



The ultimate filtration & drying technology

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Pro Dry

Heatless Desiccant Dryers



Installation, Operating and Maintenance Manual

All models (PD004 – PD365)



The product to which this manual refers must not be supplied, installed, used, operated or serviced until the contents of the manual has been fully read and understood by all relevant personnel.

Please complete the following information at the time of installation

found on the rating label on the upper right hand side of dryer

Model Number

Serial Number

Regulated Inlet Pressure

Filtration present with Dryer

Outlet Flow of Dryer

Compressor Outlet Flow

Supply Voltage

When contacting Walker Filtration regarding this product, please have the above stated information at hand to speed up your query.

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Safety

The following safety guidelines must be strictly observed.

- Leave this manual at the place of installation of the product.
- It is essential that only Walker Filtration or it's appointed agents carry out maintenance and servicing work.

Users, maintenance and servicing personnel must be familiar with:

- Accident prevention regulations.
 - Safety information (general and specific to the unit).
 - Safety devices of the unit.
 - Measures to be taken in case of an emergency.
 - Allow only suitably trained persons to be involved with installation, start-up, operation, servicing and maintenance of the product.
 - It is the responsibility of the installer to ensure that the pipe work to and from the dryer is suitable, in accordance with applicable legislation and subject to inspection and testing prior to being put into service. All piping must be adequately supported.
 - Before carrying out any maintenance or servicing work the unit must be taken out of operation. Users and others will be exposed to risk if work is carried out whilst the unit is running. This means electrical disconnection plus isolation from the compressed air supply and full depressurisation.
 - Only trained and competent persons familiar with the electrical requirements of the unit as laid out in this manual and electrical safety rules and regulations should be allowed to carry out work on the electrical components and power supply to the unit.
 - When carrying out any work on the unit, use only correctly sized appropriate tools in good condition.
 - Only use original spare parts and accessories from the manufacturer. There is no guarantee that non-original parts have been designed and manufactured to meet the safety and operational requirements of the unit. Walker Filtration assume no liability for any equipment malfunction resulting from the use of non-approved parts.
- If carrying out installation work above head height, use suitable and safe working platforms or other means of working access.
 - Do not make any constructional changes to the product. Any changes or modifications may only be carried out by the manufacturer, Walker Filtration.
 - Any faults or defects that could affect safety must be put right fully before using the unit.
 - Used items and materials must be disposed of in the correct manner, complying with local laws and regulations, in particular the desiccant cartridge.

Figure 1.1: Definition of symbols



Manual Handling

As with all areas of the workplace, Health and Safety is of great importance and must be given due care and attention. While working with this equipment, manual handling regulations must be considered and adhered to.

Full advice, support and guidance should be detailed in your Health and Safety Policy and Manual Handling guide, please take the time to familiarise yourself with these documents.

The Manual Handling Operations Regulations apply to a wide range of manual handling activities, including lifting, lowering, pushing, pulling or carrying.

We ask every person handling this product to take the responsibility for their own Health and Safety and the Health and Safety of others around them. If you feel there is a significant risk, you must take steps to either remove the risk altogether, or reduce the risk prior to carry out the activity. If you need further support or guidance with this, please consult your line manager or the HR Department.

There are safe systems of work and correct procedures in relation to manual handling, please consult these documents available within the workplace.

We ask everyone handling this product to:

- Follow appropriate systems of work laid down for their safety.
- Make proper use of any equipment provided for their safety.
- Inform the company if they identify hazardous handling activities.
- Take care to ensure that their activities do not put others at risk.

If in doubt, please seek further advice and ensure you always follow the correct procedures and guidance.

 For more information please see our Health and Safety manual attached.

When used in the UK, a 3 amp fuse should be fitted as per the wiring diagram (figure 4.4).

General Description

This manual is valid for the following dryer models

PD004	PD006	PD008
PD010	PD015	PD025
PD035	PD045	PD055
PD065	PD085	PD105
PD135	PD175	PD215
PD275	PD365	

Function of the Dryer

Pro Dry is designed to provide a smooth, controlled and uninterrupted delivery of dry compressed air. Wet air passes through a pre-filter and travels down to the bottom valve assembly. The air is then fed through the bottom of the desiccant bed and moves through the high performance desiccant until it becomes dry. On exit from the desiccant cartridge, the air is passed through the outlet valve assembly.

During this process, the dryer control system cycles the process air between the two desiccant towers. While one chamber is on stream removing water vapour, the other is being carefully depressurised in preparation for regeneration. The desiccant bed is regenerated by expanding a small amount of dry process air, or purge air, through the saturated desiccant.

Purge air passes to atmosphere through the silencer, which is fitted to an exhaust valve. The chamber is then repressurised, with the control system assuring each chamber is at full operational pressure prior to changeover.

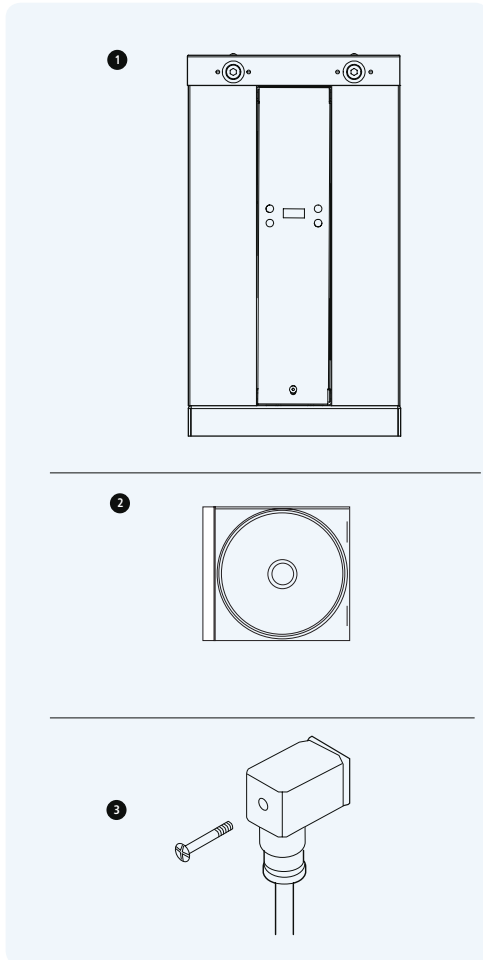
This ensures a reliable and efficient operation. The air stream is switched and the cycle repeats on a continuous basis.

Package Contents

The dryer is delivered in protective packaging. Take care when transporting, loading and unloading the unit. The package contains the following items (refer to figure 2.1):

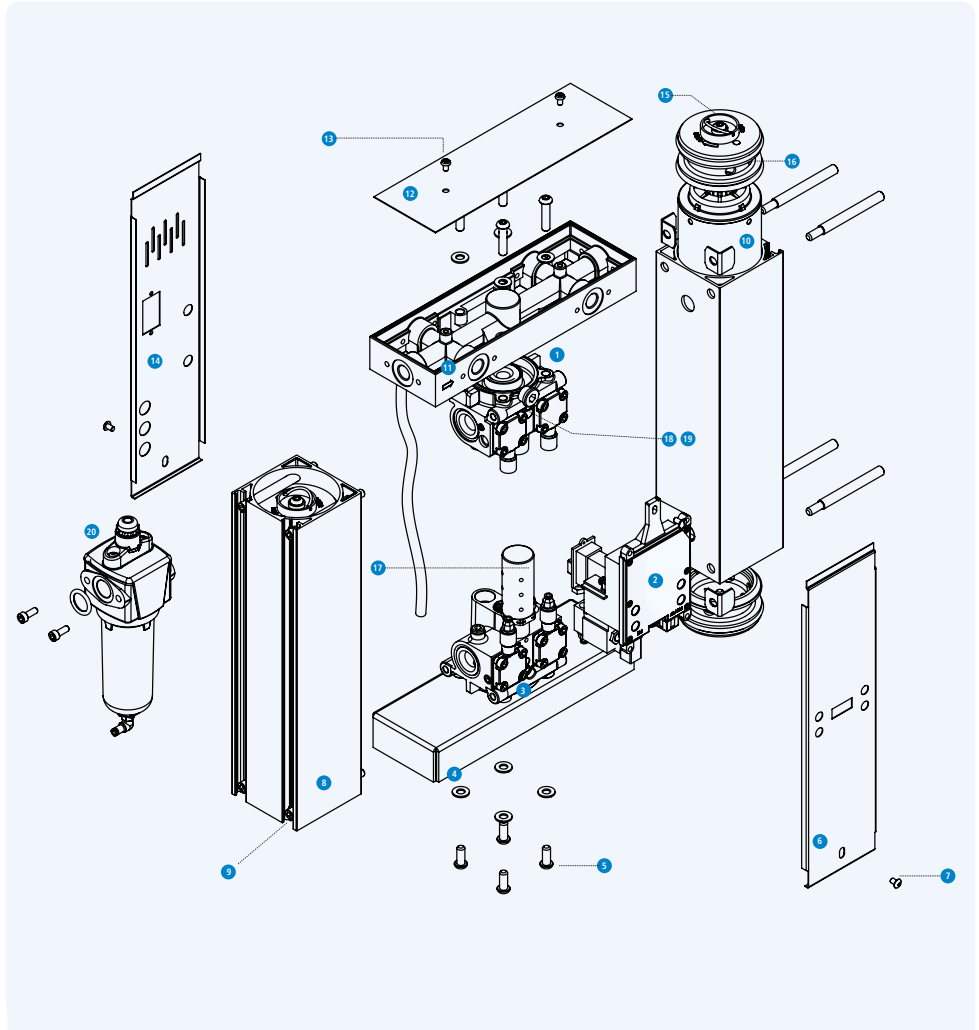
1. Dryer unit (6 SCFM shown)
2. Instruction manual (including certificate of conformity)
3. Power connector

Figure 2.1: Package contents



Section 2: General Description

Figure 2.2: Models PD004 – PD035



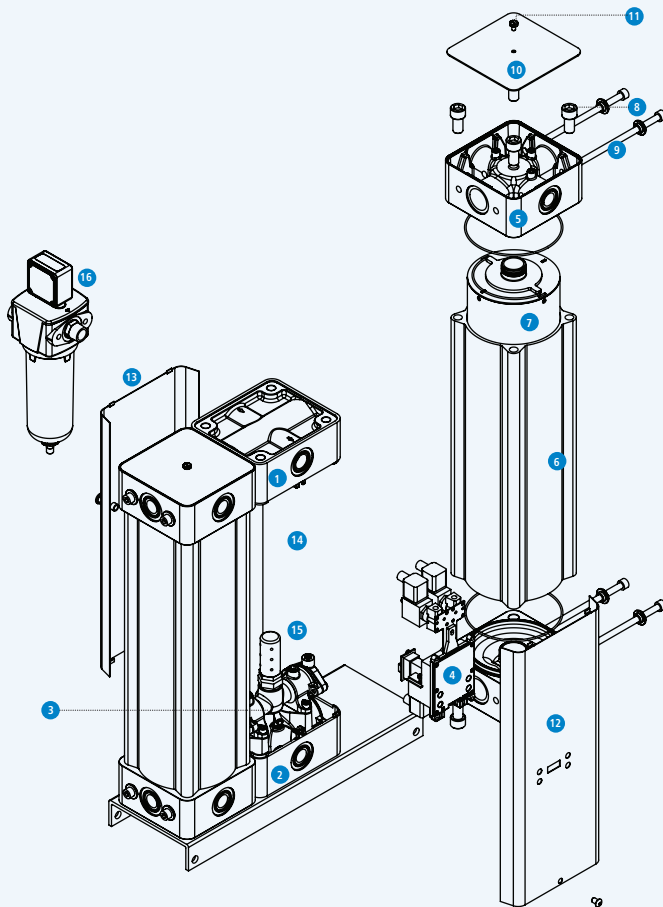
1. Top valve assembly
2. Control unit
3. Bottom valve assembly
4. Dryer base
5. Bottom valve fixing bolt
6. Front panel
7. Front panel fixing screw

8. Pressure housing
9. Pressure housing retaining bolt
10. Desiccant cartridge comes with dust filter
11. Multiport manifold
12. Top cover
13. Top cover fixing screw
14. Rear panel

15. Banjo fixing bolt
16. Pressure seal
17. Exhaust silencer
18. Purge plug
19. Purge plug fixing screw
20. Prefilter

Section 2: General Description

Figure 2.3: Models PD045 – PD365




* Models PD215 – PD365 are duplex

- | | | |
|---------------------------|--|----------------------------|
| 1. Inlet valve assembly | 7. Desiccant cartridge c/w dust filter | 13. Back panel |
| 2. Bottom valve assembly | 8. Pressure housing retaining bolt | 14. Air transfer down-pipe |
| 3. Exhaust valve assembly | 9. Quadra-port manifold retaining bolt | 15. Silencer |
| 4. Control/valve unit | 10. Quadra-port manifold top cover | 16. Prefilter |
| 5. Quadra-port manifold | 11. QPM fixing screw | |
| 6. Pressure housing | 12. Front panel | |

Mechanical Installation

Connecting the pre-filter to the dryer

- PD004-PD035, Utilise O Ring and bolt supplied to assemble filter as per figure 3.1.
- PD045-PD365, Attach pre filter utilising nipple supplied.
- Fit 4mm (5/32") black tubing to filter and drain valve inlet.
- Pipe away condensate with 4mm (5/32") tubing from drain outlet. Ensure condensate is drained into an oil/water separator.
- Fit any further filtration or ancillary equipment.
- Drain kits supplied with dryer and comprise of the following: Swivel elbow adapter and 4mm tubing.

 All tubing should be secured up to the point of drain to prevent whipping during discharge.

It is recommended that a bypass line including filter is installed, as per figure 3.13

Figure 3.1: Connecting pre-filter

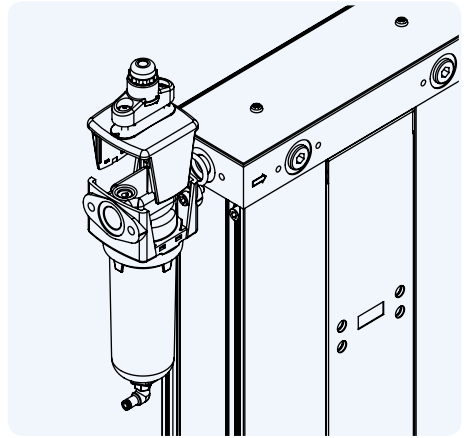
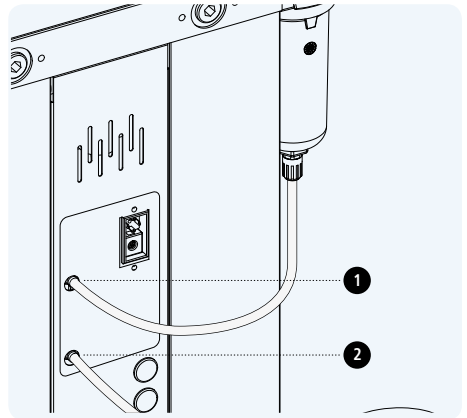


Figure 3.2: Connecting filter drain



1. Inlet
2. Outlet

Orientation

The Pro Dry range of dryers is designed to operate in both vertical and horizontal orientation.

Figure 3.3: Horizontal orientation

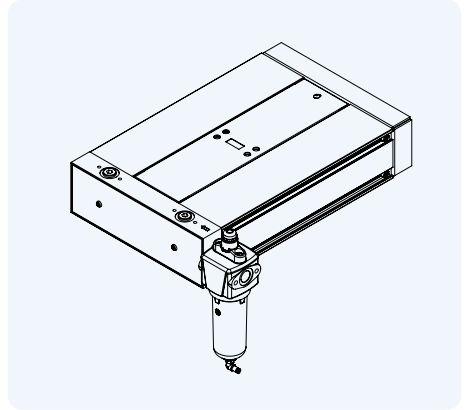
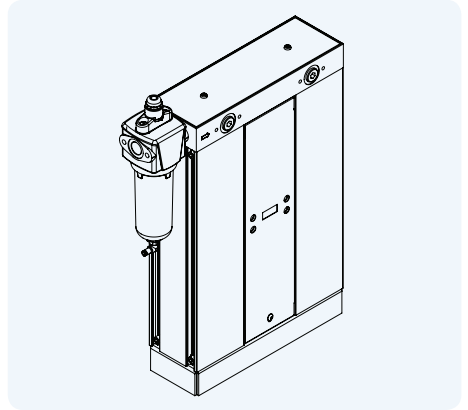


Figure 3.4: Vertical orientation




Reconfiguration of the inlet / outlet ports

PD004 – PD035 models only

Pro Dry has three ports on the inlet (A, B and C) and three ports on the outlet (D, E and F). Any of the three can be used for inlet (A, B or C) and outlet (D, E or F). Make sure the remaining two are blanked off with provided pressure plugs.

Dryer can be reconfigured to interchange position of inlet and outlet ports (Figure 3.6).

 Directional arrows are etched into the inlet manifold.

Any / all of the three outlet ports can be used on occasion. Please ensure combined flow at outlet should not exceed specification. Please adhere to regional regulations.

It is strongly advised to connect a non-return valve to each outlet used.

Only use one inlet port at any one time

Ensure original seals are in place.

Check dryer is leak-free prior to operation.

Tools required

- 4mm hex key
- 6mm hex key

Figure 3.5: Inlet/outlet ports

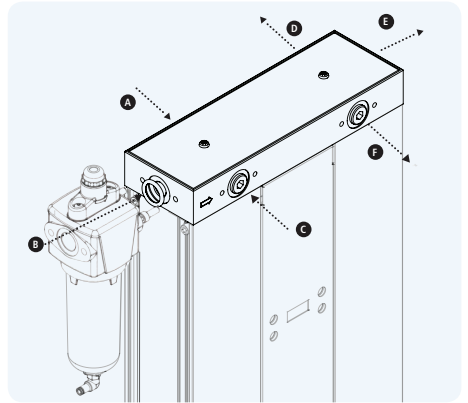
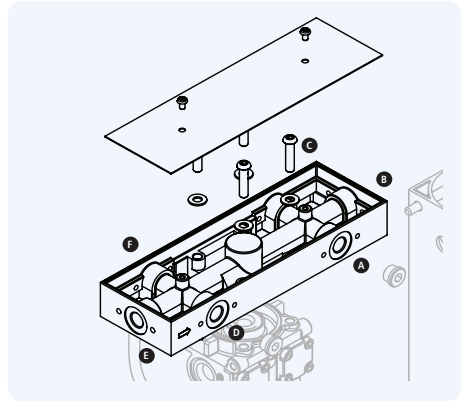


Figure 3.6: Reconfiguration of inlet/outlet ports



Section 3: **Mechanical Installation**

Figure 3.7: Level ground

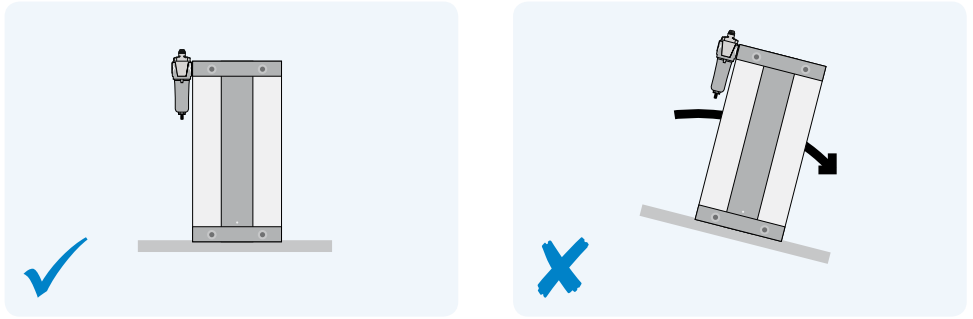
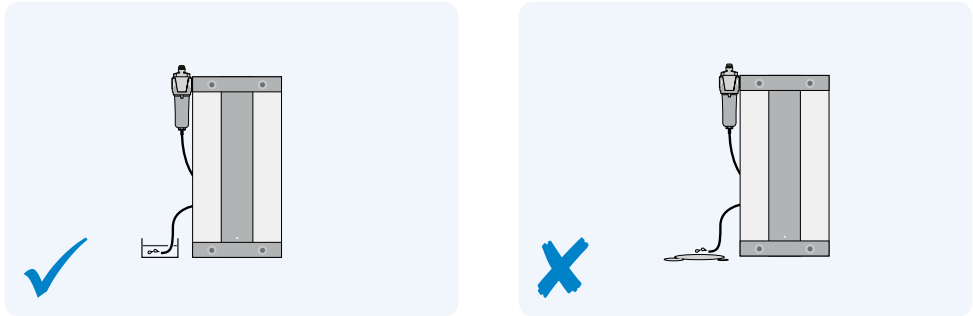


Figure 3.8: Drainage (all tubing should be secured up to the point of drain to prevent whipping during discharge)



Section 3: Mechanical Installation

Figure 3.9: Location

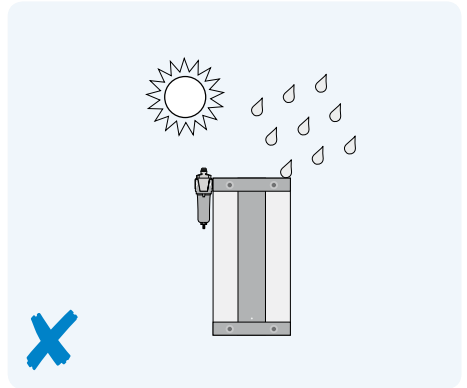
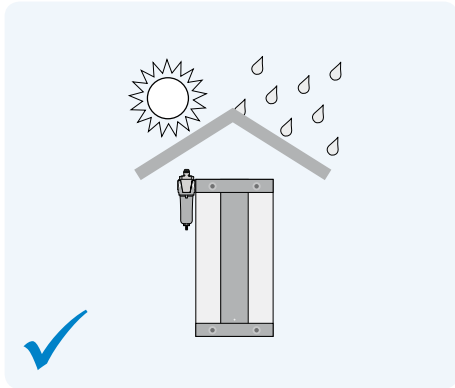


Figure 3.10: Hard piped installation

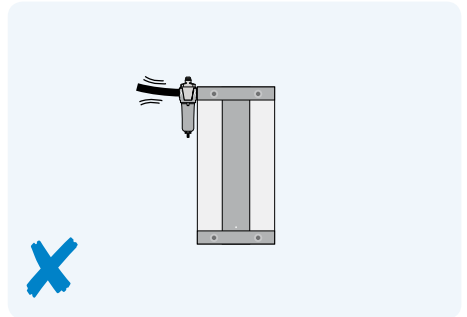
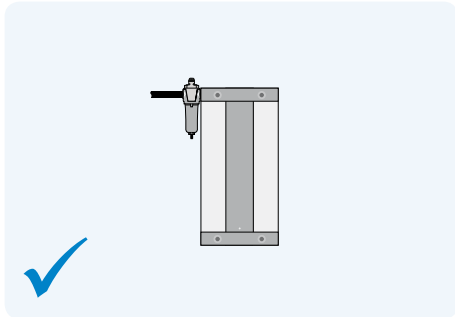
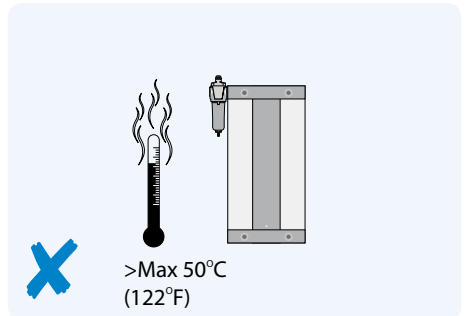
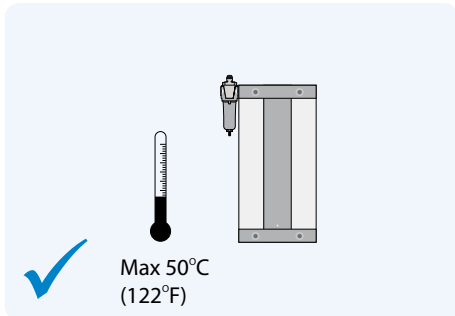


Figure 3.11: Exposure to heat



Section 3: Mechanical Installation

Figure 3.12: Direction of flow

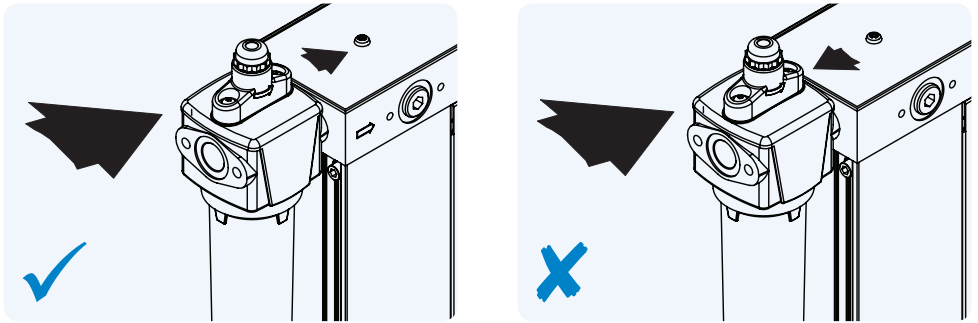
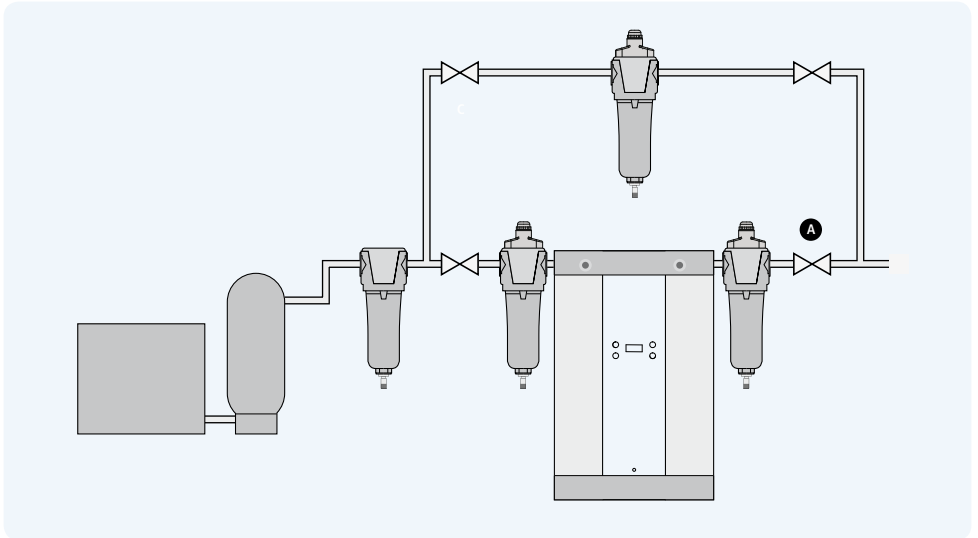


Figure 3.13: Typical installation



To prevent back flow into the dryer a non-return valve should be placed in-line, downstream of the dryer. This is essential when more than one dryer is used in a single application.

Electrical Installation

Connection

The dryer is designed to operate on either AC or DC supply voltage.

Electrical wiring must comply with local regulations. Voltage requirements must be confirmed to be within the specification on the dryers rating plate.

Ensure only one power source is connected at any one time and is connected to the correct socket as shown in figure 4.3 and 4.4.

The dryer controller is double insulated therefore no earth is required on the power connector. External fuse to be connected to plug.

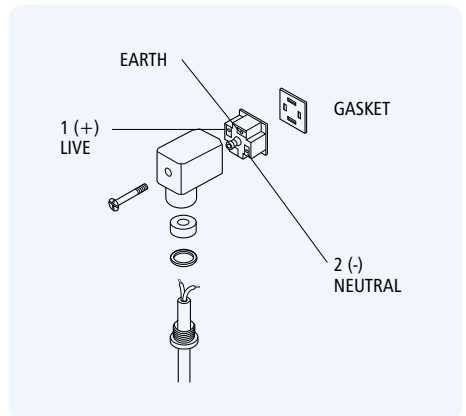
The cable selection must suit local installation regulations and be appropriate to power consumption as shown in the Power Supply table.

Power Supply	
Supply	Amp
12 VDC	0.80
24 VDC	0.40
100 VAC	0.16
115 VAC	0.14
230 VAC	0.07
240 VAC	0.07

How to wire a power connector

Figure 4.1 illustrates how to wire power connector. Please refer to wiring diagram, figure 4.2, page 17, for further information.

Figure 4.1: Din connector



Section 4: Electrical Installation

Different voltage setting

Figure 4.2: Wiring diagram

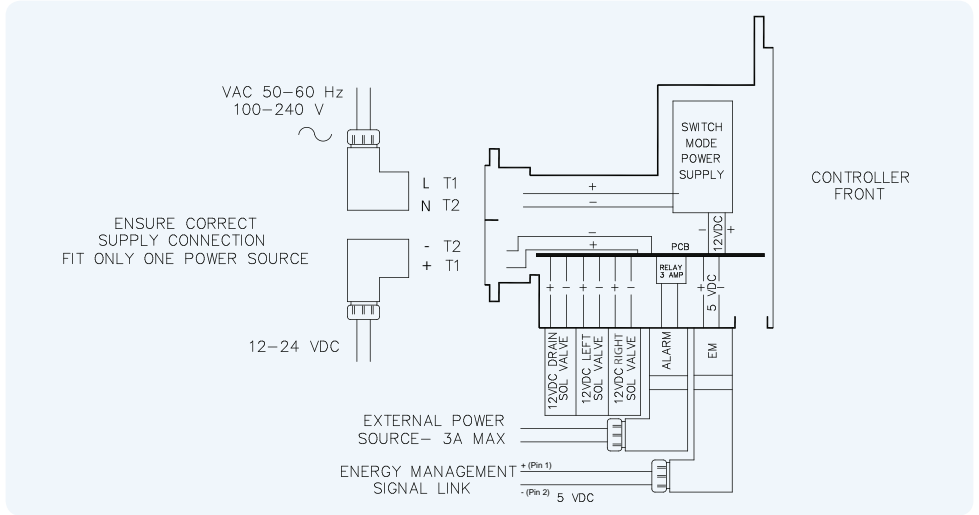


Figure 4.3: 100 to 240 VAC

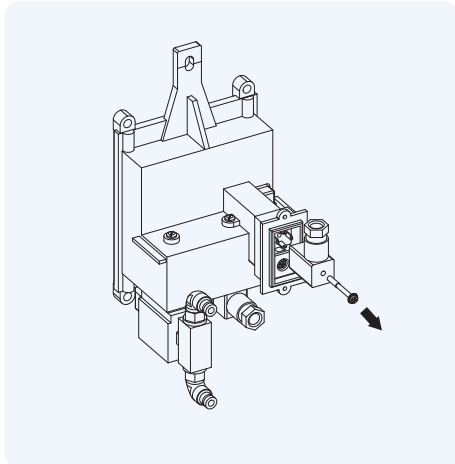
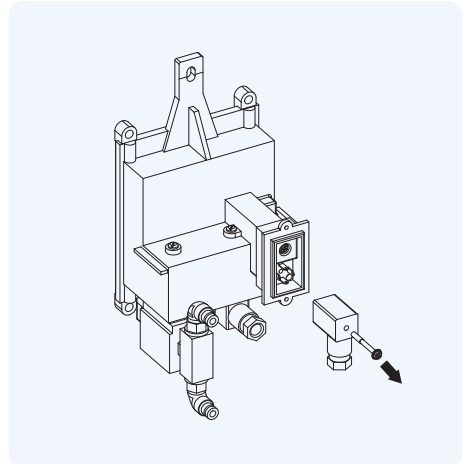



Figure 4.4: 12 to 24 VDC



Controller Description

Controller Specification	
Ambient temperature	1.5°C to 50°C (35°F to 122°F)
Max. relative humidity	80% up to 31°C, decreasing linearly to 50% RH at 50°C
Input voltage range	100–240VAC, 50–60Hz, 12–24VDC Mains supply voltage not to exceed $\pm 10\%$ of nominal
Protection class	IP65
Transient over voltage	IEC 60664 Class II
Pollution degree	2, IEC 60664

For energy and alarm installation management please see section 8

 **A circuit breaker or switch must be installed near the dryer. This should be easy to reach and shall be certified according to EN60947-1 and EN60947-3. The switch or circuit breaker shall be marked as the disconnecting device for the dryer and needs to be marked with on and off positions.**

Output connections do not provide isolation from the mains connectors and interconnecting wiring must meet EN61010-1:2001 requirements for reinforced insulation.

Operation

Background / Function of the dryer

The dryer operation is designed to give smooth, uninterrupted delivery of compressed air to the designated specification.

During the cycle of operation, the first pressure housing is fully pressurised and airflow is directed upwards through the desiccant cartridge, removing moisture from the air during its passage, to the minimum specified dewpoint.

During the drying cycle, a small bleed of process air is directed to the opposite pressure housing. This process air flows down through the desiccant cartridge and into the atmosphere by means of an exhaust silencer, thereby affecting regeneration of the desiccant.

After 120 seconds of operation, the cartridge under regeneration is sealed by closing of the exhaust valve and the pressure housing is brought up to full system pressure by the purge air.

After an extended time (See start-up procedure for individual sizes) the pressure in the first housing is released into the atmosphere by means of the corresponding exhaust valve and the desiccant cartridge then operates in regeneration mode. The main air flow and drying function is then transferred to the desiccant cartridge that was previously under regeneration.

The cycle of operation continues in this pattern with the cartridges switching alternately between drying and regenerating.

Start-up procedure PD004 - PD035

- See figure 5.1 and 5.2.
 - Close valves A, B, C and D.
 - Switch on compressor.
 - Open valve A slowly.
 - Check there are no leaks from the dryer.
 - Switch on electric power. All four display panel LED's will flash simultaneously green four times then simultaneously red four times to acknowledge application of power and readiness to function. Observe display panel for one complete cycle. Note: cycle described is factory setting.
- a. Power LED illuminates green and tower LED X illuminates

green.

- b. After 120 seconds, tower LED X switches off and drain LED Z illuminates green.
- c. After a further 50 seconds drain LED Z switches off and tower LED Y illuminates green.
- d. After a further 120 seconds, tower LED Y switches off.
- e. After a further 50 seconds, tower LED X illuminates green - this is point 'a' in the cycle described above.

The above cycle (a – e) repeats.

On initial commissioning only run the dryer for a minimum of 6 hours to ensure dewpoint is adequate. Thereafter, continue directly to next point.

Open valve B slowly.

Start-up procedure PD045 - PD365

- See figure 5.1 and 5.2.
 - Close valves A, B, C and D.
 - Switch on compressor.
 - Open valve A slowly.
 - Check there are no leaks from the dryer.
 - Switch on electric power. All four display panel LED's will flash simultaneously green four times then simultaneously red four times to acknowledge application of power and readiness to function. Observe display panel for one complete cycle. Note: cycle described is factory setting.
- a. Power LED illuminates green and tower LED X illuminates green.
- b. After 120 seconds, tower LED X switches off and drain LED Z illuminates green.
- c. After a further 20 seconds drain LED Z switches off and tower LED Y illuminates green.
- d. After a further 120 seconds, tower LED Y switches off.
- e. After a further 20 seconds, tower LED X illuminates green - this is point 'a' in the cycle described above.

The above cycle (a – e) repeats.

On initial commissioning only run the dryer for a minimum of 6 hours to ensure dewpoint is adequate. Thereafter, continue directly to next point.

Open valve B slowly.

Section 5: Operation

Shut-down Procedure

- Close valve B.
- Close valve A.
- Leave dryer running for 15 minutes to fully de-pressurise.
- Switch off all electrical power to the dryer.



Under no circumstances must compressed air be allowed to flow through the dryer following switch off of electrical power. This will result in terminal failure of the desiccant cartridges and regeneration will not be possible.

Figure 5.1: Typical installation

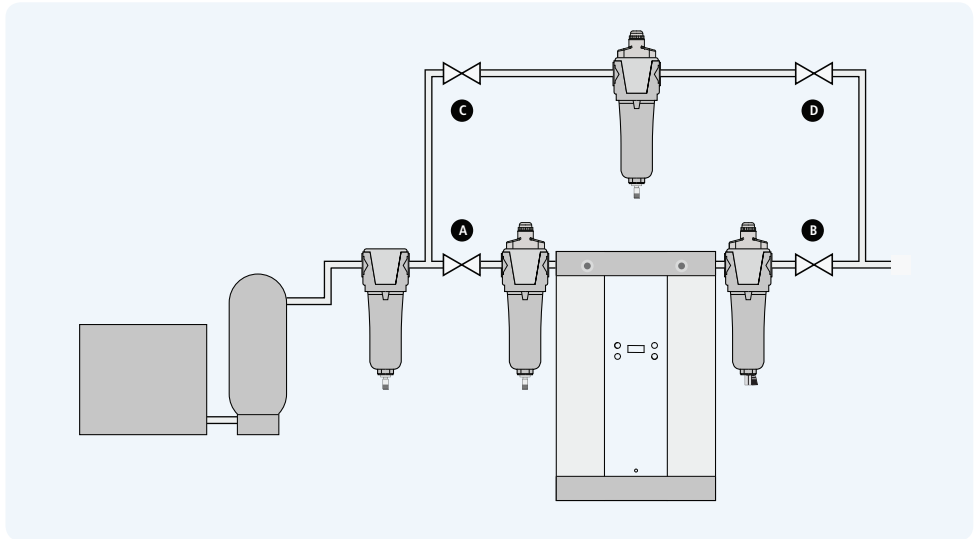
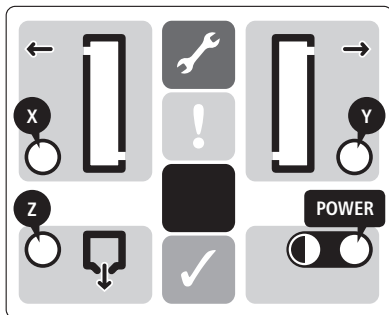


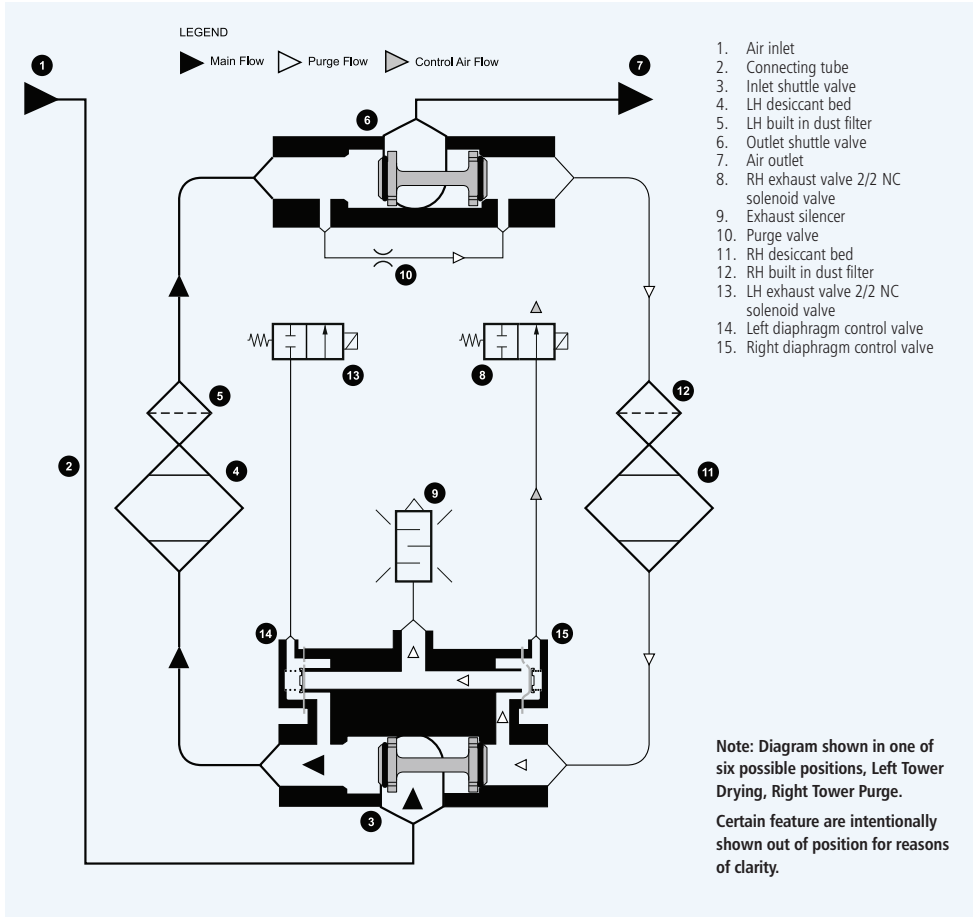
Figure 5.2: Controller description



- X Left tower regenerating (Right tower drying)
- Y Right tower regenerating (Left tower drying)
- Z Drain solenoid
- Power Power connected to controller

Section 5: Operation

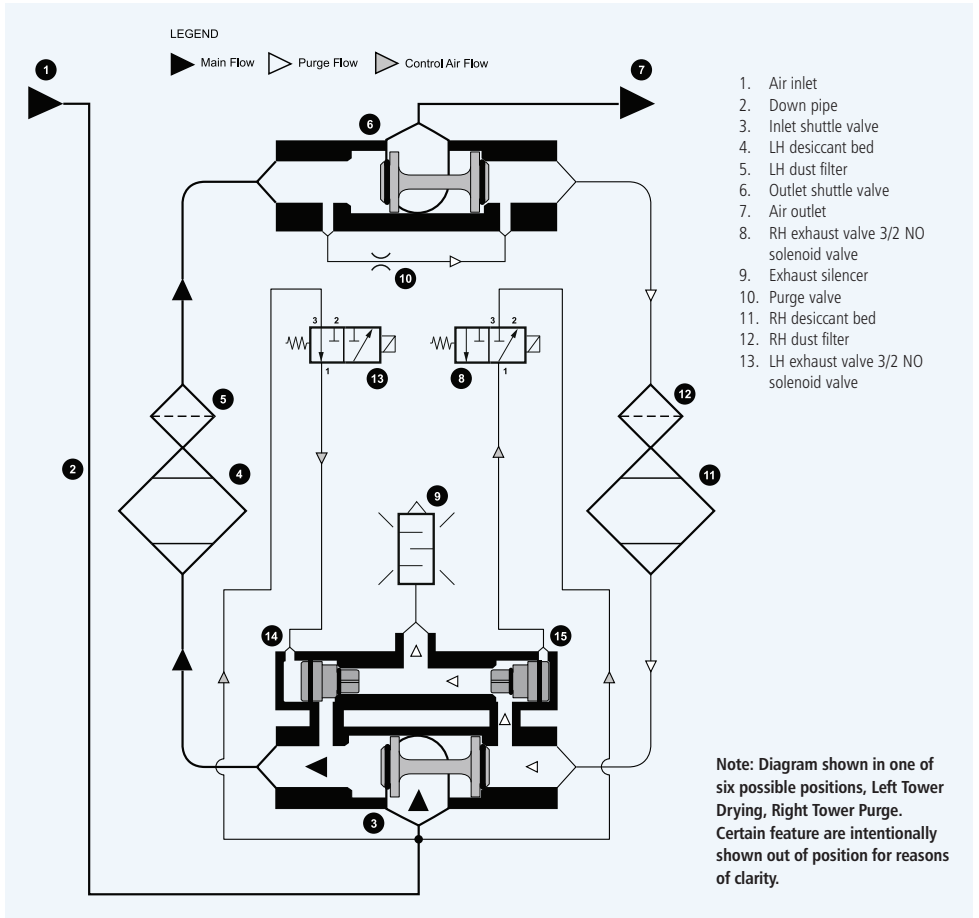
Figure 5.3: Process & Instrumentation diagram (PD004 – PD035)



Stage	Time (Seconds)	SV Valve Status	Dryer Operation
1.	0	Left valve closed, right valve opens	Left tower at pressure (drying), right tower depressurises and Then purges (<i>this stage is shown on pd1 pneumatic schematic</i>)
2.	120	Both valves closed	Right tower repressurising
3.	170	Left valve opens, right valve closed	Left tower depressurises and then purges, right tower at pressure (drying)
4.	290	Both valves closed	Left tower repressurising
	340	Back to stage 1	-

Section 5: Operation

Figure 5.4: Process & Instrumentation diagram (PD045 – PD365)



Stage	Time (Seconds)	SV Valve Status	Dryer Operation
1.	0	Left valve closed, right valve opens	Left tower at pressure (drying), right tower depressurizes and Then purges (this stage is shown on pd2 pneumatic schematic)
2.	120	Both valves closed	Right tower repressurizing
3.	140	Left valve opens, right valve closed	Left tower depressurizes and then purges, right tower at Pressure (drying)
4.	260	Both valves closed	Left tower repressurizing
	280	Back to stage 1	-

Maintenance

Servicing



Important information.



Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.



Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.

Please refer to Section 11-Spares Information.

Service Intervals

Pre Filter Element	Annually (6000 hrs)
Cartridges	Every Two Years (12000 Hrs)
Valves	Every Four Years (24000 Hrs)

Front Panel Removal

Models PD004 – PD035 only

- See figure 6.1.
- Using a hex key remove screw from the front panel.
- Open from bottom, allowing top to drop out releasing the panel entirely.

Tools required



- 4mm hex key

Figure 6.1: Models PD004 – PD035

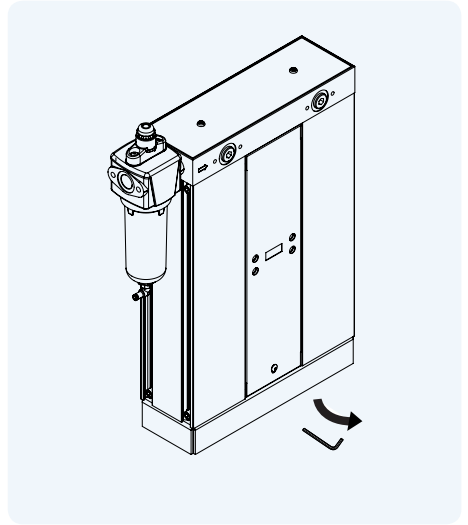
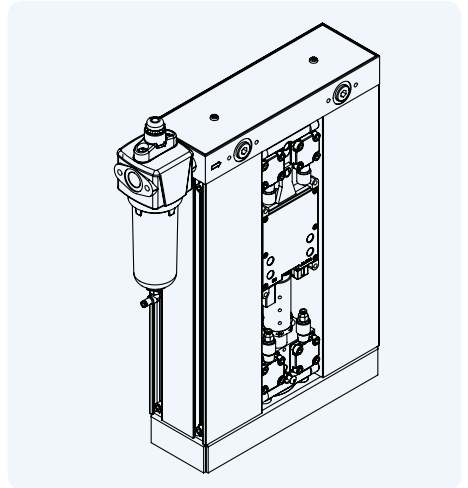


Figure 6.2: Models PD004 – PD035 with front panel removed



Section 6: Maintenance

Front Panel Removal

Models PD045 – PD365 only

- See figure 6.3.
- Using a hex key remove screw from the front panel.
- Open from bottom, allowing top to drop out releasing the panel entirely.

Tools required



- 5mm hex key.



Important information.



Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.



Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.

Figure 6.3: Models PD045 – PD365

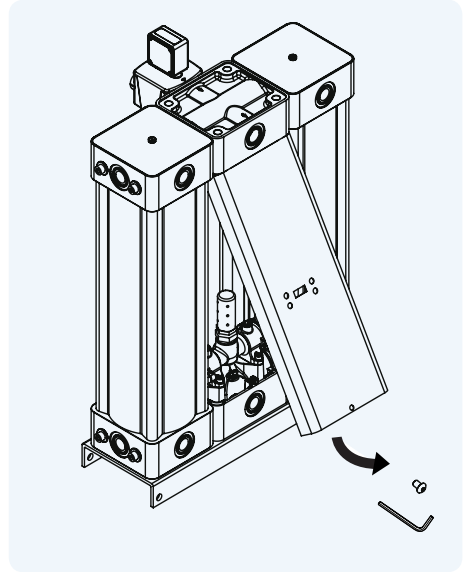
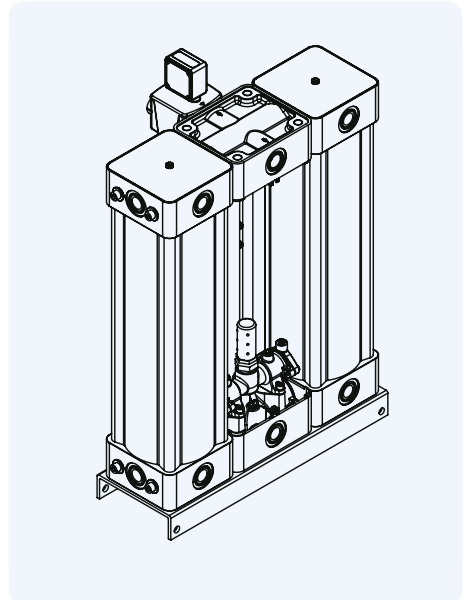


Figure 6.4: Models PD045 – PD365 with front panel removed



Desiccant Changeout

Models PD004 – PD035 only

1. See figure 6.5.
2. Remove prefiltration.
3. Unscrew four bolts $\frac{3}{4}$ turn on the opposite tower to aid desiccant changeout process.
4. Unscrew the four pressure housing retaining bolts and slide out the pressure housing.
5. Remove banjo fixing bolt using hex key.
6. Extract end cap and banjo assembly from pressure housing.
7. Using banjo fixing bolt, retract the cartridge from pressure housing.
8. Replace with new cartridge supplied as part of the cartridge service kit.
9. Ensure O-ring seals are in place when installing cartridge and assembly in pressure housing.
10. Follow above steps in reverse to finish installing new cartridge into the dryer.
11. Repeat steps 1 – 10 for the second pressure housing.
12. Ensure the dryer is leak-free before operating pressure is applied to the dryer.
13. Follow start up procedure as stated on page 19 of this manual.
14. Continue to page 27 to reset the controller.

Tools required



- 5mm hex key.
- 6mm hex key.

Important information

 Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.


 Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.

Figure 6.5: Models PD004 – PD035 with pre-filter removed

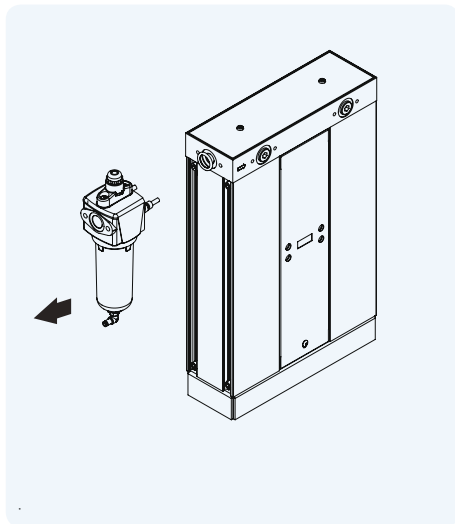
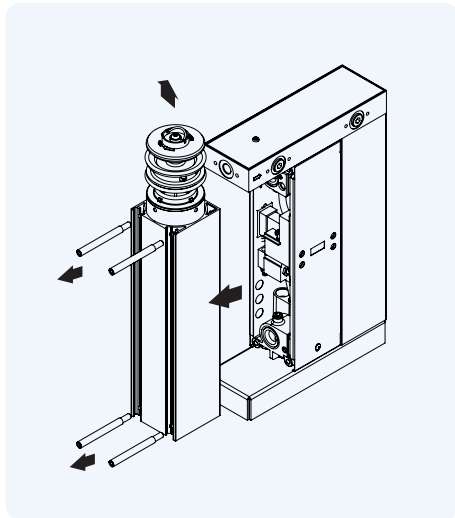


Figure 6.6: Models PD004 – PD035 with tower assembly removed



Desiccant Changeout

Models PD045 – PD365 only

See figure 6.7.

1. Unscrew QPM cover fixing screw, remove QPM cover.
2. Unscrew QPM retaining bolts.
3. Unscrew pressure housing retaining bolts.
4. Remove QPM.
5. Pull out desiccant cartridge using the handle.

For dryer models PD105 - PD365 each tower assembly includes 2 desiccant cartridges.

6. Replace installed desiccant cartridges with new cartridges supplied as part of the cartridge service kit.
7. Ensure o-ring seals are in place when installing desiccant cartridges.
8. Follow steps 1 to 4 in reverse order to finish installing in tower assembly.
9. Repeat steps 1-8 for remaining tower assemblies.
10. Ensure dryer is leak free at lower pressure prior to applying operating pressure to dryer.
11. Follow start-up procedure as stated on page 19 of this manual.
12. Continue to page 27 to reset the controller.

Tools required



- 5mm hex key
- 6mm hex key
- 8mm hex key
- 16mm hex key
- Adjustable spanner
- Flathead screwdriver

Important information

 Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.


 Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.

Figure 6.7: Models PD045 – PD365 - QPM removal stage 1

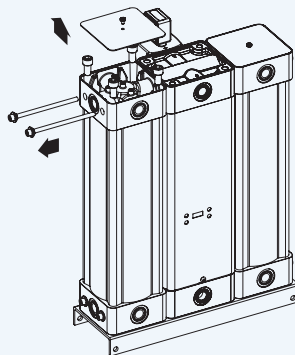
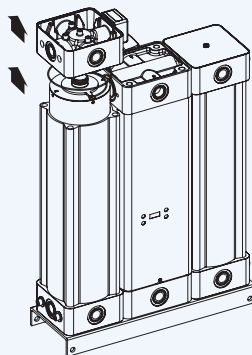



Figure 6.8: Models PD045 – PD365 - QPM removal stage 2



Resetting the Controller

- After following the start-up procedure it is necessary to reset the controller. This is done by using the re-set disc (supplied with cartridge service kit) then:
- Hold the disc against the blue pad on the front display of the dryer panel for 5 seconds.
- During the five second period the power indicator will flash green. When the reset has been successful indicator X will flash green once to confirm that it has been completed successfully.

 Sweep the reset disc on the blue pad if the LEDs do not flash as stated.

Please note: If Energy Management is activated, there will be a 6 hour delay after reset before Energy Management will be operational again.

Figure 6.9: Controller reset

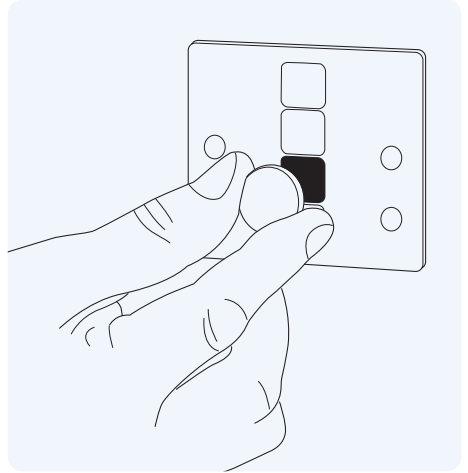
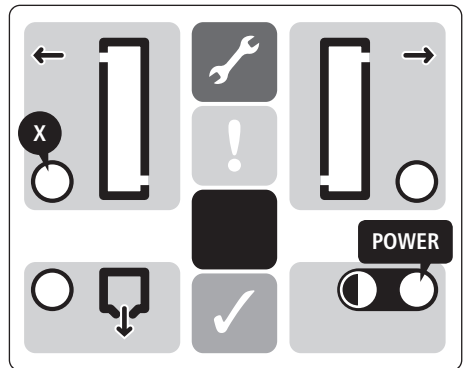



Figure 6.10: Controller description



Purge Plug Removal

Models PD004 – PD035 only

- Remove dryer front panel.
- Remove purge plug securing screw from the upper valve block.
- Remove purge plug.
- Replace with appropriate purge plug according to inlet pressure. Refer to Spares section, page 56
- Grease purge plug O-ring to ensure ease of fit

 **Appropriate purge plug selection is very important for function of the dryer. Failure to comply with this may affect your warranty.**

Tools required



- Pozidrive screwdriver

Important information

 Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.


 Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.

Figure 6.11: PD004 - PD035 - Purge plug changeout stage 1

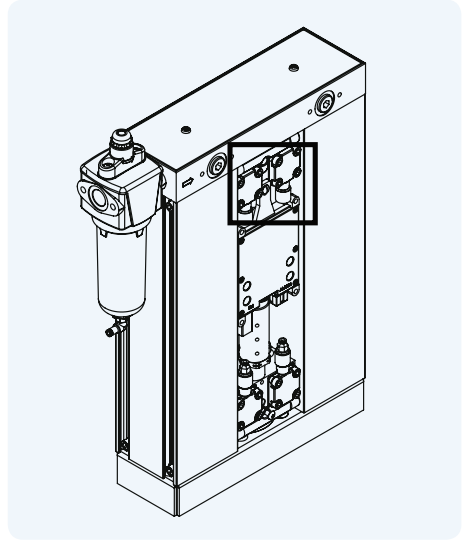
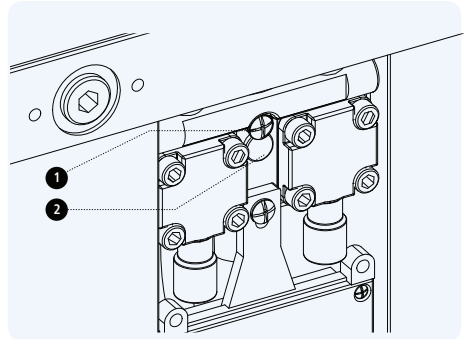


Figure 6.12: PD004 - PD035 - Purge plug changeout stage 2



1. Securing screw
2. Purge plug

Section 6: Maintenance

Purge Plug Removal

Models PD045 – PD365 only

- Remove dryer front panel.
- Remove fixing screws from one of the bonnets holding the purge orifice.
- Remove purge plug from remaining bonnet.

Tools required



- 6mm hex key

Important information




-  Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.
-  Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Figure 6.13: PD045 - PD365 Purge plug changeout stage 1

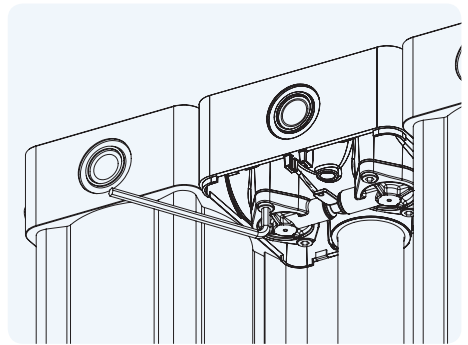
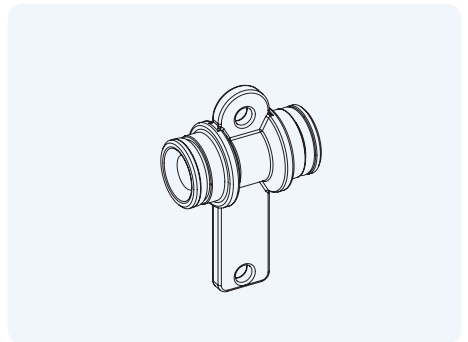


Figure 6.14: PD045 - PD365 Purge plug change out stage 2



Exhaust Silencer Changeout

Models PD004 – PD035 only

- *Remove dryer front panel.*
- *Unscrew silencer from bottom valve block and remove.*
- *Replace with new silencer.*

Tools required



- *Not required*

Important information




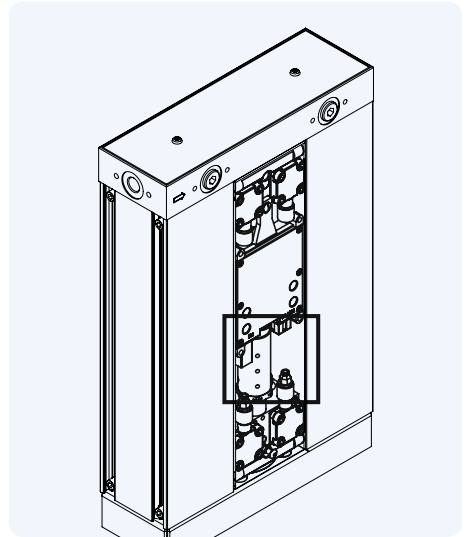
-  Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.
-  Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Figure 6.15: PD004 - PD35 Silencer changout stage 1



Exhaust Silencer Changeout

Models PD045 – PD085 only

- *Remove dryer front panel.*
- *Unscrew silencer from bottom valve block and remove.*
- *Replace with new silencer.*

Important information




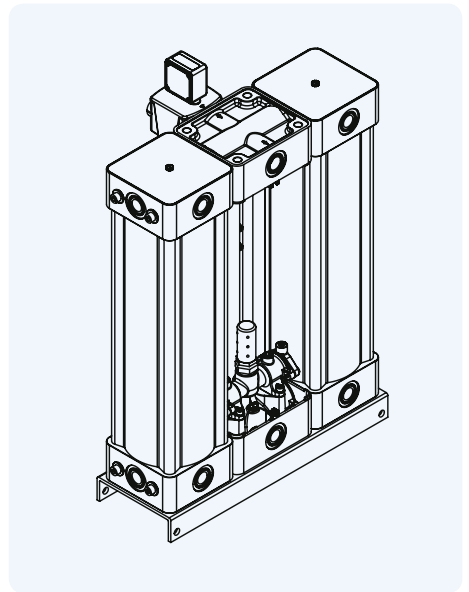
-  Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.
-  Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Figure 6.16: PD045 - PD085 Silencer changout stage 1

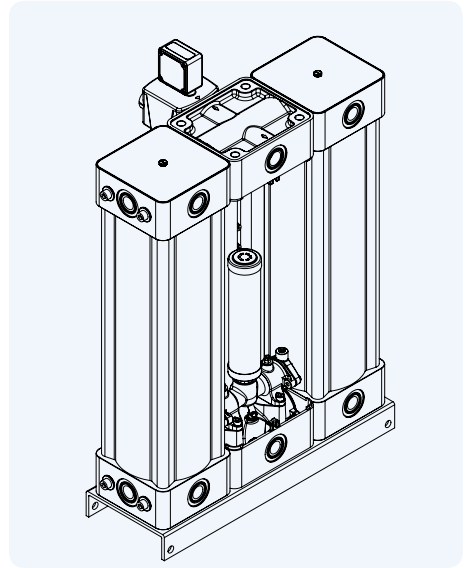


Exhaust Silencer Changeout




Models PD105 – PD175

- *Remove dryer front panel.*
- *Unscrew silencer from bottom valve block and remove.*
- *Replace with new silencer.*

Figure 6.17: PD105 - PD175 Silencer changout



Important information

-  Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.
-  Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Exhaust Silencer Changeout

Models PD215 – PD365

- Remove dryer front panel.
- Unscrew silencer from bottom valve block and remove.
- Replace with new silencer.

Tools required



- *Spanner*

Important information




-  Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.
-  The manufacturer will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Figure 6.18:PD215 - PD365 Silencer changout stage 1

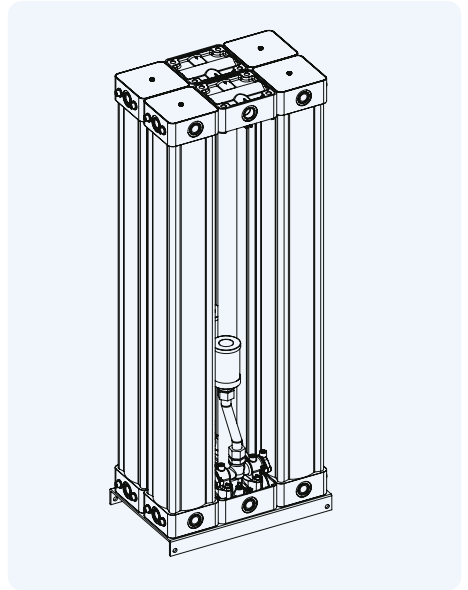
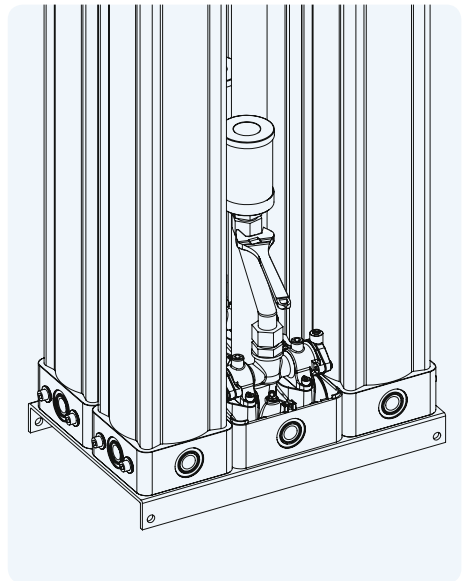


Figure 6.19:PD215 - PD365 Silencer changout stage 2



Diaphragm Replacement

Models PD004 – PD035 only

- Remove front panel.
- Remove bonnets by means of four fixing screws.
- Separate bonnet from valve block.
- Disconnect tubing from fitting on bonnet.
- Remove diaphragm assembly.
- Insert new Diaphragms and springs, ensuring Diaphragm holes are clear.

Tools required



- 4mm hex key

Important information

Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.

Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.

A Instruction Manual is included in the changeout kit to assist Diaphragm Replacement

Figure 6.20: PD004 - PD035 Diaphragm changeout stage 1

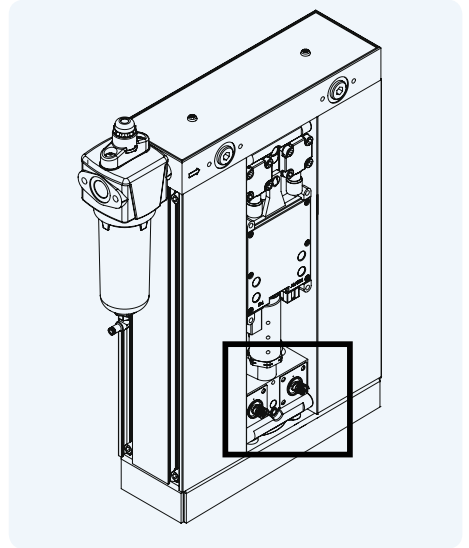
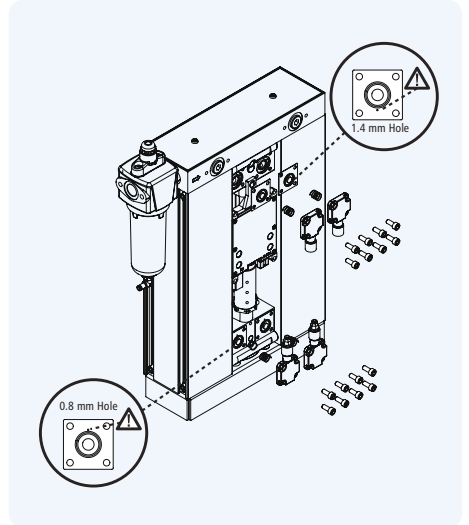


Figure 6.21: PD004 - PD035 Diaphragm changeout stage 2



1. Diaphragm
2. Spring

Replacing Shuttle Valves

Models PD004-PD035

- Remove tower
- Pull out shuttle seat
- Remove shuttle
- Replace shuttle
- Reinsert shuttle seat
- Re-secure tower

Tools required



- 5mm hex key

Figure 6.22: PD004-PD035 Filter and tower removal

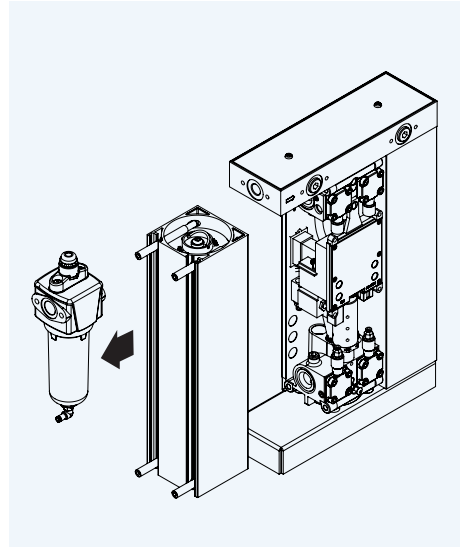
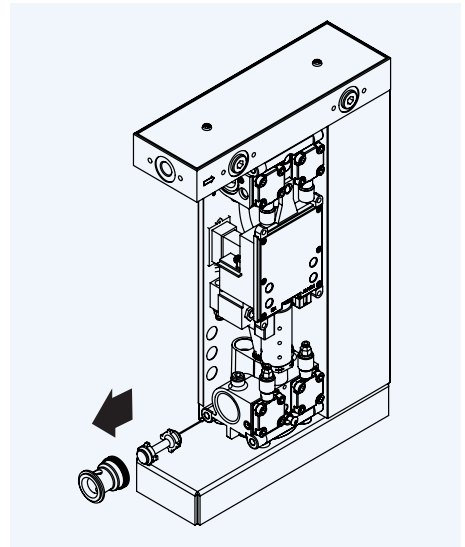


Figure 6.23: PD004-PD035 Shuttle seat and shuttle removal



Replacing Shuttle Valves

Models PD045-PD365

- Remove tower
- Pull out shuttle seat
- Remove shuttle
- Replace shuttle
- Reinsert shuttle seat
- Re-secure tower

Tools required



- 8mm hex key

Important information




-  Ensure shutdown and start-up procedures are followed prior to carrying out any maintenance work on the dryer.
-  Walker Filtration will not accept responsibility for physical injury, damage or delays caused by failure to observe the instructions in this manual and manuals provided with your equipment.
- 

Figure 6.27: PD045-PD365 Tower removal

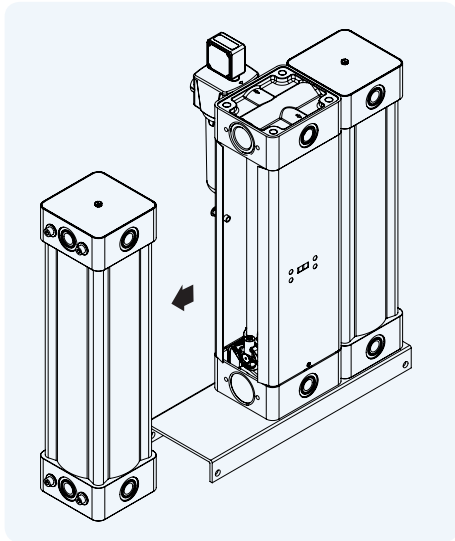


Figure 6.24: PD045-PD365 Shuttle seat and shuttle removal (Top block)

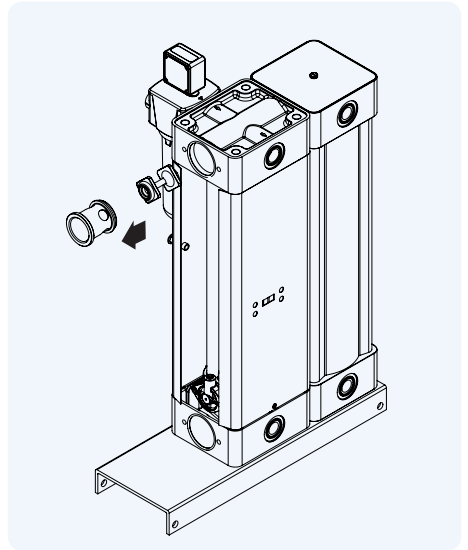
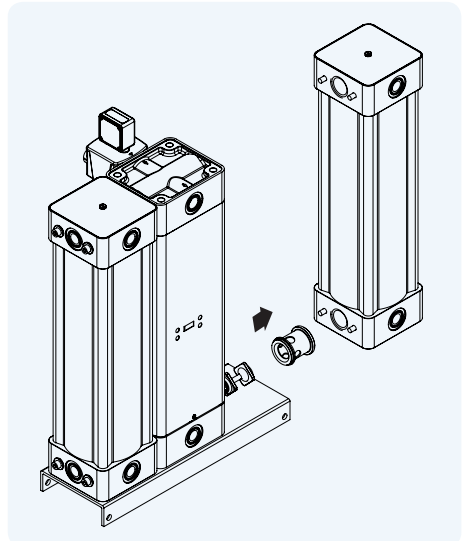


Figure 6.25: PD045-PD365 Shuttle seat and shuttle removal (Bottom block)



Energy Management

Overview

Regenerative dryers must expel a portion of the process air in order to free themselves of accumulated moisture. During periods of low air demand, however, this air loss is not necessary and is therefore undesirable. In many cases, the compressor runs almost continuously in order to keep up with the dryer's purge loss.

All Walker Filtration dryers are equipped with an Energy Management feature that allows the purge to be shut off during periods of low or no demand. The dryer controller is fitted with a set of field accessible contacts, that can be employed to shut off the solenoid valves which control the purge function of the dryer, therefore eliminating any air loss from the dryer.

Developing a Purge Control Strategy

In order to utilise this function, the operator must provide a switching system that provides acceptable logic to indicate to the dryer that there is little or no air demand. On the following pages, some examples of commonly used switching systems are provided in ascending order of complexity.

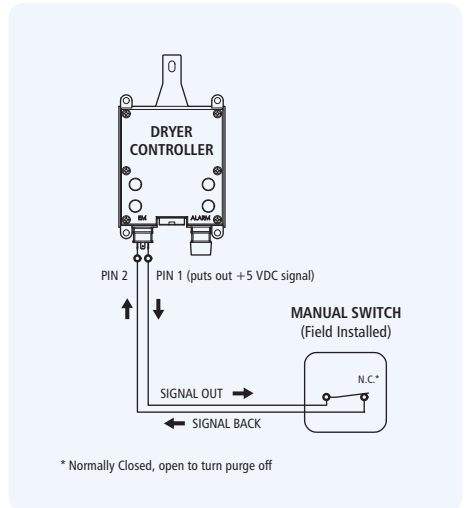
Using a Manual Switch for Purge Control

The simplest of arrangements, a manual switch may be employed to shut the purge off when the air downstream of the dryer is not being used. Commonly used on point of use systems. For example, if the dryer is only used to supply air of an appropriate dryness to a specific machine or application, the dryer will only be required when the machine is in use and may be shut off either manually or possibly via extra contacts provided in the machine's on/off switch.

It is extremely important to understand that the purge may only be shut off during periods of low or no demand. This feature, if used otherwise, can result in permanent damage to the desiccant beds resulting in loss of drying capacity and possibly mechanical failure. The cartridges must not be allowed to become fully saturated at any time.

The following schematic (Fig 7.1) offers an overview of the devices mentioned as they might be connected for use in controlling a dryer's purge function. Please note that specific details differ between device manufacturers, so in all cases the manufacturer's specifications should be adhered to.

Fig 7. 1 Manual switch purge control



Using a Standard Pressure Switch for Purge Control

Many compressors come equipped with pressure switches with extra contacts that can be utilised to switch off the dryer’s purge when the compressor is in an unloaded state. Unfortunately, many of these switches have significantly large dead bands (difference between the load (on) and unload (off) settings that in most cases cannot be altered). The amount of air that can pass downstream, through the dryer, while the compressor is unloaded must be taken into consideration as it can be significant, especially if there is a large dead band and/or large wet receiver.

Often, a stand-alone pressure switch is a better option as it allows the user to adjust it independently from the compressor’s pressure switch. When selecting a stand-alone pressure switch, the smaller the dead band the better.

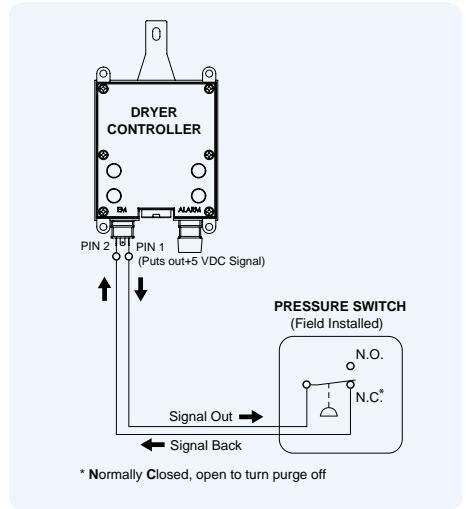
When using a stand-alone pressure switch, the dryer is wired into the normally closed contacts on the pressure switch. When the switch is actuated (at 100 psig in the example), the purge shuts off until the pressure switch deactuates (at 95 psig in example). The point at which the switch deactuates, may be adjusted to suit the system.

If it is determined that the dew point drops to an unacceptable level, the deactuation point must be increased. Please note that with most standard pressure switches, the dead band is fixed such that the activation and deactuation points move together.

It is extremely important to understand that the purge may only be shut off during periods of low or no demand. This feature, if used otherwise, can result in permanent damage to the desiccant beds resulting in loss of drying capacity and possibly mechanical failure. The cartridges must not be allowed to become fully saturated at any time.

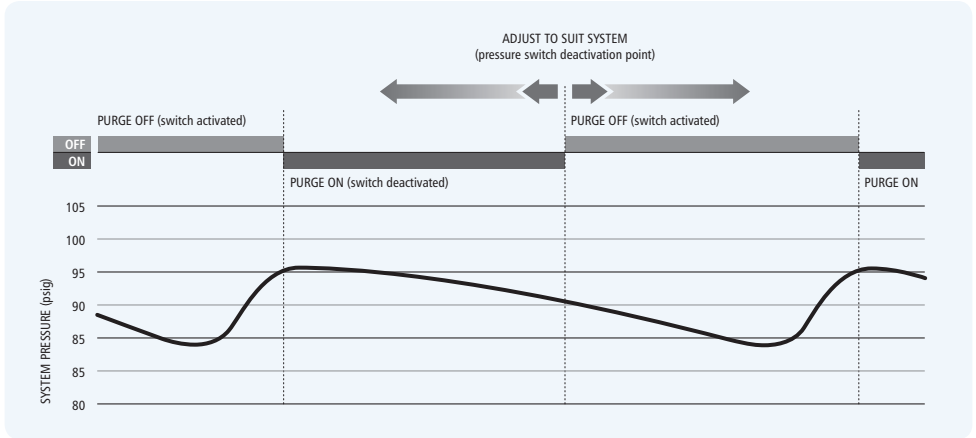
The following schematic offers an overview of the devices mentioned as they might be connected for use in controlling a dryer’s purge function. Please note that specific details differ between device manufacturers, so in all cases the manufacturer’s specifications should be adhered to.

Figure 7.2: Using a standard pressure switch for Purge Control.



Section 7: Energy Management

Fig 7.3 Pressure switch setting



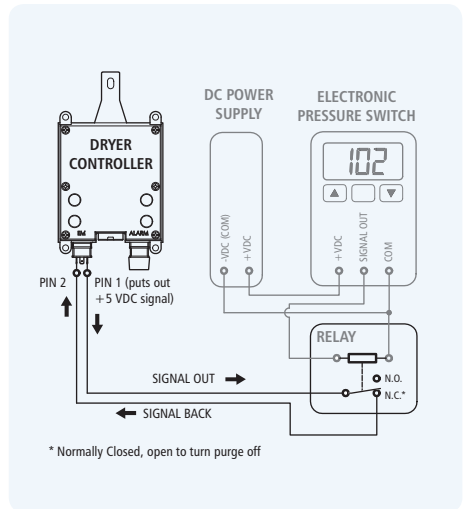
Using an Electronic Pressure Switch for Purge Control


The best choice if using a pressure switch is to select an electronic programmable type pressure switch which is effectively a pressure transmitter and process controller built into one device. While significantly more costly than a standard pressure switch, an electronic programmable pressure switch can be setup to provide a much more customized operation. Typically, the dead band can be reduced or eliminated so that an immediate reaction to changes, in system pressure indicating air flow, can be obtained.

It is extremely important to understand that the purge may only be shut off during periods of low or no demand. This feature, if used otherwise, can result in permanent damage to the desiccant beds resulting in loss of drying capacity and possibly mechanical failure. The cartridges must not be allowed to become fully saturated at any time.

The following schematic offers an overview of the devices mentioned as they might be connected for use in controlling a dryer's purge function. Please note that specific details differ between device manufacturers, so in all cases the manufacturer's specifications should be adhered to.

Figure 7.4 Using an Electronic Pressure Switch for Purge Control



 This setup is for example only. This configuration can be amended, depending on application.

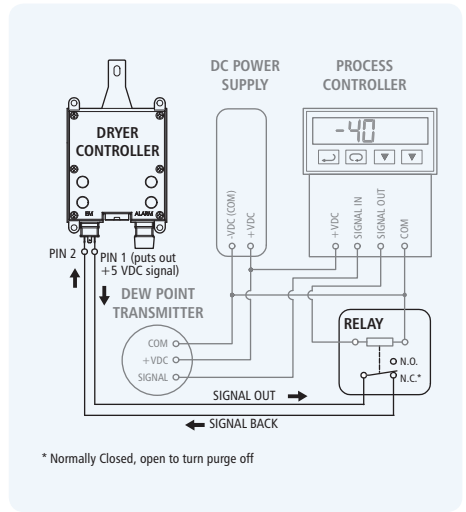
Using a Dew Point Transmitter and Process Controller for Purge Control

The best option for purge control if the delivered dryness (pressure dew point) of the air from the dryer is critical. If the air is deemed dry enough, than the purge can be shut off until the air’s moisture starts to climb. If the purge is turned off, care must be taken to ensure that the desiccant beds are not allowed to wet out too far before the purge is turned back on. Also, after turning the purge back on, the air’s pressure dew point may increase a bit before starting to drop again. This should be taken into consideration to ensure that the air flow remains sufficiently dry.

It is extremely important to understand that the purge may only be shut off during periods of low or no demand. This feature, if used otherwise, can result in permanent damage to the desiccant beds resulting in loss of drying capacity and possibly mechanical failure. The cartridges must not be allowed to become fully saturated at any time.

The following schematic offers an overview of the devices mentioned as they might be connected for use in controlling a dryer’s purge function. Please note that specific details differ between device manufacturers, so in all cases the manufacturer’s specifications should be adhered to.

Figure 7.5: Using process controller



⚠ This setup is for example only. This configuration can be amended, depending on application.

Making Connections between a Switching Device & Dryer EM Contact

Cable / Wire Selection Criteria:

Selected wire should have...

- *at least 2 conductors. More conductors can be useful in the case of a conductor break. Conductors can be swapped without having to run new cable.*
- *a conductor gauge of no greater than 18 awg is recommended to fit comfortably into the DIN connector insert.*
- *an outside diameter of no greater than 6mm (1/4"). Larger diameters do not fit well into the cable gland of the EM DIN connectors.*
- *an insulation type compatible with the environment that it will be run in.*

Installation

- Make the connection at the switch end first. This way you can check continuity at the dryer end before connecting to the dryer. Make sure that the contacts on the switch are normally closed. Pin 1 of the dryer EM connection puts out a 5 VDC signal. Take care to ensure that the contacts on the switching device are 'dry' and free of any voltage which could harm the dryer controller.
- Locate the DIN connector on the base of the controller.
- Remove the screw completely from the centre of the connector.
- Remove the blanking plug from the connector and discard
- Insert a small flat screwdriver into the small recess at the edge of the insert, pry the insert out of the DIN connector's outer shell (Figure 8.7).
- Remove the jumper wire which is between plug 1 and 2 and discard.
- Slip cable end through DIN connector's cable gland and out through the front of the DIN connector.
- Strip the outer insulation of the cable back approx 20mm (3/4").
- Strip the conductor insulation back approx 3mm (1/8").
- If possible using a meter, check the continuity between the two wires to ensure that the switch is in a closed position. If it is possible to verify the switch function as well this may be helpful.
- Insert conductors into pins 1 & 2 of insert. Tighten retaining screws securely.
- Determine which direction the cable gland should point.
- Carefully pull the cable back through the shell until the insert snaps back into place. Take care to work the wires around the retaining screw hole as they can become fairly easily pinched.
- Plug the DIN connector back onto the dryer's EM connection taking care to make sure that sealing gasket is in place.

Note: The male ground pin is slightly wider than pins 1 & 2. Take care to ensure that the female connector is oriented correctly.

Figure 7.6: connecting to EM port

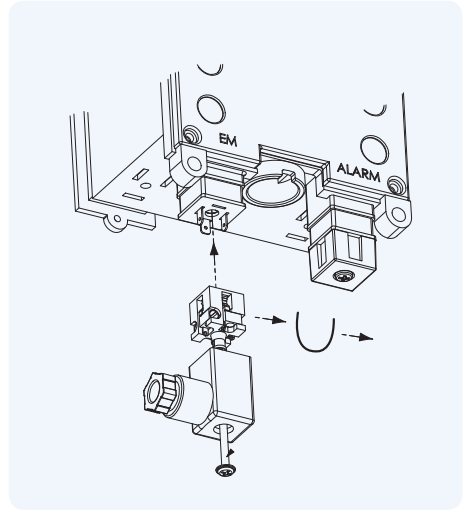
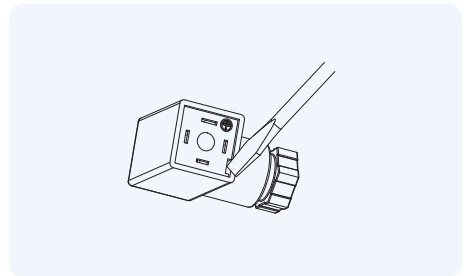


Figure 7.7: DIN connector



Alarm

Remote fault alarm: -

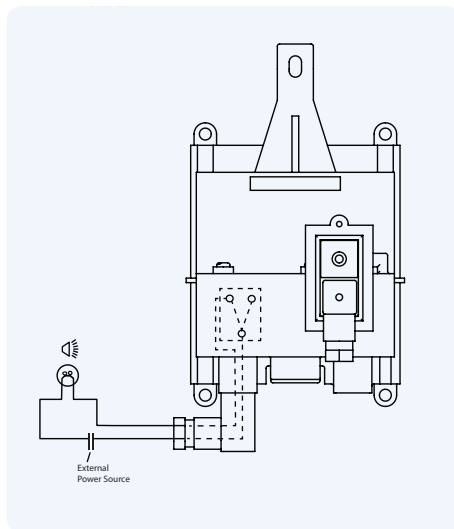
A remote alarm relay is built into the controller. This facilitates the activation of a remote audible or visual indicator. The alarm can be set to activate at the service interval and/or after a pre-defined number of electrical faults.

Alarm connection details

To enable the alarm facility it is recommended that a suitable cable is brought into the controller via the rear panel with a grommet. An external power source is required.

1. Connect the switching pole of an externally powered alarm device to terminals 1 and 2 of alarm DIN connector.
2. With the power removed from the dryer and the alarm lead wired as described in 1 above, remove the cover from the DIN connection marked 'Alarm' and connect the wired DIN connector ensuring the seal and screw are fitted.

Figure 7.8: Remote alarm wiring diagram



Alarm relay rating	Alarm connection type
3 Amp Max 28 VDC	Hirschmann GDS 207 industrial standard DIN connector or equivalent

Troubleshooting

General troubleshooting

Before specific identification of any fault is looked for, the following general points must be verified:

- *Has the unit been damaged externally or are any parts missing?*
- *Is power being supplied to the unit?*
- *Was start-up carried out in accordance with the instructions in this manual?*
- *Are all external valves correctly set for operation?*
- *Do the operational conditions meet those specified at time of ordering and used for product selection?*


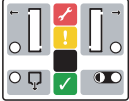
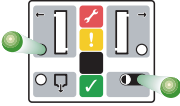
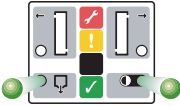
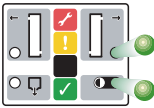
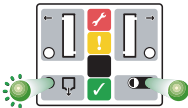

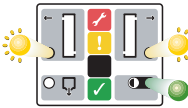
Troubleshooting: General		
Problem	Possible Cause	Action
Poor dewpoint	Liquid water at dryer inlet	Check pre-filtration and drains
	Excessive flow	Check actual flow against maximum specified
	Low inlet pressure	Check against specification
	High inlet temperature	Check against specification
	Silencer blocked or damaged	Replace silencer
	Air leaks	Tighten joints or fit new seals
	Desiccant life exceeded	Replace desiccant cartridges
	Desiccant contaminated	Check inlet filter and drains, replace cartridges
	EM is active when air is flowing through dryer	Check EM wiring, logic and/or control method used
	Power to dryer off while air is flowing through dryer	Ensure that power is on whenever air is flowing through dryer
Incorrect dryer operation	Jammed shuttle valves or faulted electrical components	See electrical operation troubleshooting section
Excessive or loud purge, or purge on only one tower	Jammed Main Shuttle Valve	Clean or replace shuttles
	Jammed Purge Exhaust Shuttle (PD2)	Clean or replace exhaust shuttles
	Faulty Solenoid Valve	Clean or replace solenoid valve
	Not utilizing Energy Management feature	Refer to Energy Management instructions (Section 8)


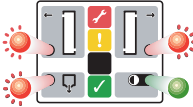

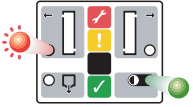
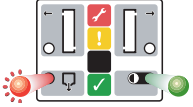


Section 8: Troubleshooting

Troubleshooting: Electrical					
Problem	Possible Cause	Display	Priority	Location	Action
No dryer function	No power supply	None	-	-	Check supply
Incorrect dryer operation	Left solenoid open or short circuit	Flashing red	P1	X LED	Replace solenoid valve
	Right solenoid open or short circuit	Flashing red	P1	Y LED	Replace solenoid valve
	Controller fault	Flashing red	P2	POWER LED	Replace controller
	Low power fault	Continuous red	P1	POWER LED	Check supply
Drain not operating	Energy Management active	None	-	-	Check installation
	Drain solenoid open or short circuit	Flashing red	P1	Z LED	Replace solenoid valve
	Controller fault	Flashing red	P2	POWER LED	Replace controller
	Tube connections from filter into dryer and from filter to drain reversed	None	-	-	Reverse tubes

Troubleshooting: Energy Management		
Problem	Possible Cause	Action
Dryer does not enter Energy Management when switching device is activated <i>and/or</i> Dryer does not enter Energy Management when EM contacts are opened.	Shorted or incorrect device wiring	Remove external wiring from the dryers EM contacts and place jumper between pins 1 & 2. To test with Energy Management not connected.
	Faulty switching device	Consult device manufacturer
	Recent cartridge change, where the control does not have a minimum of 6 hours on the 'Service hours from new' found on the dryer's main software window	Allow dryer to be energised for 6 hours

Section 8: **Troubleshooting**

LED Controller Display		
Status	LED Signal	Description
		Power off
		Left-hand tower purge cycle
		Repressurisation cycle
		Right-hand tower purge cycle
		Repressurisation including second drain
		Service warning every 11,500 hours

LED Controller Display		
Status	LED Signal	Description
		Service due every 12,000 hours
		Right-hand solenoid fault
		Left-hand solenoid fault
		Drain valve fault
		Controller fault
		Low power fault

Technical Data

Environmental Conditions

All dryers are designed to be safe under the following conditions:

- *Indoor use*
- *Altitude up to 2,000m*
- *Ambient temperature 5°C to 40°C*
- *Maximum RH 80% for temperatures up to 31°C, decreasing linearly to 50% RH at 40°C*
- *Mains supply voltage fluctuations not to exceed +/- 10% of nominal*
- *Transient over voltage IEC 60664 Class II*
- *Pollution degree 2, IEC 60664*

For operation extended from the above conditions, please contact Walker Filtration.



Excessive vibrations from external sources may cause failure of this product.

Reference Conditions

Measurement	Performance	
Effective inlet pressure	7 barg	101.5 psig
Effective inlet temperature	35°C	95°F
Relative humidity of air at inlet	95%	
Pressure dewpoint, standard version	-50°C	-50°F

Specified Limitation for Operation

Measurement	Performance	
Maximum inlet air pressure	16 barg	232 psig
Minimum inlet air pressure	4 barg	58 psig
Maximum ambient air temperature	50°C	122°F
Minimum ambient air temperature	5°C	41°F
Standard pressure dewpoint	-40°C	-40°F
Optional pressure dewpoint with application of flow correction factor	-70°C	-100°F
Electrical supply voltage	12 VDC to 24 VDC	100 VAC to 240 VAC

Section 9: Technical Data

Dryer Sizing Table

Dryer Model	Unit	Inlet Flow Rate		Dryer Config.	Dimension (mm)			Weight		Dimension (inches)			Dryer	Pre Filter
		Nm ³ /h	SCFM		A	B	C	Kg	lb	A	B	C		
PD004	3/8	7	4	simplex	490	351	92	13	28.7	19	13.8	3.6	PD004	A038
PD006	3/8	10	6	simplex	549	351	92	14	30.9	22	13.8	3.6	PD006	A038
PD008	3/8	14	8	simplex	609	351	92	15	33.1	24	13.8	3.6	PD008	A038
PD010	3/8	17	10	simplex	679	351	92	17	36.4	27	13.8	3.6	PD010	A038
PD015	3/8	25	15	simplex	859	351	92	20	43.0	34	13.8	3.6	PD015	A038
PD025	3/8	42	25	simplex	1109	351	92	24	52.9	44	13.8	3.6	PD025	A038
PD035	3/8	59	35	simplex	1504	531	92	31	68.4	59	13.8	3.6	PD035	A038
PD045	3/4	76	45	simplex	768	530	272	53	116.9	30	20.9	10.7	PD045	A038
PD055	3/4	93	55	simplex	868	530	272	59	130.1	34	20.9	10.7	PD055	A078
PD065	3/4	110	65	simplex	968	530	272	64	141.1	38	20.9	10.7	PD065	A078
PD085	1	144	85	simplex	1170	530	272	75	165.4	46	20.9	10.7	PD085	A108
PD105	1	178	105	simplex	1480	530	272	91	200.7	58	20.9	10.7	PD105	A108
PD135	1 1/4	229	135	simplex	1680	530	272	102	224.9	66	20.9	10.7	PD135	A128
PD175	1 1/4	297	175	simplex	2080	530	272	123	271.2	82	20.9	10.7	PD175	A128
PD215	1 1/2	365	215	duplex	1488	530	459	172	379.3	59	20.9	18.1	PD215	A158
PD275	1 1/2	467	275	duplex	1688	530	459	192	423.4	66	20.9	18.1	PD275	A158
PD365	1 1/2	620	365	duplex	2098	530	483	232	511.6	83	20.9	19.0	PD365	A159

Pressure Correction Factor (PCF)

Operating Pressure

barg	4	5	6	7	8	9	10	11	12	13	14	15	16
psig	58	73	87	102	116	131	145	160	174	189	203	218	232
PCF*	0.62	0.75	0.87	1.00	1.12	1.25	1.37	1.50	1.62	1.75	1.87	2.00	2.12

*Always use the pressure correction factor (PCF) closest to actual inlet pressure condition

Temperature Correction Factor (TCF)

Temperature

°C	20	25	30	35	40	45	50
°F	68	77	86	95	104	113	122
TCF	1.07	1.06	1.04	1.00	0.88	0.67	0.55

Dewpoint Correction Factor (DCF)

Temperature

°C	-40	-70
°F	-40	-94
DCF	1.0	0.7

Section 9: Technical Data

Figure 9.1: Models PD004 – PD035

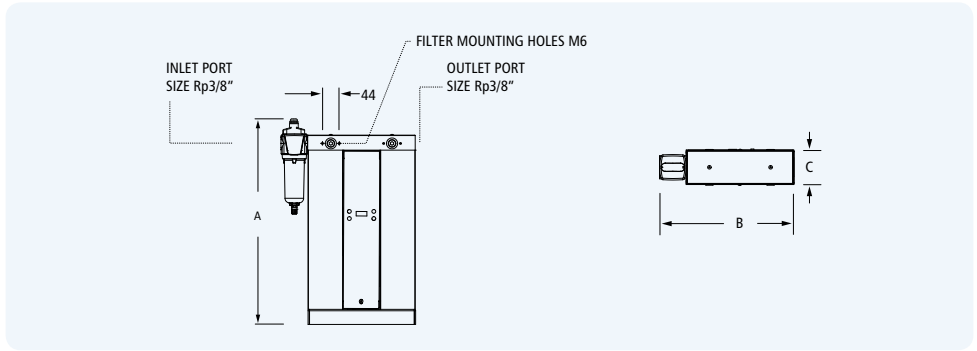


Figure 9.2: Models PD045 – PD175

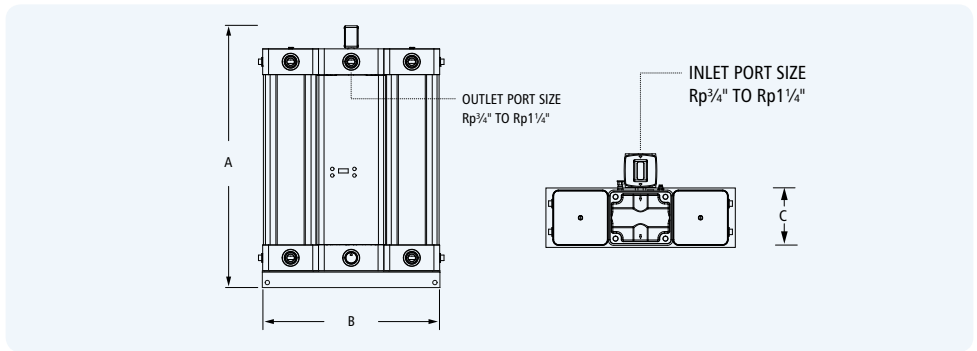
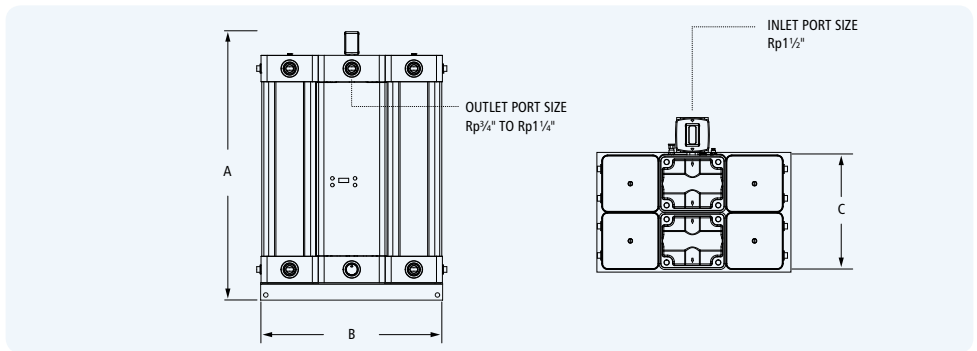


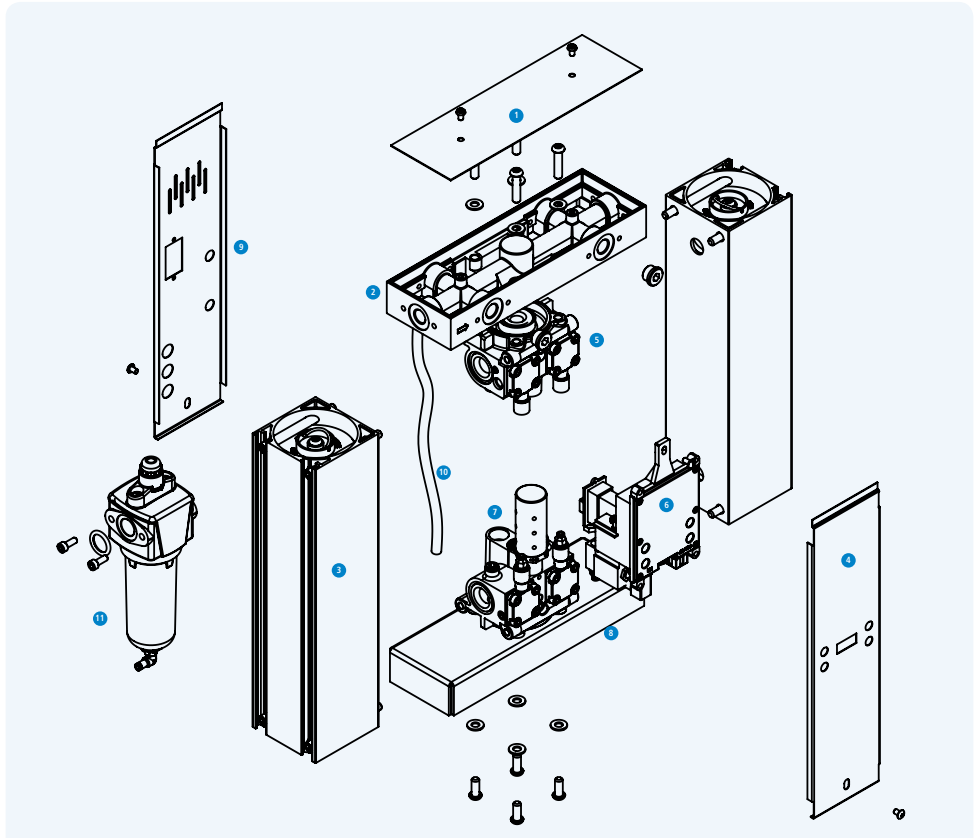
Figure 9.3: Models PD215 – PD365



Component Parts

PD004 -- PD035

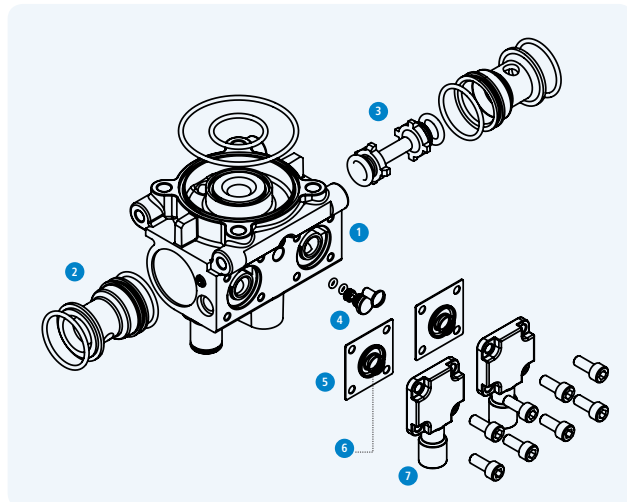
Fig 10.1 PD004 – PD035



- | | |
|-----------------------|--------------------------|
| 1. Cover plate | 7. Bottom block assembly |
| 2. Cruciform | 8. Base/skid |
| 3. Tower assembly | 9. Back panel |
| 4. Front panel | 10. Downpipe |
| 5. Top block assembly | 11. XA pre-filter |
| 6. Controller | |

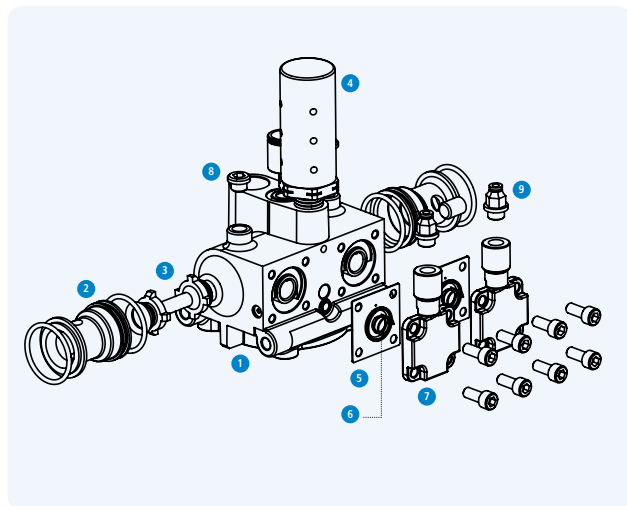
PD004 -- PD035

Fig 10.2 Top block assembly



1. Top Block
2. Shuttle seat
3. Shuttle
4. Purge Plug
5. Diaphragm with disc
6. Compression spring
7. Top bonnet

Fig 10.3 Bottom block assembly



1. Bottom block
2. Shuttle seat
3. Shuttle
4. Silencer
5. Diaphragm with disc
6. Compression spring
7. Bottom bonnet
8. 1/8 pressure plug
9. 4mm straight adaptor

PD004 -- PD035

Fig 10.4 Tower assembly

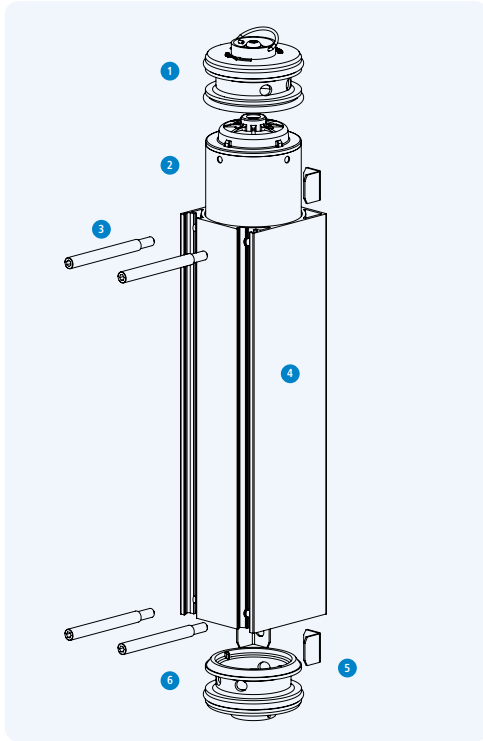


Fig 10.5 Top tower plug assembly

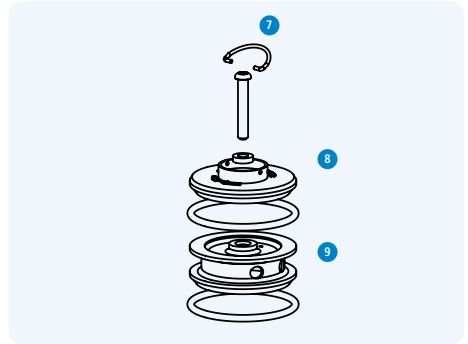
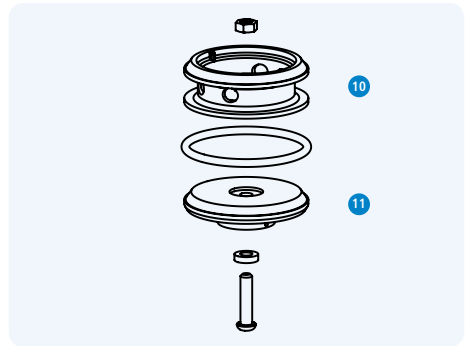


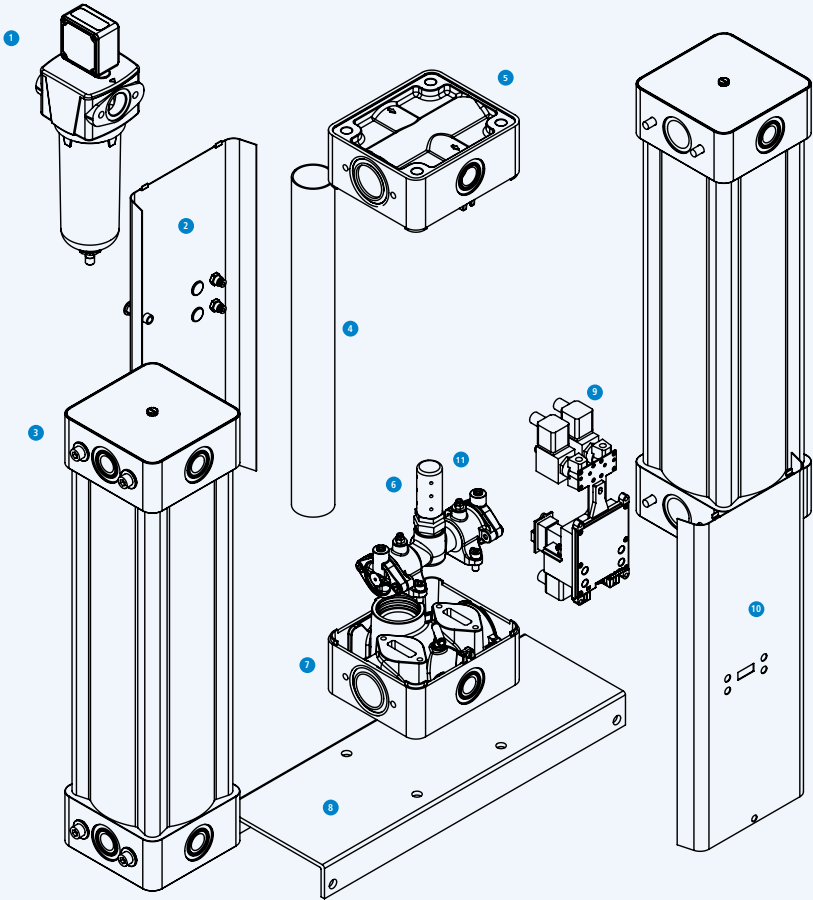
Fig 10.6 Bottom tower plug assembly



1. Top tower plug assembly
2. Cartridge
3. Extrusion bolt
4. Extrusion
5. Extrusion corner bracket
6. Bottom tower plug assembly
7. Wire handle
8. Tower plug
9. Banjo adaptor
10. Banjo adaptor
11. Tower plug

PD045 - PD365

Fig 10.7 PD045 – PD365



* Models PD215 – PD365 are duplex

- | | |
|------------------------------|--------------------------------|
| 1. XA pre-filter | 7. Bottom valve block assembly |
| 2. Back panel | 8. Base/skid |
| 3. Tower assembly | 9. Controller |
| 4. Downpipe | 10. Front panel |
| 5. Top valve block assembly | 11. Silencer |
| 6. Exhaust manifold assembly | |

PD045 - PD365

Fig 10.8 Tower assembly

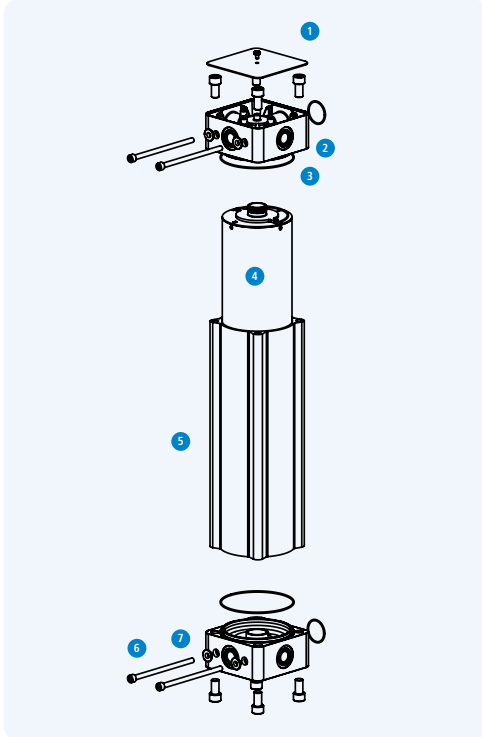


Fig 10.9 Top valve block assembly

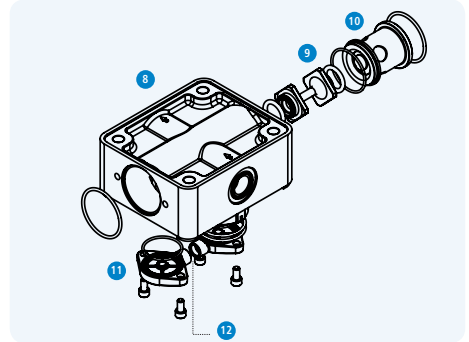


Fig 10.10 Exhaust manifold assembly

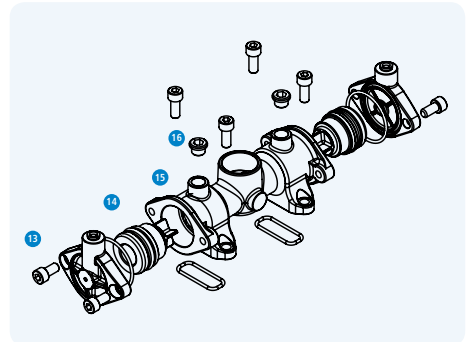
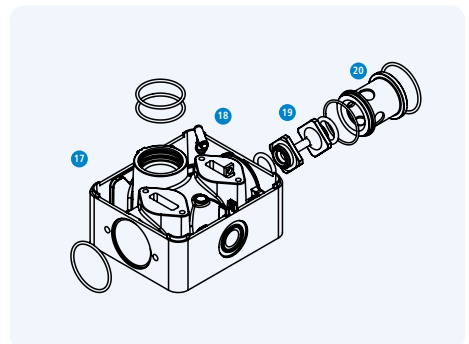


Fig 10.11 Bottom valve block assembly

- | | |
|---------------------|---------------------------|
| 1. QPM cover | 12. Purge plug |
| 2. QPM | 13. Exhaust bonnet |
| 3. Extrusion gasket | 14. Exhaust shuttle |
| 4. Cartridge | 15. Exhaust manifold |
| 5. Extrusion | 16. 1/4 Rp blanking plug |
| 6. Extrusion bolt | 17. Bottom valve manifold |
| 7. QPM bush | 18. 6mm swivel tee |
| 8. Top manifold | 19. Shuttle |
| 9. Shuttle | 20. Valve seat |
| 10. Valve seat | |
| 11. Purge bonnet | |



Spares

Purge Plug Identification

Each dryer is set with the appropriate purge plug for the operating pressure specified at point of order. The purge plug fitted on the unit will be identified on the purge plug label, located underneath the rating plate on the right. If the inlet pressure to the dryer is adjusted to operate at an alternative working pressure other than initially specified, please contact Walker Filtration and order an appropriate purge plug (identified in the table below). Before operating at the new working pressure this purge plug must be installed into the dryer. Failure to comply with these instructions could result in component failure and affect any warranty claims.

Purge Plug Identification													
Model	Operating Pressure (barg)												
	4	5	6	7	8	9	10	11	12	13	14	15	16
PD004	PPK008	PPK008	PPK007	PPK007	PPK006.5	PPK006.5	PPK006	PPK006	PPK006	PPK006	PPK005	PPK005	PPK005
PD006	PPK011	PPK010	PPK009	PPK008	PPK007.5	PPK007.5	PPK007.5	PPK007	PPK007	PPK007	PPK006.5	PPK006.5	PPK006.5
PD008	PPK012	PPK011	PPK010	PPK010	PPK009	PPK008	PPK008	PPK007.5	PPK007.5	PPK007.5	PPK007	PPK007	PPK007
PD010	PPK013	PPK012	PPK011	PPK011	PPK010	PPK009	PPK009	PPK009	PPK008.5	PPK008.5	PPK008.5	PPK008	PPK008
PD015	PPK015	PPK014	PPK013	PPK013	PPK012	PPK011	PPK011	PPK010	PPK010	PPK010	PPK009	PPK009	PPK009
PD025	PPK020	PPK018	PPK016	PPK015	PPK014	PPK014	PPK013	PPK013	PPK013	PPK012	PPK012	PPK012	PPK012
PD035	PPK028	PPK023	PPK021	PPK020	PPK018	PPK018	PPK016	PPK015	PPK015	PPK014	PPK014	PPK014	PPK014
PD045	PPK28	PPK25	PPK23	PPK22	PPK20	PPK19	PPK18	PPK17	PPK17	PPK16	PPK16	PPK15	PPK15
PD055	PPK31	PPK28	PPK26	PPK24	PPK23	PPK21	PPK20	PPK19	PPK19	PPK18	PPK17	PPK17	PPK16
PD065	PPK33	PPK30	PPK28	PPK26	PPK25	PPK23	PPK22	PPK21	PPK20	PPK20	PPK19	PPK18	PPK18
PD085	PPK38	PPK35	PPK32	PPK30	PPK28	PPK27	PPK26	PPK24	PPK23	PPK23	PPK22	PPK21	PPK20
PD105	PPK43	PPK39	PPK36	PPK34	PPK32	PPK30	PPK29	PPK27	PPK26	PPK25	PPK24	PPK23	PPK23
PD135	PPK49	PPK44	PPK41	PPK38	PPK36	PPK34	PPK32	PPK31	PPK30	PPK29	PPK28	PPK27	PPK26
PD175	PPK55	PPK51	PPK47	PPK44	PPK41	PPK39	PPK37	PPK36	PPK34	PPK33	PPK32	PPK31	PPK30
PD215*	PPK43	PPK39	PPK36	PPK34	PPK32	PPK30	PPK29	PPK27	PPK26	PPK25	PPK24	PPK23	PPK23
PD275*	PPK49	PPK44	PPK41	PPK38	PPK36	PPK34	PPK32	PPK31	PPK30	PPK29	PPK28	PPK27	PPK26
PD365*	PPK55	PPK51	PPK47	PPK44	PPK41	PPK39	PPK37	PPK36	PPK34	PPK33	PPK32	PPK31	PPK30

* 2 purge plugs are required

 Appropriate purge plug selection is very important for function of the dryer. Failure to comply with this may affect your warranty.

Section 11: Spares Information

dryer model	description	kit number	
PD004	service kit (2 cartridges)	PDC004-12000	<p>12,000 hour service kit includes: desiccant cartridges, pack of sealing O-rings and sealing washers, instruction manual, controller re-set disc.</p>
PD006		PDC006-12000	
PD008		PDC008-12000	
PD010		PDC010-12000	
PD015		PDC015-12000	
PD025		PDC025-12000	
PD035		PDC035DF-12000	
PD045		PDC045DF-12000	
PD055		PDC055DF-12000	
PD085	service kit (4 cartridges)	PDC085DF-12000	
PD44SFD		PDC044DF-12000	
PD66SFD		PDC066DF-12000	
PD105		PDC105DF-12000	
PD135		PDC135DF-12000	
PD175		PDC175DF-12000	
PD215	service kit (8 cartridges)	PDC215DF-12000	
PD275		PDC275DF-12000	
PD365		PDC365DF-12000	
PD004-PD035	valve service kit	VSKS 01	<p>24,000 hour valve service kit includes: shuttle seats, shuttles, O-rings, diaphragms and springs, solenoid valves, controller re-set disc, spare pressure plugs</p>
PD44SFD/PD66SFD		VSKD 01	
PD045-PD175		PDVSKS 01	
PD215-PD365		PDVSKD 01	
PD004-PD035	foot mounting bracket	WKN01805	
PD004-PD035	shuttle kit	PD15KS01	<p>Shuttle kit includes: shuttle seats, shuttles, exhaust block shuttles, O-rings and seals</p>
PD044SFD/PD066SFD		PD1SKD01	
PD045-PD175		PD25KS01	
PD215-PD365		PD2SKD01	
PD004-PD035	top diaphragm kit	PD1TDKS01	<p>Diaphragm kit includes: valve diaphragms and diaphragm springs</p>
PD044SFD/PD066SFD	bottom diaphragm kit	PD1TDKD01	
PD004-PD035		PD1BDKS01	
PD044SFD/PD066SFD		PD1BDKD01	
PD004	silencer kit	PD15K01	<p>6,000 hour silencer service kit</p>
PD006-PD035		PD15K02	
PD044SFD/PD066SFD		PD15K03	
PD045-PD085		PD25K01	
PD105-PD175		PD25K02	
PD215-PD365		PD25K03	
PD004-PD035	controller assembly kit (with valves)	PDCK01	<p>Controller assembly kit includes: electronic controller complete with solenoid valves</p>
PD044SFD/PD066SFD		PDCK01	
PD045-PD365		PDCK02	
PD004-PD035		PD1 controller (without valves)	
PD045-PD365	PD2 controller (without valves)	PDC02	
All models	purge plug kit	PPK004-PPK365	<p>Purge plug kit includes: sized purge plugs and assembled O-rings</p>
All models	DIN plug kit	PDDIN01	<p>DIN plug kit includes: DIN plug, gasket and screw</p>

Warranties and liabilities

Claims for warranty and liability concerning personal injury or material damage are excluded if they resulted due to one or more of the following factors:

- *Inappropriate use*
- *Inappropriate application of the dryer.*
- *Technically incorrect installation, start-up operation or maintenance of the dryer.*
- *Operation of a known damaged dryer.*
- *Failure to observe the information given in this manual concerning all life phases of the dryer.*
- *Undertaking constructional or operational modifications to the dryer without prior agreement with Walker Filtration.*
- *Inadequate monitoring and replacement of components of the dryer that are subject to wear.*
- *Improper completion of repairs.*
- *Use of non-original or non-approved parts for service or maintenance.*

Important Note

Industrial Compressed Air Desiccant Dryers

The Walker Filtration Ltd desiccant dryer range is designed for, warranted and intended for use in fixed industrial compressed air applications only.

Use on non-fixed installations such as :


- *marine (e.g. offshore, shipboard)*
- *transportable (e.g. portable air treatment units)*
- *non-fixed (e.g. rolling stock, railway etc)*

are not strictly prohibited, however use in such applications is not recommended nor endorsed as additional design features, function testing, certification (both mechanical and electrical) and validation may be required to satisfy relevant end user application specific specifications and/or mandatory and non-mandatory local, national or international standards and legislation.



Such additional undertakings are the responsibility of the package or system builder, installer or end user.

Declaration of Conformity

2014/35/EU, 2014/30/EU, 2014/68/EU		
Name of Manufacturer	Walker Filtration Ltd.	
Address of Manufacturer	Birtley Road, Washington, Tyne & Wear, NE38 9DA, England.	
Description of Product	Pro Dry Compressed Air Dryer	
Designation of Product	PD004, PD006, PD008, PD010, PD015, PD025, PD035, PD045, PD055, PD065, PD085, PD105, PD135, PD175, PD215, PD275, PD365	
Standards Used Harmonised Standards* applied where available — with alternatives specified where harmonised standards do not exist.	LVD: 2014/35/EU	EN 60204-1:2006+A1:2009*
	EMC: 2014/30/EU	EN 61000-6-2:2005* EN 61000-6-3:2007+A1:2011*
	PED: 2014/68/EU	Generally in accordance with ASME VIII Division1 Rules for construction of pressure vessels
Notified Body Pressure Equipment Directive (not applicable to Cat 1 Products)	Lloyd's Register EMEA Notified Body No. 0038, 71 Fenchurch Street, London, EC3M 4BS, England.	
Conformity Assessment Module Pressure Equipment Directive (PED) Only	PD004 - PD025: Cat I – Module A PD035 - PD135: Cat II – Module D1: COV0310124/1 PD175 - PD365: Cat III – Module B**+D: COV0712098/1 + COV1112690/1 Assessment based on Group 2 Gas service **Module B certificate issued by conformity assessment body under Directive 97/23/EC and remains valid under the new Directive as defined in 2014/68/EU Article 48.	
Quality Assurance System: ISO 9001:2008-LRQ0930553	Lloyd's Register Quality Assurance Ltd (LRQA) 1 Trinity Park, Bickenhill Lane, Birmingham, B37 7ES, United Kingdom	
Year of Manufacture	Refer to product marking	
Name of Authorised Representative	Simon Wise	
Position of Authorised Representative	Chief Technical Officer (CTO)	
	This declaration of conformity is issued under the sole responsibility of the manufacturer. I declare on behalf of Walker Filtration Ltd (the manufacturer) and as authorised representative, that the stated products fulfil the requirements of the new approach directives.	
	July 2016	



The ultimate filtration & drying technology

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