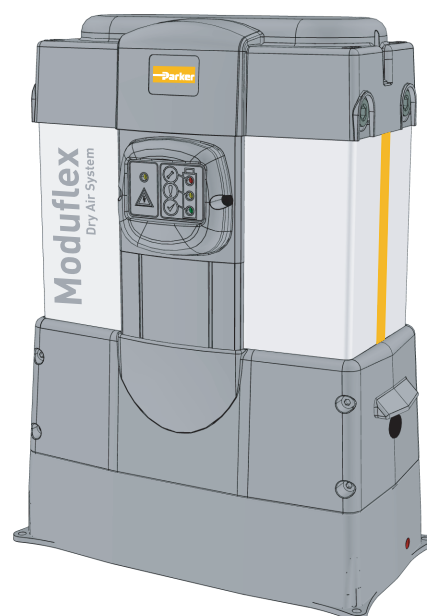




Moduflex
Dry Air System

Desiccant Air Dryer P3TJA13A1AN - P3TJA13A7AN



(EN) USER GUIDE (Original Language)

(NL) GEBRUIKERSHANDLEIDING
(SV) BRUKSANVISNING
(ES) GUÍA DEL USUARIO
(SK) UŽIVATELSKÁ PŘÍRUČKA
(LV) LIETOTĀJA ROKASGRMĀTA
(SL) NAVODILA ZA UPORABO

(DE) BENUTZERHANDBUCH
(NO) BRUKERVEILEDNING
(PT) GUIA DO UTILIZADOR
(CS) UŽIVATELSKÁ PŘÍRUČKA
(LT) VARTOTOJO VADOVAS
(TR) KULLANIM KILAVUZU

(FR) GUIDE D'UTILISATION
(DA) BRUGERVEJLEDNING
(IT) MANUALE UTENTE
(ET) KASUTUSJUHEEND
(RU) РУКОВОДСТВО ПОЛЬЗОВАТЕЛЯ
(MT) GWIDA GĦALL-UTENT

(FI) KÄYTTÖOPAS
(EL) ΕΓΧΕΙΡΙΔΙΟ ΧΡΗΣΗΣ
(PL) INSTRUKCJA UŻYTKOWNIKA
(HU) HASZNÁLATI UTASÍTÁS

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1 Safety Information

Important: Do not operate this equipment until the safety information and instructions in this user guide have been read and understood by all personnel concerned.

Only competent personnel trained, qualified, and approved by Parker Hannifin should perform installation, commissioning, service and repair procedures.

Use of the equipment in a manner not specified within this user guide may result in an unplanned release of pressure, which may cause serious personal injury or damage.

When handling, installing or operating this equipment, personnel must employ safe engineering practices and observe all related regulations, health & safety procedures, and legal requirements for safety.

Ensure that the equipment is depressurised and electrically isolated, prior to carrying out any of the scheduled maintenance instructions specified within this user guide.

Most accidents that occur during the operation and maintenance of machinery are the result of failure to observe basic safety rules and procedures. Accidents can be avoided by recognising that any machinery is potentially hazardous.

Parker Hannifin can not anticipate every possible circumstance which may represent a potential hazard. The warnings in this manual cover the most known potential hazards, but by definition can not be all-inclusive. If the user employs an operating procedure, item of equipment or a method of working which is not specifically recommended by **Parker Hannifin** the user must ensure that the equipment will not be damaged or become hazardous to persons or property.

Should you require an extended warranty, tailored service contracts or training on this equipment, or any other equipment within the **Parker Hannifin** range, please contact your local **Parker Hannifin** office.

Details of your nearest **Parker Hannifin** sales office can be found at www.parker.com

Retain this user guide for future reference.

1.1 Markings and Symbols

The following markings and international symbols are used on the equipment and within this user guide:



Caution, Read the User Guide.



Risk of electric shock.



Warning

Highlights actions or procedures which, if not performed correctly, may lead to personal injury or death.



Caution

Highlights actions or procedures which, if not performed correctly, may lead to damage to this product.



Warning

Highlights actions or procedures which, if not performed correctly, could lead to electric shock.



Wear hearing protection.



When disposing of old parts always follow local waste disposal regulations.



Conformité Européenne

1.2 Hazardous Substances

The chambers of the dryer are filled with DRYFIL desiccant material. This is a powerful desiccant and will dry out the atmosphere, eyes, nose, and mouth.

If the desiccant comes into contact with the eyes or skin, wash the affected area with copious amounts of water.

DRYFIL may contain some dust therefore an orinasal dust respirator should be worn when handling the equipment. Adequate ventilation should be provided when working with desiccant.

The desiccant is classified as non-hazardous for transportation.

DRYFIL will evolve heat on contact with moisture and may generate pressure in a confined space. DRYFIL should therefore be stored in a dry place in its original packaging.

DRYFIL is non-flammable. Any fire should be fought by means appropriate to the material causing the fire.

DRYFIL should be disposed of into a licensed land fill site.

2 Description

Parker Hannifin desiccant dryers are designed to remove moisture vapour from compressed air. Providing pressure dewpoints of -40°C (-40°F) or -70°C (-100°F) at specified conditions.

ISO8573.1 : 2001 Edition

Dewpoint Selected

-40°C Pressure Dewpoint

-70°C Pressure Dewpoint

Product Installed

Moduflex 1 micron Filter + Dryer

Moduflex 1 micron Filter + Dryer

ISO Classification

ISO8573.1 : 2001 Class 3.2.2

ISO8573.1 : 2001 Class 3.1.2

ISO8573.1 1991 Edition

Dewpoint Selected

-40°C Pressure Dewpoint

-70°C Pressure Dewpoint

Product Installed

Moduflex 1 micron Filter + Dryer

Moduflex 1 micron Filter + Dryer

ISO Classification

ISO8573.1 : 1991 Class 2.2.2

ISO8573.1 : 1991 Class 2.1.2

The dryers comprise of extruded aluminium columns. Each column contains twin chambers filled with desiccant material that dries the compressed air as it passes through. One chamber is operational (drying), whilst the opposite chamber is regenerating by Pressure Swing Adsorption (PSA).

Pressure Swing Adsorption (PSA)

A small amount of the dried compressed air is used to regenerate the spent desiccant bed. Dried air at line pressure is expanded to atmospheric pressure through the regenerating column.

2.1 Technical Specification

This specification is valid when the equipment is located, installed, operated, and maintained as specified within this user guide.

Stated flows are for operation at 7 bar g (102 psi g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other conditions, apply the correction factors shown..

Model	Port Size	Max inlet Temperature	Inlet Pressure (bar)								
			4	5	6	7	8	9	10	11	12
P3TJA13A1AN	3/8"	20° C	53	63	75	85	82	92	100	110	118
	3/8"	35° C	33	47	66	85	80	99	118	142	165
	3/8"	40° C	32	46	64	82	77	97	114	138	160
	3/8"	45° C	29	42	58	75	70	87	104	125	145
	3/8"	50° C	24	35	48	62	58	73	86	103	142
P3TJA13A2AN	3/8"	20° C	90	107	125	142	137	153	167	183	198
	3/8"	35° C	57	80	110	142	133	165	197	236	277
	3/8"	40° C	55	78	106	138	129	161	190	229	269
	3/8"	45° C	50	71	96	125	116	145	174	209	244
	3/8"	50° C	41	59	80	104	97	121	144	172	238
P3TJA13A3AN	3/8"	20° C	143	170	200	227	220	245	267	292	317
	3/8"	35° C	90	128	176	227	213	265	315	377	444
	3/8"	40° C	87	124	170	220	207	257	304	365	431
	3/8"	45° C	79	112	154	200	187	233	278	333	390
	3/8"	50° C	66	94	128	166	156	194	230	274	380
P3TJA13A4AN	3/8"	20° C	178	213	250	283	275	307	335	365	397
	3/8"	35° C	112	160	220	283	267	332	395	471	556
	3/8"	40° C	109	155	213	275	259	322	382	456	540
	3/8"	45° C	98	141	193	249	234	292	348	416	488
	3/8"	50° C	82	117	160	207	195	243	288	343	476
P3TJA13A5AN	3/8"	20° C	232	277	323	368	357	398	435	475	515
	3/8"	35° C	146	208	284	368	346	430	513	613	721
	3/8"	40° C	142	202	275	357	336	418	496	594	700
	3/8"	45° C	128	183	249	324	303	378	452	542	633
	3/8"	50° C	107	152	207	269	253	314	374	447	618
P3TJA13A6AN	3/8"	20° C	268	318	373	425	412	458	502	548	595
	3/8"	35° C	169	239	328	425	400	495	592	707	833
	3/8"	40° C	163	232	317	412	387	481	572	685	809
	3/8"	45° C	147	210	287	374	350	435	522	625	732
	3/8"	50° C	123	175	239	310	293	362	432	515	714
P3TJA13A7AN	3/8"	20° C	357	425	498	567	550	612	668	732	793
	3/8"	35° C	225	319	438	567	534	661	788	944	1110
	3/8"	40° C	218	310	423	550	517	643	762	915	1078
	3/8"	45° C	196	281	383	499	468	581	695	834	975
	3/8"	50° C	164	234	319	414	391	483	574	688	952



Caution

Before continuing with the installation and commissioning of this equipment:

Ensure that it is correctly sized for the inlet pressure, taking into consideration the pressure drop caused by the valves, pipes and filters within the system. Allowance should be made for purge air loss. The dryer should be typically sized at 1 bar (14 psi/0.1MPa) below nominal compressor output pressure.

The purge air flow is factory set for 6 bar g (87 psi g) minimum system pressure. Should the minimum supply pressure be lower than this figure the purge air flow must be reset in order to maintain the specified dewpoint. Please contact your local Parker Hannifin office for assistance.

Ensure that it is correctly sized for inlet temperature to meet the dewpoint specified.

-40°C (-40°F)

Ensure that the electrical supply voltage and frequency meet the requirements detailed within this specification and on the equipment rating plate.

2.1.1 Dimensions

Refer to diagram A1 in Annex A for dimensions and weights

2.2 Unpacking the equipment

It is recommended that the equipment is moved into position before removing the packaging.



Remove the equipment from its packaging as shown in A2 in Annex A of this user guide and check that it has not been damaged in transit, if so please contact your shipping company

The following items have been included with your equipment:

Description	Qty
Dryer	1
Rewireable IEC socket**	1
Dryer Test Certificate	1

If any items are missing or damaged please contact your local Parker Hannifin office.

2.3 Overview of the equipment

Referring to diagram A3 in Annex A, the major parts of the dryer are as follows:

Ref	Identification	Ref	Identification
1	Display unit	5	inlet
2	Dryer Column	6	Optional Outlet
3	Control box	7	Optional Inlet
4	outlet	8	Purge adjusting screw

3 Installation & Commissioning



Only competent personnel trained, qualified, and approved by Parker Hannifin should perform installation, commissioning and service procedures.

Warning

3.1 Recommended system layout

The dryer should be installed with the correct pre-filtration and condensate management equipment to meet both the specification and local environmental requirements.

Referring to diagram A4 in Annex A, the following equipment is recommended to meet these requirements:

Ref	Description	Ref	Description
1	Compressor	5	1 micron Moduflex filter
2	Wet air receiver	6	0.01 micron Moduflex filter
3	Bypass line	7	Dryer
4	Isolation valves		



The use of a bypass line will allow wet untreated air into the system. It should therefore only be used in extreme circumstances.

Caution

3.2 Locating the equipment

Identify a suitable location for the equipment taking into consideration the minimum space requirements for maintenance and lifting equipment. When considering the final location of the equipment take into account the noise generated when in use.

The dryer can be installed free standing, secured to the floor via the fastener points provided in the base or secured to a wall using the optional brackets.

Installation Kits

Part No.	Description
P3TKA00MJ	Wall mounting kit (fixed)
P3TKA00MK	Wall mounting kit (45° tilt)

3.3 Mechanical Installation

Once the dryer has been located into position install the piping and filtration for connection to the inlet and outlet manifold. GP grade filtration can be used at the dryer inlet as shown in diagram A4 of Annex A.

Ensure that each filter condensate drain is suitably piped away and any effluent is disposed of in accordance with local regulations.

Two inlet and two outlet connections are available at the top of the dryer to enable connection from either left or right. Unused connections must be sealed with the threaded plugs provided.

It is important to ensure that all piping materials are suitable for the application, clean and debris free. The diameter of the pipes must be sufficient to allow unrestricted inlet air supply to the equipment and outlet gas / air supply to the application.

When routing the pipes ensure that they are adequately supported to prevent damage and leaks in the system.

All components used within the system must be rated to at least the maximum operating pressure of the equipment. It is recommended that the system be protected with suitably rated pressure relief valves.

A by-pass line may be installed into the system to provide a constant air supply during maintenance.

3.4 Electrical Installation



A fully qualified electrical engineer must undertake all electrical work in accordance with local regulations.

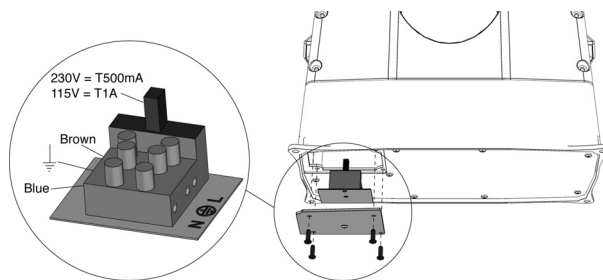
The equipment should be connected to the electrical supply through a switch or circuit breaker. This device should be clearly and indelibly marked as the disconnecting device for the equipment and located in close proximity to the equipment and be easily accessible to the operator.

Over current protection must be fitted as part of the building installation. This protection should be selected in accordance with local and national code regulations and based upon the technical data supplied for this equipment.

Connect power to the dryer (via the mains cable gland *) at the fused terminal block.

The fuse terminal block is located on the small base plate under the enclosure. Four screws retain the base plate as shown.

*For CSA / NPT dryers, the cable gland is replaced by a conduit entry aperture.

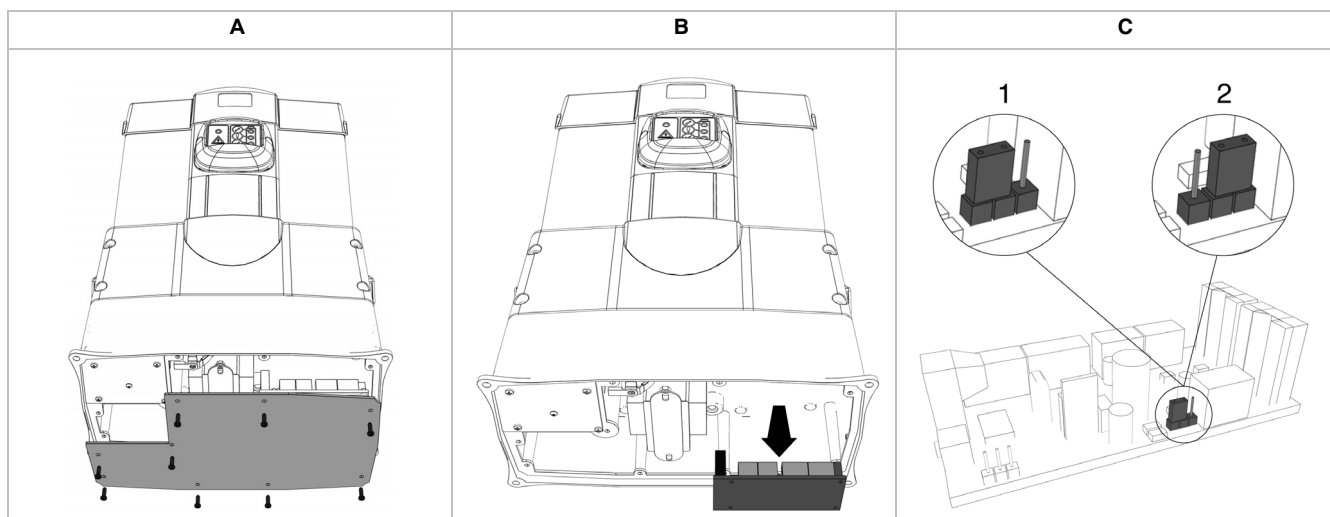


3.5 Running the Dryer with a Minimum Pressure Above 7 bar

If the dryer is to be run with a minimum pressure above 7 bar g (102 psig) an alteration to the timer board is required.

Re-positioning the jumper extends the re-pressurisation stage of the cycle to ensure that the unit is fully re-pressurised prior to column change over at pressures over 7 barg.

To carry out the alteration, ensure that the electrical supply is isolated and place the dryer on it's back to gain access to the control base. Remove the large plate to access the timer board (A). Remove the timer board from the control base (B). Move electric jumper from position 1 to position 2 (C).

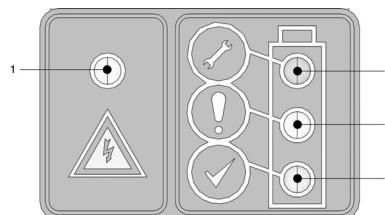


4 Operating the equipment

4.1 Overview of Controls

The fascia of the dryer consists of indicators only as follows:

- 1 Power "ON" Indicator
- 2 Service Required Indicator
- 3 Cartridge Wear Indicator
- 4 Correct operation



4.2 Starting the equipment



Start-up should be undertaken by an Parker Hannifin trained, qualified and approved service engineer.

1. Ensure that the isolation valves on the inlet and the outlet of the dryer are closed.
2. Connect the electrical supply to the dryer and verify that the Power On indicator is illuminated.
3. Slowly open the isolation valve on the inlet of the dryer. Verify that there are no leaks.
4. Test the condensate drains of the filters and verify that they are discharging correctly into a suitable collection vessel.
5. Check that the system pressure relief valve is closed.
6. When the dryer is pressurised to full system pressure, slowly open the outlet isolation valve.
7. Verify that the column pressure gauges are cycling between zero and full system pressure every three minutes.

If a bypass line has been fitted, close the bypass valve.

No further intervention is required for normal operation.

4.3 Stopping the equipment

1. Close the isolation valve on the outlet followed by the isolation valve on the inlet.
If a by-pass line has been fitted, simultaneously open the by-pass valve.
2. De-pressurise the dryer by venting through the drain ball valve on the outlet dust filter.
Note: The drain valve should be opened gradually.
3. Disconnect the electrical supply to the dryer.













5 Servicing

The recommended service procedures identified in table 5.2 and all other repair and calibration work should be undertaken by a **Parker Hannifin** trained, qualified and approved engineer.

5.1 Cleaning

Clean the equipment with a damp cloth only and avoid excessive moisture around any electrical sockets. If required you may use a mild detergent, however do not use abrasives or solvents as they may damage the warning labels on the equipment.

5.2 Service Intervals

Description Of Maintenance Required		Typical Recommended Maintenance Interval					
Component	Operation	Daily	3-month	6-month	12-month	24-month	30-month
Dryer	Check POWER ON indicator is illuminated.						
Dryer	Check STATUS / FAULT indicators located on the controller.						
Dryer	Check for air leaks.						
Dryer	Check the condition of electrical supply cables and conduits.						
Dryer	Check for cyclic operation.						
Filtration	Check Drain operation						
Dryer	Replace active exhaust silencers Recommended Service A						
Filtration	Replace the inlet and outlet air filters and service drains Recommended Service B						
Dryer	Service valves Recommended Service D						
Dryer	Replace the Desiccant. Recommended Service E						

Key:  - Check  - Replace

Note: When cartridges require changing an audible alarm will sound every 6 seconds.

Temporary resetting of the alarm to prevent nuisance noise is possible after alarm has sounded for the first time. This is done by depressing once the reset button located inside the control enclosure, accessed by removing the black insert on the side. The alarm will be muted for a 24 hour interval until the dryer has been serviced and the reset sequence completed.

5.3 Service Kits

Service Kit	Description	Kit No.	Quantity
A	Kit: Silencer element	608310003	1
B	Refer to Filter user guide	171020800	-
D	Kit: Exhaust Valve 50Hz	608310001	1
	Kit: Exhaust Valve 60Hz	608310002	1
E	Service kit	P3TKA00JA1	1
	Service kit	P3TKA00JA2	1
	Service kit	P3TKA00JA3	1
	Service kit	P3TKA00JA4	1
	Service kit	P3TKA00JA5	
	Service kit	P3TKA00JA6	
	Service kit	P3TKA00JA7	

For servicing diagram please refer to A5 in Annex A.

5.4 Service Record

Date of Commissioning	
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Service (Hours)	Date	Serviced By		Comments / Observations
		Print	Sign	
4,000				
8,000				
16,000				
20,000				
24,000				
28,000				
32,000				
36,000				
40,000				

6 Troubleshooting

In the unlikely event that a problem occurs on the equipment, this troubleshooting guide can be used to identify the probable cause and remedy.



Warning

Troubleshooting should only be attempted by competent personnel. All major repair, and calibration work should be undertaken by a Parker Hannifin trained, qualified and approved engineer.

Problem	Possible Cause	Action Required
Poor dewpoint identified by water in the downstream piping and equipment.	Entrained water.	Check pre-filtration drains.
	Excessive air flow demand.	Check actual flow against rated flow of dryer Check for recent additions to the air system
	Inlet pressure too low.	Check against technical specification
	Excessive inlet air temperature	Check against technical specification
	Insufficient purge air flow	Factory set for 6 bar g (87 psig) system pressure. Parker Hannifin trained personnel to adjust.
	Exhaust silencers blocked	Change by Parker Hannifin trained personnel
	Contaminated desiccant	Eliminate source of contamination. Desiccant change by Parker Hannifin trained personnel
Electrical fault	Hardware fault	Contact Parker Hannifin customer services
High differential pressure	Excessive outlet flow	Check and regulate air demand
Failure to purge	Purge valve blocked or shut. Exhaust silencers blocked.	Parker Hannifin trained personnel to adjust . Change by Parker Hannifin trained personnel
Outlet air flow stops	Electrical fault. Blown fuse in plug.	Parker Hannifin trained personnel to adjust . Change by Parker Hannifin trained personnel
Constant depressurisation	Damaged valve.	Change by Parker Hannifin trained personnel