



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the LRQA Type Approval.

This certificate is issued to:

MANUFACTURER*	Parker Hannifin Manufacturing Limited
MANUFACTURER ADDRESS*	Dukesway Team Valley Trading Estate Gateshead Tyne & Wear, NE11 0PZ United Kingdom (UK)
TYPE*	FBP HL 100, FBP HL 110, FBP HL 120, FBP HL 130, FBP HL 140, FBP HL 150, FBP HL 160, FBP HL 170 FBP LE 100, FBP LE 110, FBP LE 120, FBP LE 130, FBP LE 140, FBP LE 150, FBP LE 160, FBP LE 170
DESCRIPTION*	FOOD BEVERAGE PHARMACEUTICAL GRADE COMPRESSED AIR TREATMENT SYSTEM (PURIFICATION SYSTEM)
TRADE NAMES	FBP / FOOD BEVERAGE PHARMACEUTICAL / FBP HL (HEATLESS) FBP / FOOD BEVERAGE PHARMACEUTICAL / FBP LE (HEATLESS LOW ENERGY)
APPLICATION	Compressed Air Treatment to provide a supply of Food / Beverage / Pharmaceutical grade, clean, dry, oil-free compressed air
SPECIFIED STANDARD	ISO 7183: 2007 Compressed-air dryers – Specifications and testing ISO8573-1:2010 Contaminant and purity classes ISO8573-2:2018 Contaminant measurement - Oil aerosol content ISO8573-3:1999 Test Methods for measurement of humidity ISO8573-4:2019 Contaminant measurement - Particle content ISO 8573-5:2001 Test methods for oil vapour and organics solvents. ISO12500-1:2007 Filters for compressed air – Test methods Oil Aerosols. Best Practice Guideline (BPG 102-1) Food and Beverage Grade Compressed Air
PRODUCT RATINGS	When sized in accordance with the manufacturer’s instructions, the FBP HL or FBP LE Treatment System will deliver compressed air purity that meets or exceeds the following ISO 8573-1:2010 compressed air purity classifications: Dryer sized for ≤ -40°C PDP - ISO8573-1:2010 Class 1:2:0* Dryer sized for ≤ -70°C PDP - ISO8573-1:2010 Class 1:1:0* BPG 102-1 Direct Contact - ISO8573-1:2010 Class 1:2:0* BPG 102-1 In-direct Contact - ISO8573-1:2010 Class 1:2:0* *Class 0 Total Oil (<0.003mg/m ³) & Better than Class 1



TEST CONDITIONS	<p>The FBP HL or FBP LE Air System is supplied as a package, comprising of Parker OIL-X Grade AO and AA coalescing filters upstream of the dryer and OIL-X Grade OVR adsorption filter, OIL-X Grade AO and OIL-X Grade AA dry particulate filters downstream of the dryer. The combined ISO8573-1 classifications for the total package are stated in the product ratings section above.</p> <p>The Parker OIL-X Grade AO and Grade AA coalescing filters models upstream of the dryer have been tested at ISO reference conditions, in accordance with the requirements of ISO12500-1.</p> <p>When challenged with up to 40mg/m³ of oil aerosol, the measured residual oil content measured downstream achieved an outlet air purity equal to Class 1 (<0.01mg/m³); when challenged with up to 8mg/m³ of oil vapour, the residual oil content measured downstream achieved an outlet air purity equal to Class 0 (< 0.003mg/m³) for oil, as defined by ISO8573-1:2010 .</p> <p>When tested in accordance with the requirements of ISO 7183 and challenged with the inlet conditions of 7bar.g, 35°C, 100% humidity, 25°C ambient temperature and 100% rated flow (as required by Table 2, Option A1), the FBP Oil Free Air System on test achieved the following outlet pressure dew points (PDP):</p> <ul style="list-style-type: none"> • When flowed to achieve a pressure dew point of ≤-40°C, the FBP dryer on test achieved a consistent outlet pressure dew point ≤-40°C, equating to ISO8573-1:2010 Class 2 for water. • When flowed to achieve a pressure dew point of ≤-70°C, the FBP dryer on test achieved a consistent outlet pressure dew point ≤ -70°C, equating to ISO8573-1:2010 Class 1 for water. <p>Power consumption (peak & average) & purge air volume were also tested and recorded in accordance with ISO7183.</p> <p>The Parker OIL-X Grade AO dry particulate filter installed downstream has been tested in accordance with the requirements of ISO 8573-4. The declared air purity class measured upstream and downstream of the FBP HL or FBP LE Oil Free Air System in accordance with ISO 8573-4 is provided below:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Upstream air purity class</th> <th>Downstream air purity class</th> <th>Measurement uncertainty on concentration</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Class 3</td> <td style="text-align: center;">Class 1</td> <td style="text-align: center;">±2.5%</td> </tr> </tbody> </table>	Upstream air purity class	Downstream air purity class	Measurement uncertainty on concentration	Class 3	Class 1	±2.5%
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Class 3	Class 1	±2.5%					

NOTES	<p>British Compressed Air Society Best Practice Guideline 102-1 Food & Beverage Grade Compressed Air recommends that each compressed air usage point in a food and beverage manufacturing facility be designated as either Direct Contact, In-direct Contact or Non-Food Contact.</p> <p>To ensure consumer safety, the minimum recommended ISO 8573-1:2010 air purity classification for usage points designated as Direct Contact is:</p> <p>ISO 8573-1:2010 Class 1:2:1</p> <p>To ensure consumer safety, the minimum recommended ISO 8573-1:2010 air purity classification for usage points designated as In-direct Contact is:</p> <p>ISO 8573-1:2010 Class 1:2:1</p> <p>Parker FBP treatment systems meet the minimum requirements for both Direct Contact & In-direct Contact applications as recommended in British Compressed Air Society Best Practice Guideline 102-1</p>
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	<p><i>Details of the equipment, methodology and results are contained within the Technical Documentation Files referred to in the Design Appraisal Documents COV1613827 O-33199/DH, COV1713761 O-34016/DH, COV1713837 O-34723/DH, PRJ11100398745 O-39903/PKC, PRJ11100430846 O-41012/PKC in conjunction with all supplementary Type Approval Terms & Conditions form part of this Certificate.</i></p>
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“This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify LRQA Verification Limited of any modification or changes to the equipment in order to obtain a valid certificate.”

Pradip Chongder
 Manager – Design Appraisal, Inspection Services
 LRQA Verification Limited
 1 Trinity Park, Bickenhill Lane,
 Birmingham, B37 7ES, UK.
 Phone: +44 (0) 330 414 1337
 Email : Pradip.Chongder@lrqa.com