide ends into each other instead of screwing them together.

The I.S.T. modular concept
is ideal for planning your special pigging system quickly.

With the I.S.T. modular concept planning and installation can be fast and systematic. All fittings are particularly compact and compatible, i.e. can be easily replaced or adapted to changes in conditions at a later stage.



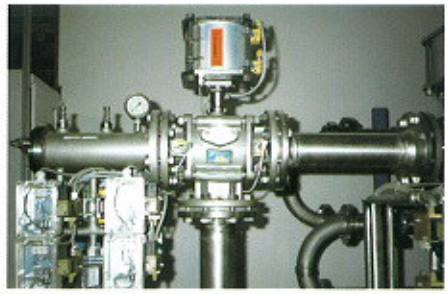
The I.S.T. rotary manifold with pig launching and receiving station
Here you can see how some of the most important I.S.T. fittings can be used in a pigging system – these are just a few fittings from a very wide range. The illustration shows a closed two-pig system.

Advantages of I.S.T. fittings

Compact and space-saving
Gas-tight due to special seals
Protected against contamination
High-quality materials
Precision manufacture
Excellent price-performance ratio

I.S.T. rotary manifold
For connecting piggable pipes smoothly and easily. It makes pipe connections by the sliding coupling method, with up to 12 inlets and outlets.

I.S.T. 3-way pig valve
For variable pipe connection in three directions. Compact design. With either manual or pneumatic actuation. Journal bearings take the torque power of pigs.

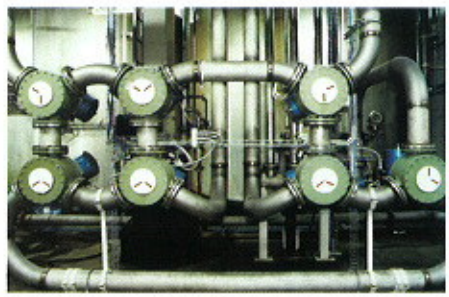


I.S.T. Tee-ring valve
as a pig launching and receiving station, used here in the chemical industry.

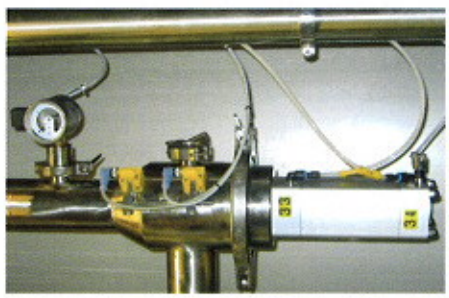
I.S.T. rotary manifold: a group of tanks used in the lubricating oil industry are linked with the I.S.T. rotary manifold.

The original I.S.T. is still the leader: this idea has become an international success.

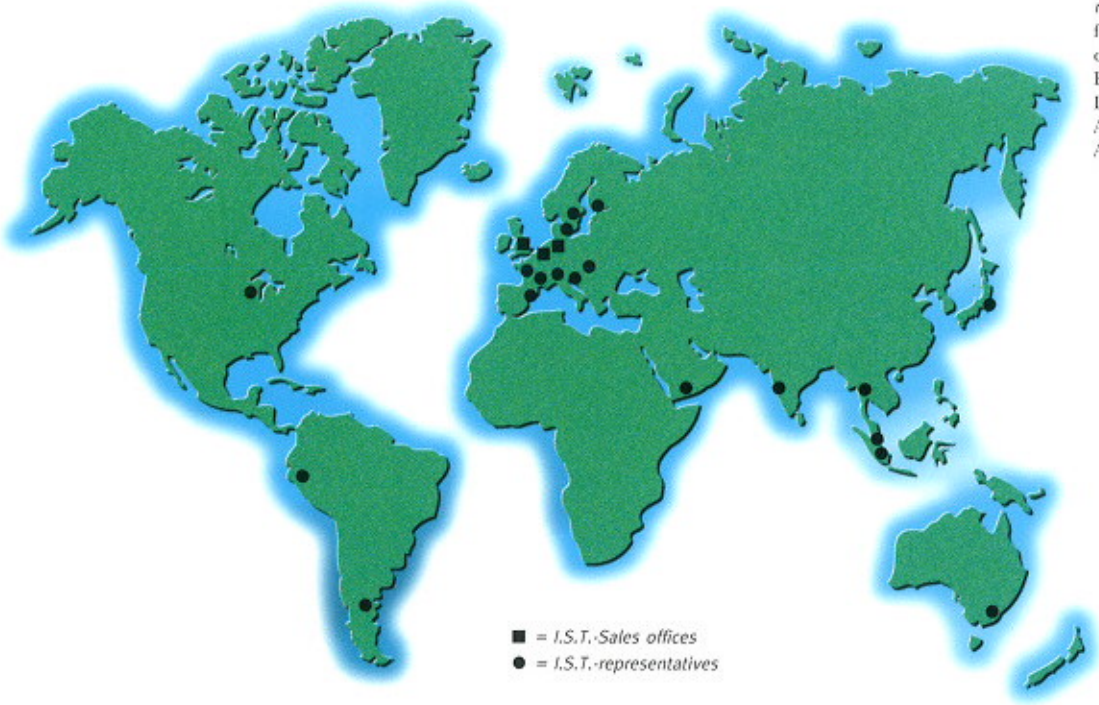
From Ludwigshafen to Singapore, from Dubai to Buenos Aires: on all continents cool and calculating companies are opting for the original. As a result, these companies are profiting from the outstanding benefits of I.S.T. pigging technology: perceptible cost reduction, compliance with even the most stringent environmental regulations, guaranteed high standards of quality due to product purity and rationalisation. ◗ If you optimise your pumping and filling equipment with I.S.T. pigging systems, you too can put your company at the top.



I.S.T. 3-way pig valve: can be used for variable diversion of products, e.g. in the paint and varnish industry.



I.S.T. has developed special pigging systems which can be integrated within conventional "cleaning in place" (CIP) processes.



International representatives for I.S.T. pigging technology can be found in: Europe, USA, Latin- and South America, Asia, Australia and Africa.

I.S.T. service.

I.S.T. fittings and pigs are produced from high-quality chemical and heat-resistant materials, which makes them exceptionally durable. System conception and installation are based on decades of experience and are in the hands of highly-qualified experts in this field, thus ensuring long-term smooth operation of all I.S.T. pigging systems. Maintenance and service increase the operational life of these extremely economical systems even further. The type and scope of this kind of service can, of course, be arranged to suit your individual needs. Our international I.S.T. service and sales points are available whenever you need them.

Whether you require partial retrofitting or a completely new system, I.S.T. pigging technology will suit your needs:

System planning
Design
Partial and complete solutions,
i.e. pigging fittings, pipe laying and control systems; i.e. retrofitting existing pipe systems, pigging fittings and test pigging
Installation
Maintenance
... all from one supplier.

If you are interested in a nocommitment quotation, and would like further information about the benefits of this kind of system, perhaps including detailed comparisons with other systems, please do call us. We will be pleased to send you more detailed information, or to give you advice at a more personal level:

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