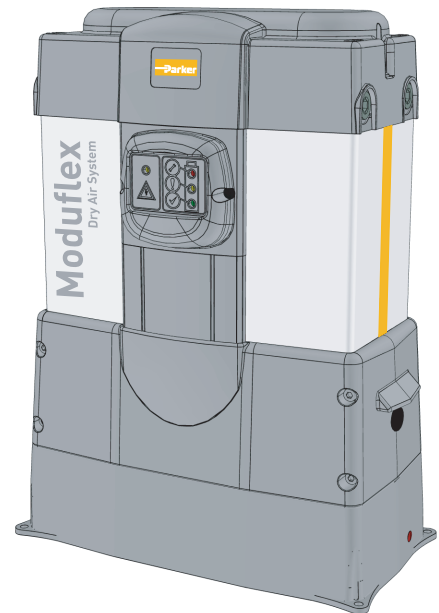




Moduflex
Dry Air System

Desiccant Air Dryer P3TJA13A1AN - P3TJA13A7AN



(EN) USER GUIDE (Original Language)

(NL) GEBRUIKERSHANDLEIDING
(SV) BRUKSANVISNING
(ES) GUÍA DEL USUARIO
(SK) UŽIVATELSKÁ PRÍRUČKA
(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) KASUTUSJUHEND
(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. |  | Warning | Highlights actions or procedures which, if not performed correctly, could lead to electric shock. |
|  | Risk of electric shock. |  | | Wear hearing protection. |
|  | Warning |  | | When disposing of old parts always follow local waste disposal regulations. |
|  | Caution |  | | Conformité Européenne |
|  | Highlights actions or procedures which, if not performed correctly, may lead to personal injury or death. | | | |
|  | Highlights actions or procedures which, if not performed correctly, may lead to damage to this product. | | | |

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 orinasa 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 | Product Installed | ISO Classification |
|-------------------------|----------------------------------|------------------------------|
| -40°C Pressure Dewpoint | Moduflex 1 micron Filter + Dryer | ISO8573.1 : 2001 Class 3.2.2 |
| -70°C Pressure Dewpoint | Moduflex 1 micron Filter + Dryer | ISO8573.1 : 2001 Class 3.1.2 |

ISO8573.1 1991 Edition

| Dewpoint Selected | Product Installed | ISO Classification |
|-------------------------|----------------------------------|------------------------------|
| -40°C Pressure Dewpoint | Moduflex 1 micron Filter + Dryer | ISO8573.1 : 1991 Class 2.2.2 |
| -70°C Pressure Dewpoint | Moduflex 1 micron Filter + Dryer | 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



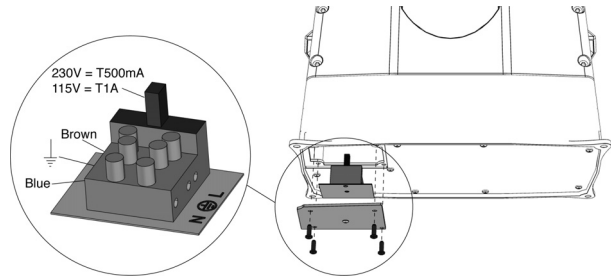
A fully qualified electrical engineer must undertake all electrical work in accordance with local regulations.

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.

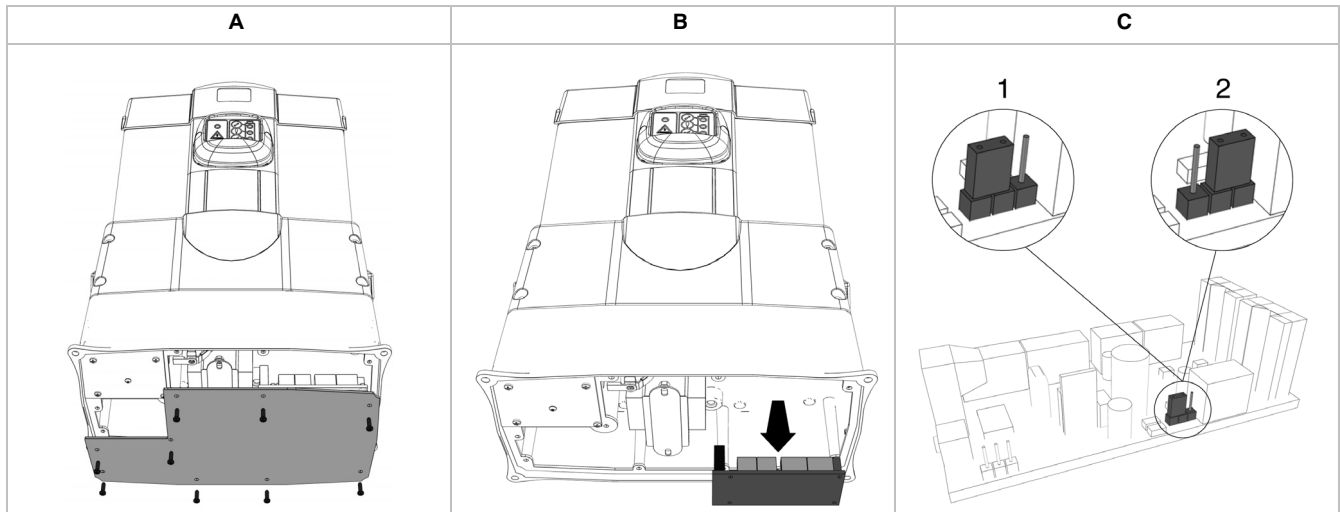


3.5 Running the Dryer with a Minimum Pressure Above 7 bar

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).

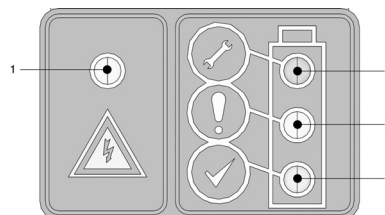


4 Operating the equipment

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



Warning 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.

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

7. Verify that the column pressure gauges are cycling between zero and full system pressure every three minutes.

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 | |
|-----------------------|--|

| 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.



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 |