FOCUSED ON ISO COMPRESSED AIR QUALITY STANDARDS

Parker compressed air treatment solutions to meet international standards

Parker

ENGINEERING YOUR SUCCESS.

FOCUSED ON COMPRESSED AIR STANDARDS

The International Standards Organisation (ISO) is the world's largest developer of internationally recognised standards.

As a non-governmental organisation the ISO network has members from across 159 countries, with the General Secretariat in Geneva, Switzerland. The organisation bridges relations between the public and private sectors.

As a key member of national governing bodies such as the British Compressed Air Society, the German VDMA and CAGI in the USA; Parker directly contributes to the development of standard for compressed air quality and test methods.

INTERNATIONAL STANDARDS ORGANISATION COMPRESSED AIR STANDARDS

Currently there are three standards directly related to compressed air quality and testing:

ISO12500 Series

This standard is used to benchmark and verify the performance of compressed air filters.

ISO07183

Similar to ISO12500, this standard is used to validate the performance of compressed air dryers.

ISO8573 Series

Consisting of nine parts, ISO8573 specifies the quality of compressed air and the test methods to identify contaminations.

ISO8573-1 is the principal document in this series, it stipulates the amount of contamination allowed in each cubic metre of compressed air. Listed as three main contaminants, (solid particulate, water and oil) each contaminant is detailed into a different class.

ISO8573-1:2010 CLASS	Solid Particulate				Water		Oil
	Maximum number of particulates per m³			Mass Concentration mg/m³	Vapour Pressure Dewpoint	Liquid g/m³	Total Oil (aerosol liquid and vapour)
	0.1 - 0.5 micron	0.5 - 1 micron	1 - 5 micron				mg/m³
0	As specified by the equipment user or supplier and more stringent than Class 1						
1	≤ 20,000	≤ 400	≤ 10	–	≤ -70°C	–	0.01
2	≤ 400,000	≤ 6,000	≤ 100	–	≤ -40°C	–	0.1
3	–	≤ 90,000	≤ 1,000	–	≤ -20°C	–	1
4	–	–	≤ 10,000	–	≤ +3°C	–	5
5	–	–	≤ 100,000	–	≤ +7°C	–	–
6	–	–	–	≤ 5	≤ +10°C	–	–
7	–	–	–	5 - 10	–	≤ 0.5	–
8	–	–	–	–	–	0.5 - 5	–
9	–	–	–	–	–	5 - 10	–
X	–	–	–	> 10	–	> 10	> 10

FOCUSED ON
OPTIMISED SYSTEM DESIGN

From general purpose ring main to critical point of use air, the extensive range of purification equipment available from Parker means that a system can be designed to meet any need.

In many cases treatment of compressed air at the point of generation is not enough to meet specific ISO classes. While 'over treatment' at the point of generation can become a costly mistake when considering system running costs. Parker aims to work with its partners to develop the most efficient system available for the application.

ISO8573-1:2010 compliant equipment

ISO8573-1:2010 CLASS	Solid Particulate		Water	Oil
	Wet Particulate	Dry Particulate	Vapour	Total Oil (aerosol liquid and vapour)
0	–	–	–	OIL-X Grade AO + AA + OVR
1	OIL-X Grade AO + AA	OIL-X Grade AO (M) + AA (M)	Dryer sized for -70°C PDP	OIL-X Grade AO + AA + OVR OIL-X Grade AO + AA +ACS
2	OIL-X Grade AO	OIL-X Grade AO (M)	Dryer sized for -40°C PDP	OIL-X Grade AO + AA
3	OIL-X Grade AO	OIL-X Grade AO (M)	Dryer sized for -20°C PDP	OIL-X Grade AO
4	OIL-X Grade AO	OIL-X Grade AO (M)	Dryer sized for +3°C PDP	OIL-X Grade AO
5	OIL-X Grade AO	OIL-X Grade AO (M)	Dryer sized for +7°C PDP	–
6	–	–	Dryer sized for +10°C PDP	–

FOCUSED ON UNDERSTANDING ISO8573-1:2010 CLASS 0

A number of compressor manufacturers claim that the air from their oil-free compressors deliver air in accordance with Class 0 for total oil and that little to no purification is required downstream.

In some cases when the compressor is tested in clean room conditions there may be a minimal reading with respect to oil. However, when installed in a typical urban environment, the level of contamination drawn into the compressor would result in a higher concentration of oil and render the Class 0 claim invalid.

Class 0 does not mean zero contamination, solid particulate and water vapour would still need to be reduce to acceptable levels to achieve ISO8573-1:2010 standards, meaning additional purification equipment is essential.

Typically, for critical applications in the medical and food industries guidelines state that ISO8573-1:2010 2.2.1 is acceptable, but in rare cases where the application has to meet Class 0 with respect to total oil, the remaining acceptable oil concentration has to be agreed in writing and tested in-line with parts 2-9 of ISO8573-1:2010 to be in accordance with Class 0 standards.

FOCUSED ON
YOUR COMPRESSED AIR NEEDS

To ensure both capital and operational costs are kept to a minimum a careful approach to system design, commissioning and operation are a must.

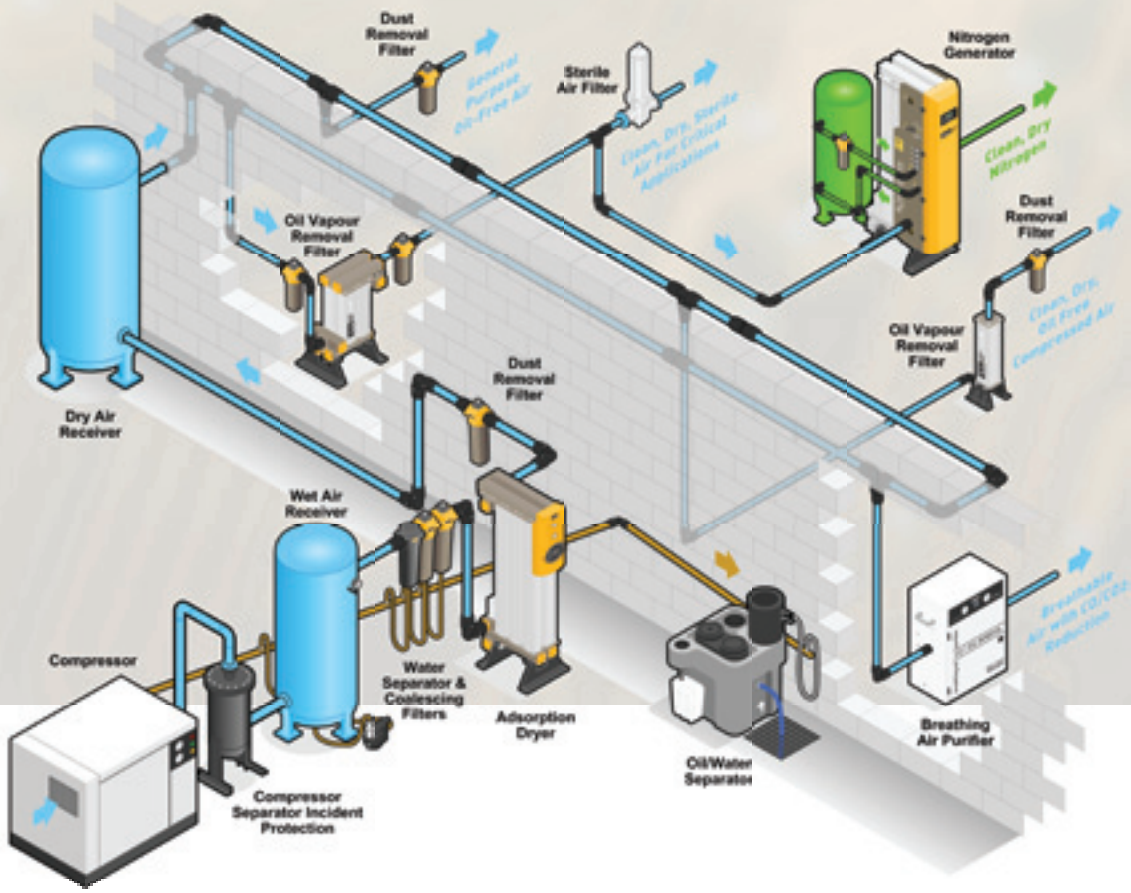
Parker highly recommends that to achieve the correct classification of ISO8573-1:2010 treatment should occur at both generation and then at point of use.

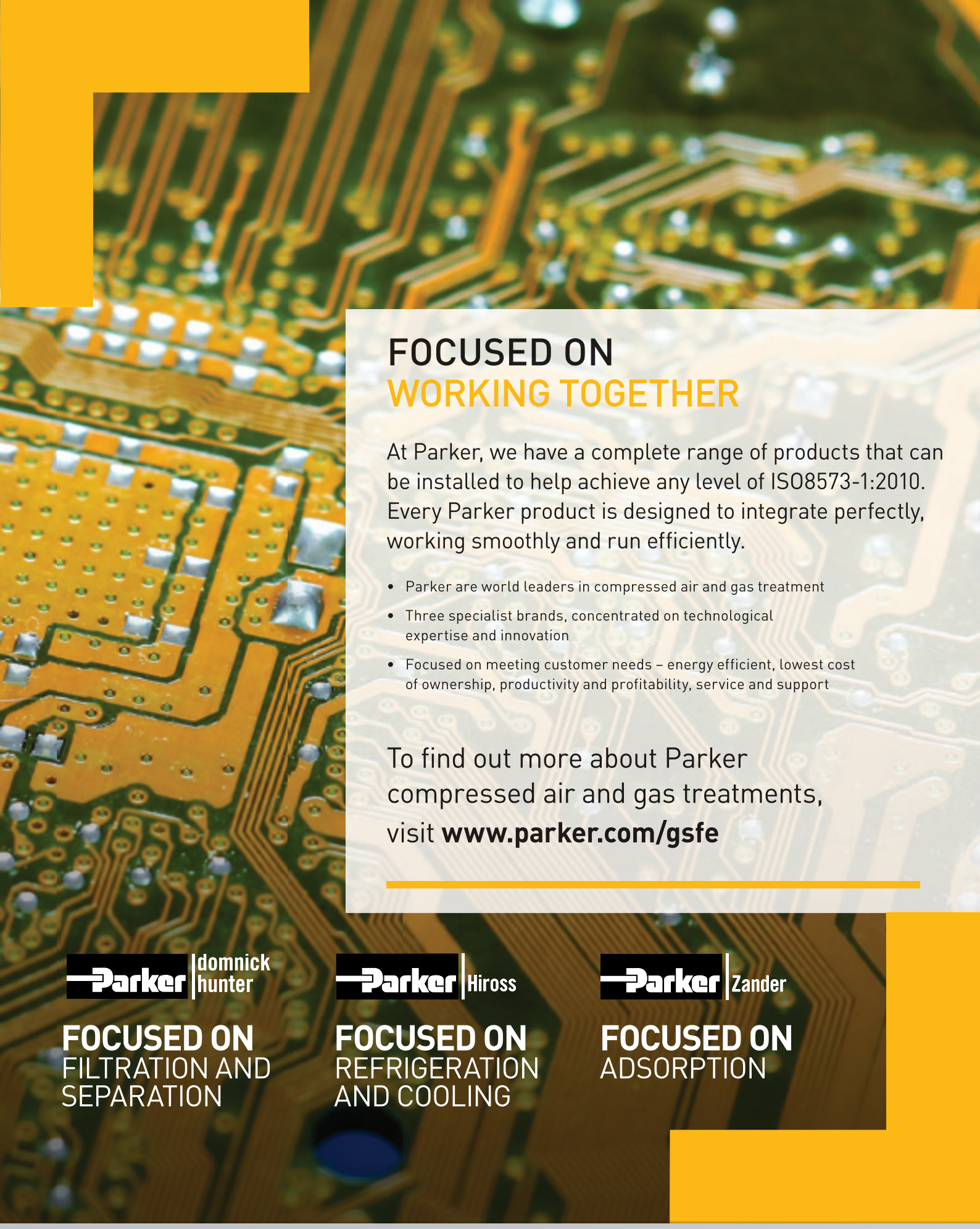
In the compressor room, a general purpose air that will provide the plant with clean dry air which protects the distribution pipping should be generated.

At more critical application points further treatment should occur to achieve higher classes of the ISO standard, this not only helps to remove any contamination remaining in the distribution system, but also provides the most cost effective solution to deliver high quality compressed air. This ensures that air is not 'over treated' at a higher cost in the compressor room.

PERFORMANCE VALIDATION

All Parker filters are designed to provide compressed air that meets the classification set out in ISO8573-1 and when applicable are tested in accordance with ISO12500-1, ISO7183 and the related parts of ISO8573-1:2010, this is always third party witnessed and validated by Lloyds Register.





FOCUSED ON
WORKING TOGETHER

At Parker, we have a complete range of products that can be installed to help achieve any level of ISO8573-1:2010. Every Parker product is designed to integrate perfectly, working smoothly and run efficiently.

- Parker are world leaders in compressed air and gas treatment
- Three specialist brands, concentrated on technological expertise and innovation
- Focused on meeting customer needs – energy efficient, lowest cost of ownership, productivity and profitability, service and support

To find out more about Parker compressed air and gas treatments, visit **www.parker.com/gsfe**

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