

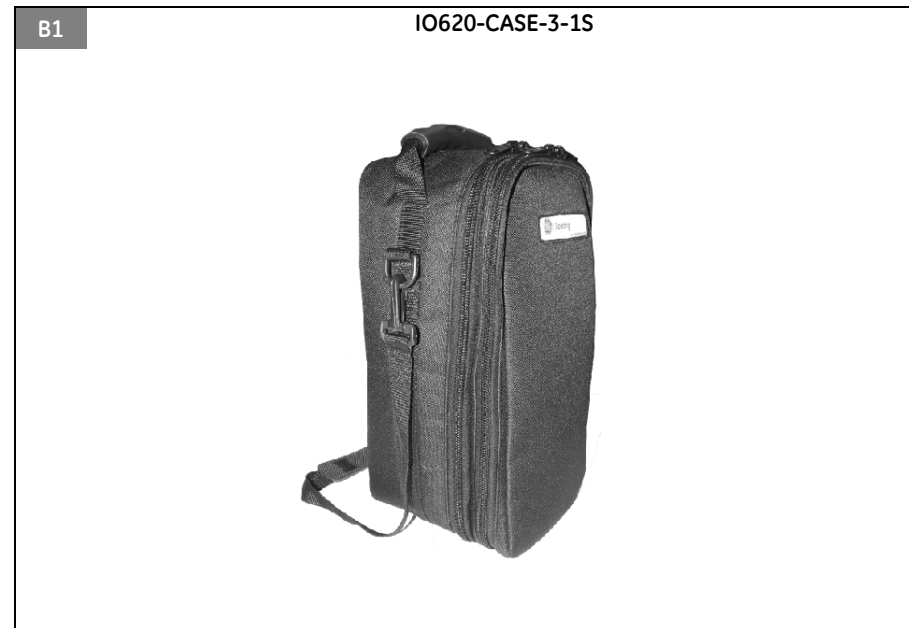
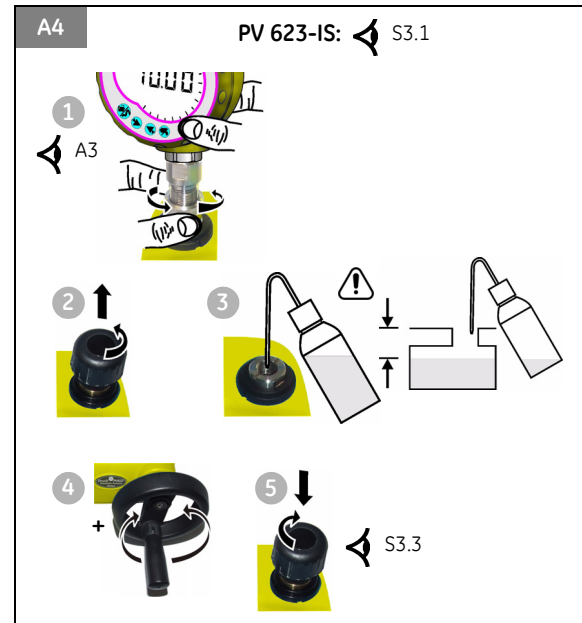
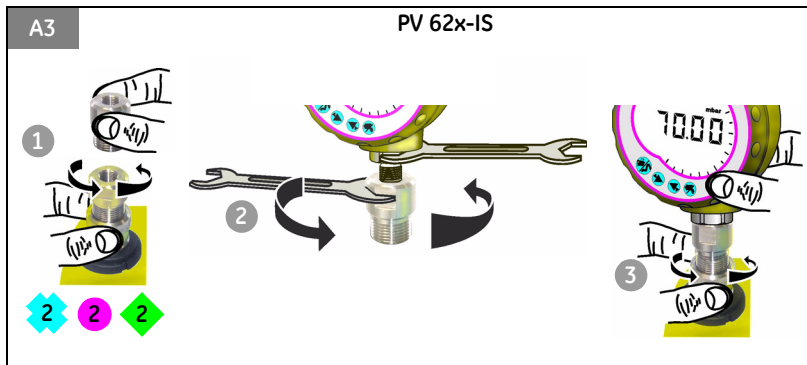
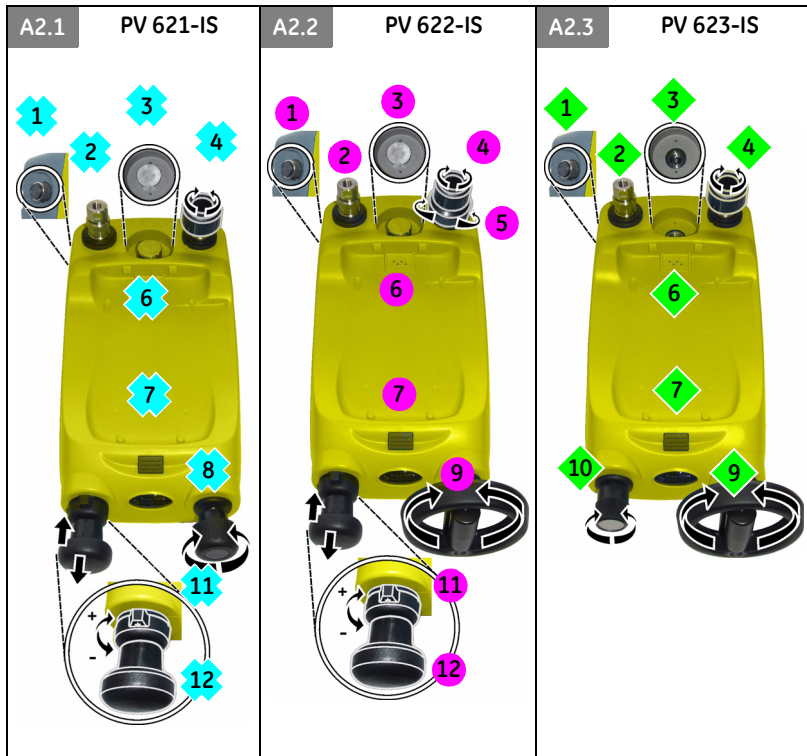
GE
Sensing & Inspection Technologies

Druck PV 62x-IS

pneumatic/hydraulic pressure stations

safety and quick reference guide - K0463





EC Declaration of Conformity

Product: PV 62X- IS SERIES PRESSURE STATION

The above product meets the protection requirements of the relevant EC Directives.

Supplier: Druck Ltd. Fir Tree Lane, Groby, Leicester, LE6 0FH, England
Tel: +44 (0) 116 231 7100 Fax: +44 (0) 116 231 7101

Signed: *R. Jones* Date: 11th June 2009
For and on behalf of Druck Limited

Print Name: R Jones Position: Chief Engineer

Relevant European Directives	
Directive Name	Directives
Equipment and Protective Systems for Use in Potentially Explosive Atmospheres (ATEX)	94/9/EC †

† The ATEX directive only applies to apparatus marked with Technical File number TN1024

NOTES:

The apparatus must be used in accordance with its specifications, especially (but not limited to) pressure and temperature limits.

ATEX DIRECTIVE

The apparatus design has been subject to assessment for the following type of protection:

- Constructional Safety 'c', for Group II Category 2 equipment – c IIC T6 X (-10°C ≤ Ta ≤ +50°C) – Technical File TN1024 – Dossier Receipt no. Baseefa09ATEX0177DR

The apparatus' design was assessed to:

- EN 13463-1:2009 Non-electrical equipment for use in potentially explosive atmospheres. Basic method and requirements.
- EN 13463-5:2003 Non-electrical equipment intended for use in potentially explosive atmospheres. Protection by constructional safety 'c'.

The Technical File for the above apparatus is lodged at Baseefa (notified body number 1180) – Baseefa Ltd, Rockhead Business Park, Staden Lane, Buxton, Derbyshire, SK17 9RZ, United Kingdom.

The apparatus must be used in accordance with the supplied instructions for hazardous area equipment, K0463.

PRESSURE EQUIPMENT DIRECTIVE

The product has been assessed as equipment of relatively low hazard and has been designed within the bounds of 'sound engineering practice' in line with the pressure equipment directive.


A1.1

PV 621-IS: Pneumatic pressure station (Figure A2.1)
-950 mbar to 20 bar (-13.5 to 300 psi)
PV 622-IS: Pneumatic pressure station (Figure A2.2)
-950 mbar to 100 bar (-13.5 to 1500 psi)
PV 623-IS: Hydraulic pressure station (Figure A2.3)
0 to 1000 bar (0 to 15000 psi)

A1.2 PV 62x-IS + DPI 620-IS + PM 620-IS to be issued later

A1.3 PV 62x-IS pressure relief valves (PRV) (Recommended options)

Parts: IO620-PRV-P1 to P8 (Pneumatic)	
PV 621-IS models	1 to 30 bar (14.5 to 435 psi)
PV 622-IS models	1 to 100 bar (14.5 to 1500 psi)
Parts: IO620-PRV-H1 to H5 (Hydraulic)	
PV 623-IS models	50 to 1000 bar (725 to 15000 psi)

Note:  = See figure, table, or section.

Customer service

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Trademarks



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ATEX Approved Models

Introduction

These instructions detail the requirements for using the PV 62x-IS constructional safe pressure station in a hazardous area. Read the whole publication before starting.

Markings

 II 2 G.....	Equipment group & category
c IIC T6 X (-10°C ≤ Ta ≤ +50°C).....	Hazardous location markings
TN1024.....	Technical file number
	CE Mark
PV 62x-IS.....	Specific apparatus type
(Pressure in bar or psi).....	Maximum working pressure rating
Druck LTD. Groby, LE6 0FH, UK.....	Manufacturer's name and address
S/N *****.....	Serial number
DoM MMM YYYY.....	Date of manufacture, Month and Year

Requirements and Conditions

Special Condition of Safe Use

The pressure media hoses, used with the PV 62x-IS must be electrically conductive for earthing purposes.

This is to comply with EN13463-1:2009 clause 6.7.2, preventing dangerous potential differences.

Installation

WARNING

- **Do not use tools on the Pressure Station that might cause incendive sparks - this can cause an explosion.**
- **Provide additional protection for equipment that may be damaged in service.**
- **Installation should be carried out by qualified plant installation technicians in compliance with the latest issue of EN 60079-14.**
- **ATEX models are not approved for use in oxygen-enriched environments.**
- **The pressure medium must be compatible with the materials listed in the wetted parts list and those of the enclosure and controls defined in Pressure Data table, page 3.**
- **If the enclosure of the pressure station is damaged, it must be returned for repair.**

Compatibility

PV 62x-IS pressure stations marked with Technical File number TN1024 are not permitted for use in conjunction with DPI 620, DPI 620-IS, PM 620-IS, or PM 620-IS.

Declaration Requirements

The PV 62x-IS is designed and manufactured to meet the essential health and safety requirements not covered by the Technical File TN1024 when installed as detailed above. The constructional safe instrument is designed and manufactured to protect against other hazards as defined in paragraph 1.2.7 of Annex II of the ATEX Directive 94/9/EC.

Pressure data (PV 62x-IS models)

	PV 621-IS: (Pneumatic)	PV 622-IS: (Pneumatic)	PV 623-IS: (Hydraulic)
Range	-950 mbar to 20 bar (-13.5 to 300 psi)	-950 mbar to 100 bar (-13.5 to 1500 psi)	0 to 1000 bar (0 to 15000 psi)
Minimum resolution with a typical test volume	0.001 bar (0.0145 psi)	0.005 bar (0.0725 psi)	0.1 bar (1.45 psi)
Pressure system volume			
V1: Volume adjuster	≈ 9.6 cm ³ (0.6 in ³)	≈ 16.8 cm ³ (1.0 in ³)	≈ 1.7 cm ³ (0.1 in ³)
V2: Pump	≈ 14.3 cm ³ (0.9 in ³)	≈ 14.3 cm ³ (0.9 in ³)	<i>Not applicable</i>
V3: Other	≈ 3.0 cm ³ (0.2 in ³)	≈ 3.0 cm ³ (0.2 in ³)	≈ 2.0 cm ³ (0.1 in ³)
Total: V1 + V3	≈ 12.6 cm ³ (0.8 in ³)	≈ 19.8 cm ³ (1.2 in ³)	≈ 3.7 cm ³ (0.2 in ³)
Material of wetted parts	Aluminium, brass, stainless steel, nitrile and polyurethane seals, PTFE, acetal, nylon	Aluminium, brass, stainless steel, nitrile and polyurethane seals, PTFE, acetal, nylon	Brass, stainless steel, phosphor bronze, nitrile and polyurethane seals, PTFE, polyethylene
Leak rates:			
1) at maximum pressure	0.01 bar/min (0.145 psi/min)	0.02 bar/min (0.29 psi/min)	1 bar/min (14.5 psi/min)
2) at maximum vacuum	0.005 bar/min (0.073 psi/min)	0.01 bar/min (0.145 psi/min)	<i>Not applicable</i>
Material of enclosure and controls	Polycarbonate, Polyamide, Polypropylene, Acrylic, Cotton	Aluminium, Polycarbonate, Polyamide, Polypropylene, Acrylic, Cotton	Polycarbonate, Polyamide, Polypropylene, Acrylic, Cotton

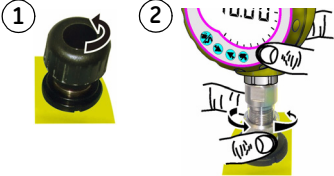
Quick Reference

WARNING: Before using this instrument, read and understand the ATEX requirements and conditions and the “Safety” section. It is dangerous to ignore the specified warnings.

❖ S1 PV 621-IS models: Start operations

↗ A2.1 (Page 1)

S1.1 Release the pressure/Attach the device under test



Step	Procedure	
1.	Release the pressure.	❖ 4
2.	Use the applicable adaptor to attach the device; figure A3.	❖ 2

S1.2 Vacuum OR pressure operation



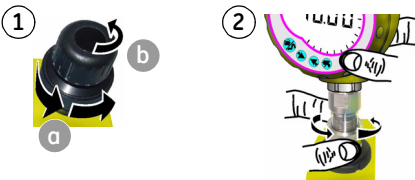
Step	Procedure (Vacuum)	
1.	Set to vacuum operation (-).	❖ 11
2.	Turn the volume adjuster to mid-range or fully clockwise.	❖ 8
3.	Seal the system.	❖ 4
4.	Set the vacuum with the pump.	❖ 12
5.	Adjust the vacuum (+ decrease; - increase).	❖ 8

Step	Procedure (Pressure)	
1.	Set to pressure operation (+).	❖ 11
2.	Turn the volume adjuster to mid-range.	❖ 8
3.	Seal the system.	❖ 4
4.	Set the pressure with the pump.	❖ 12
5.	Adjust the pressure (+ increase; - decrease).	❖ 8

● S2 PV 622-IS models: Start operations

↗ A2.2 (Page 1)

S2.1 Release the pressure/Attach the device under test



Step	Procedure	
1.	Release the pressure: Open the refill valve (1 turn) then fully open the pressure release valve.	❖ 5 ❖ 4
2.	Use the applicable adaptor to attach the device; figure A3.	❖ 2

S2.2 Vacuum OR pressure operation



Step	Procedure (Vacuum)	
1.	Set to vacuum operation (-).	11
2.	Open the refill valve (1 turn).	5
3.	Wind the volume adjuster to mid-range or fully clockwise.	9
4.	Seal the system.	4
5.	Set the vacuum with the pump.	12
6.	Adjust the vacuum (+ decrease; - increase).	9



Step	Procedure (Pressure)	
1.	Set to pressure operation (+).	11
2.	Wind the volume adjuster to mid-range.	9
3.	Seal the system.	4
4.	Use the pump to set a pressure up to ≈ 20 bar (300 psi).	12
5.	Open the refill valve (1 turn). You now have full control to increase (+) or decrease (-) the pressure with the volume adjuster.	5 9
6.	If you increase pressure and get to the limit of travel, close the refill valve and wind the volume adjuster fully counterclockwise. There is no change in pressure.	5 9
7.	Refill the pressure mechanism with the pump (≈ 15 cycles) and wind the volume adjuster clockwise until the pressure starts to increase.	12 9
8.	Continue to do steps 5 to 7 until you get the necessary pressure.	

◆ S3 PV 623-IS models: Start operations

↗ A2.3 (Page 1)

S3.1 Fill the reservoir. Figure A4 (front cover). The first time you want to use the hydraulic pressure station, use this procedure to fill the reservoir:

Step	Procedure	
1.	Use the applicable adaptor to attach the device; figure A3.	◆ 2
2.	Remove the hydraulic pressure release valve.	◆ 4
3.	Use the refill bottle to add the necessary hydraulic fluid but leave a small air gap.	◆ 4

Step	Procedure	
4.	To remove air from the pressure mechanism, wind the volume adjuster through one full cycle (counterclockwise then clockwise).	◆ 9
5.	Seal the system and continue with the normal pressure operation.	◆ 4

S3.2 Release the pressure/Attach the device under test



Step	Procedure	
1.	Release the pressure: Open the refill valve (1 turn) then fully open the pressure release valve.	◆ 10 ◆ 4
2.	Use the applicable adaptor to attach the device; figure A3.	◆ 2

Note: Fill the reservoir before you attach the device. See figure A4 (front cover).

S3.3 Hydraulic pressure operation



Step	Procedure	
1.	Seal the system.	◆ 4
2.	Close the refill valve and then wind the volume adjuster fully clockwise and counterclockwise until the pressure starts to increase. The counterclockwise operation refills the pressure mechanism without a change in pressure.	◆ 10 ◆ 9

Step	Procedure	
3.	Open the refill valve (1 turn). You now have full control to increase (+) or decrease (-) the pressure with the volume adjuster.	◆ 10 ◆ 9
4.	If you increase pressure and get to the limit of travel, close the refill valve again and wind the volume adjuster fully counterclockwise.	◆ 10 ◆ 9
5.	Continue to do steps 2 to 4 until you get the necessary pressure.	

1 Overview

PV 621-IS



PV 622-IS



There are three pressure stations in the PV 62x-IS series:

- two pneumatic pressure stations to give you accurate and controlled pressure and vacuum conditions:

PV 621-IS: -950 mbar to 20 bar (-13.5 to 300 psi) version

PV 622-IS: -950 mbar to 100 bar (-13.5 to 1500 psi) version

PV 623-IS



- one hydraulic pressure station to give you accurate and controlled hydraulic pressure conditions:

PV 623-IS: 0 to 1000 bar (15000 psi)

1.1 Other module options

The pressure stations are part of a set of hand-held modules that can be quickly put together to include a wide range of calibrator functions. Details to be issued later.

2 Standard equipment

These items are part of the standard equipment with a PV 62x-IS pressure station:

- Removable pressure adaptors (G1/4 and 1/8 NPT)
- PV 623-IS model only: Refill bottle for hydraulic fluid
- Safety and quick reference guide

3 Safety

Before you use the instrument, make sure that you read and understand all the related data. This includes: the applicable local safety procedures, the user manual (K0462), and the instructions for the accessories/options/equipment you are using it with.

General warnings

WARNING

- **It is dangerous to ignore the specified limits for the instrument or to use the instrument when it is not in its normal condition. Use the applicable protection and obey all safety precautions.**





Pressure warnings

-
- **It is dangerous to attach an external source of pressure to a PV 62x-IS series pressure station. Use only the internal mechanisms to set and control the pressure in the pressure station.**
 - **To prevent a dangerous release of pressure, isolate and bleed the system before you disconnect a pressure connection.**
 - **To prevent a dangerous release of pressure, make sure that all the related pipes, hoses and equipment have the correct pressure rating, are safe to use and are correctly attached.**

Continued

Before you start an operation or procedure in this publication, make sure that you have the necessary skills (if necessary, with qualifications from an approved training establishment). Follow good engineering practice at all times.













Marks and symbols on the instrument

	Complies with European Union directives		Warning - refer to the manual
	Read the manual	PRV	Pressure relief valve
	Do not dispose of this product as household waste. Refer to "Maintenance" (Section 6).		
More marks and symbols are specified in the user manual (K0462 - Druck PV 62x-IS pneumatic/hydraulic pressure stations)			

4 Parts

Refer to the figures on the front cover (A2, B1).

4.1 Key to figure A2 (PV 62x-IS pressure stations)

A2		1.	Optional accessory: Pressure connection for a pressure relief valve (PRV); see table A1.3 (front cover). A blanking plug is standard.
		2.	Test port: Pressure connection (G1/8 or 1/8NPT) to attach the device under test; see figure A3 (front cover).
		3.	Pressure and electrical connections for a PM 620-IS module. PV 621-IS/PV 622-IS models: Seal the pressure connection with a blanking plug (Part: IO620-BLANK) or a PM 620-IS module. PV 623-IS models only: The pressure connection seals itself.
		4.	Pneumatic pressure release valve (PV 621-IS/PV 622-IS models) or hydraulic pressure release valve (PV 623-IS models) to release pressure in the system. On PV 623-IS models, it also gives access to the hydraulic fluid reservoir; see figure A4 (front cover).
		5.	PV 622-IS models only: Pneumatic refill valve. Close it to seal off the device pressure and refill the pressure mechanism (refer to "Quick Reference", S2).
		6.	Moulded compartment for the DPI 620-IS calibrator with electrical connections and a mechanism to hold it in position.
		7.	Push-button mechanism to release the DPI 620-IS calibrator.
		8.	PV 621-IS models only: Pneumatic volume adjuster
		9.	PV 622-IS/PV 623-IS models only: Volume adjuster wheel with fold-in handle.
		10.	PV 623-IS models only: Hydraulic refill valve. Close it to seal off the device pressure and refill the pressure mechanism with fluid (refer to "Quick Reference", S3).
		11.	PV 621-IS/PV 622-IS models only: Pressure/vacuum selector to set the pump operation: pressure (+), vacuum (-).
		12.	PV 621-IS/PV 622-IS models only: Pump mechanism

4.2 *To be issued later.*

5 Installation

Before starting:

- Read and understand the “Safety” section.
- Do not use damaged equipment.

Note: *Use only original parts supplied by the manufacturer.*

5.1 *External pressure connections*

See figure A3 (front cover). Use an applicable method to seal the external pressure connections, and then tighten to the applicable torque. Maximum torque:

1/8 NPT: 35 Nm (26 lbf.ft)

G1/8: 25 Nm (18.4 lbf.ft)

5.2 *To be issued later.*

6 Maintenance

Clean the case with a moist, lint-free cloth and a weak detergent. Do not use solvents or abrasive materials.

Return the instrument to the manufacturer or an approved service agent for all repairs. Do not dispose of this product as household waste. Use an approved organisation that collects and/or recycles waste electrical and electronic equipment. For more information, contact one of these:

- our customer service department:
(Contact us at www.gesensinginspection.com)
- your local government office.

7 Specification

Table 1: General specification

Operating temperature	-10 to 50°C (14 to 122°F) Note: PV 623-IS model only. If the temperature is less than 4°C (39°F), the instrument must be fully drained and dry.
Storage temperature	-20 to 70 °C (-4 to 158 °F) Note: PV 623-IS model only. If the temperature is less than 4°C (39°F), the instrument must be fully drained and dry.
Humidity	0 to 90% relative humidity (RH) non-condensing
Shock/Vibration	Def Stan 66-31, 8.4 cat III
EMC	Electromagnetic compatibility: BS EN 61326-1:2006
Electrical safety	Electrical - BS EN 61010:2001
Pressure safety	Pressure Equipment Directive - Class: Sound Engineering Practice (SEP)
Approved	CE Marked
Hydraulic fluid (PV 623-IS model only)	Reservoir capacity: 100 cm ³ (6.1 in ³) Fluid type: Demineralized water or a mineral oil (ISO viscosity grade ≤ 22)



1 **DOSSIER RECEIPT**

2 **Equipment (or Component Intended for use on/in an Equipment)**
3 **Intended for use in Potentially Explosive Atmospheres - Directive 94/9/EC**

4 Receipt Number: **Baseefa09ATEX0177DR**
5 Equipment or Component: **PV 62X-IS Series Pressure Station**
6 Manufacturer: **Druck Limited**
7 Address: **Fir Tree Lane, Groby, Leicester, LE6 0FH**
8 Manufacturer's Reference for the Dossier: **TN1024**


- 9 Baseefa certifies receipt of a dossier, identified above, in accordance with Article 8, Paragraph 1 (b) (ii) of European Union Directive 94/9/EC of 23 March 1994.
- 10 Baseefa has not read the dossier, is not aware of its contents and has assumed that the manufacturer has prepared the dossier as required by the module "Internal Control of Production", Annex VIII to Directive 94/9/EC.
- 11 Baseefa will retain the dossier for a period not less than ten years from the date of issue of this receipt and will make it available to the relevant national authorities on request.
- 12 The period of retention may be increased on the request of the manufacturer, in order to preserve a record of the dossier for a period not less than ten years after last production of the equipment or component to which the dossier relates.
- 13 The manufacturer may add supplemental information to the dossier during the period of retention, but may not remove or otherwise alter the dossier during the period of retention.
- 14 The manufacturer may not mark the equipment with the number of this receipt nor use this receipt to make representations about the design of the equipment.

Baseefa Customer Reference No. 0312

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DIRECTOR
On behalf of
Baseefa

intentionally blank