



# domnick hunter

## MiDAS<sup>DRY</sup>

### COMPRESSED AIR DRYERS

PERSLUCHTDROGERS ● DRUCKLUFTTROCKNER  
SÈCHEURS D'AIR COMPRIMÉ ● ΠΑΙΝΕΙΛΜΑΚΙΒΑΙΜΕΤ  
TRYCKLUFTSTORKARE ● LUFTTØRKERE FOR KOMPRIMERT LUFT  
TRYKLUFTTØRREANLÆG ● ΞΗΡΑΝΤΗΡΕΣ ΠΕΠΙΕΣΜΕΝΟΥ ΑΕΡΑ  
SECADORES DE AIRE COMPRIMIDO ● SECADORES DE AR COMPRIMIDO  
ESSICCATORI PER ARIA COMPRESSA

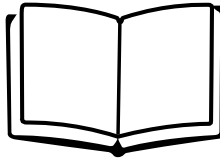


Instruction Manual

Handleiding ● Bedienungsanleitung ● Manuel op ratoire ● K ytt opas  
Bruksanvisning ● Instruksjonsh ndbok ● Brugsvejledning ● Εγχειρίδιο χειρισμού  
Manual de instrucciones ● Manual de Instru es ● Manuale di istruzioni



<b>English</b>	<b>1</b>
<b>Nederlands</b>	<b>15</b>
<b>Deutsch</b>	<b>29</b>
<b>Français</b>	<b>43</b>
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## WARNING!

**Do not operate the dryer until the instructions in this manual have been read and understood by all personnel concerned.**

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

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.

**domnick hunter** 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 cannot be all inclusive. If the dryer user employs an operating procedure, item of equipment or a method of working which is not specifically recommended by **domnick hunter** the user must ensure that the dryer will not be damaged or made a potential hazard to persons or property.

## IMPORTANT



**Caution: Power  
Risk of Electric Shock**



**Attention**

**PLEASE NOTE THAT YOUR WARRANTY MAY BE INVALIDATED IF THE EQUIPMENT HAS NOT BEEN INSTALLED, COMMISSIONED AND MAINTAINED BY domnick hunter OR A domnick hunter APPROVED AGENT.**

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# INTRODUCTION

The **PNEUDRI MiDAS** range of compressed air dryers are designed to remove moisture from compressed air by utilising state of the art technology to obtain dewpoints of -40°C PDP and by appropriate de-rating -70°C PDP.

**PNEUDRI MiDAS** dryers have been designed to require minimal maintenance and can be installed virtually anywhere.

The **PNEUDRI MiDAS** dryer consists of upper and lower head assemblies joined together with an aluminium extrusion containing twin internal chambers. The upper head assembly contains inlet and outlet manifolds, pre-filter and autodrain. The lower head assembly contains two exhaust valves and a passive shuttle ball valve. Contained in each internal chamber is a combination desiccant / after-filter cartridge. During operation one chamber is on-line (drying) while the other is regenerating, using the Pressure Swing Adsorption (PSA) process.

## Pressure Swing Adsorption (PSA)

A small percentage of dried air is taken from the dryer outlet flow and is used to regenerate the saturated chamber by expanding the dried air from line pressure to atmospheric pressure. During this process, the moisture is physically removed from the regenerating chamber and vented to atmosphere through the exhaust.

## **2.0 INSTALLATION (refer to figure 1)**

### **2.1 ESSENTIAL INFORMATION**

Care must be taken to ensure that the dryer is not subject to flows (even peaks) in excess of the dryers rated capacity, e.g. dryers downstream of an air receiver have increased potential to be overflowed.

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

The control enclosure (A) must be at the bottom and the dryer must be installed vertical and level.

Two inlet and two outlet connections are available at the top of the dryer to enable connection from either left or right. Unused connections (B) and (C) must be sealed with the threaded plugs provided. Suitable rated pipe and connections must be used for the installation. All pipework must be secure and safely positioned.

The purge flow is factory set for 6 bar g (87 psi g) minimum operating pressure. Should the minimum pressure requirement be different, the purge flow must be reset by a domnick hunter engineer or a domnick hunter approved agent.

Ensure the dryer is electrically connected to a supply suitable for the unit. See wiring diagram printed in 2.3 Electrical Details.

#### **1. Filtration**

A 0.01 micron pre-filter is contained within the upper head assembly. 1 micron after-filters are integral within desiccant cartridges screwed into inserts in the upper head assembly. Filters must be maintained by domnick hunter or a domnick hunter approved agent.

#### **2. By-pass Line (D)**

A by-pass line, 3/8" BSP or NPT \* (D) ensures complete safety during maintenance and enables a continuous supply of compressed air to be maintained if required. It should be remembered that air bypassing the dryer is dirty untreated air.

#### **3. Valves (E, F, G)**

Isolation valves, 3/8" BSP or NPT \* are recommended on the inlet (E), outlet (F) and bypass (G) lines at the positions indicated in Figure 1.

\* When ordering, the thread type must be specified.

## 2.2 TECHNICAL SPECIFICATION

### Operating Specification

Parameter	Minimum	Maximum	Nominal
Inlet Pressure	4.0 bar g (58 psi g)	12.0 bar g (175 psi g)	7.0 bar g (102 psi g)

Parameter	Minimum	Maximum	Nominal
Inlet Temperature	1.5°C (35°F)	50°C (122°F)	35°C (95°F)

### Electrical Specification

Dryer Model	Voltage Supply	Supply Need	Electrical Approval
50 Hz	230 V	1 phase	CE
60 Hz	115V	1 phase	CSA/UL

### General Specification

#### Inlet Flowrate

DAS 1	3 cfm	5.1 m3/hr
DAS 2	5 cfm	8.5 m3/hr
DAS 3	8 cfm	13.6 m3/hr
DAS 4	10 cfm	17.0 m3/hr
DAS 5	13cfm	22.1 m3/hr
DAS 6	15 cfm	25.5 m3/hr
DAS 7	20 cfm	34.0 m3/hr

Outlet Dewpoint -40 °C (-40°F) Optional -70°C (-100°F)

Environmental Protection IP65 (NEMA4)

Noise Level ≤70 dB(A)

#### Dryer Weights

DAS 1	11 Kgs	24.3 lbs
DAS 2	13 Kgs	28.7 lbs
DAS 3	16 Kgs	35.3 lbs
DAS 4	18 Kgs	39.7 lbs
DAS 5	20 Kgs	44.1 lbs
DAS 6	23 Kgs	50.7 lbs
DAS 7	28 Kgs	61.7 lbs

Note: All flow rates referenced at 20°C (68°F) , 7 bar g (102 psi g)

## 2.3 ELECTRICAL DETAILS

Only competent qualified electricians must work on dryer circuitry.

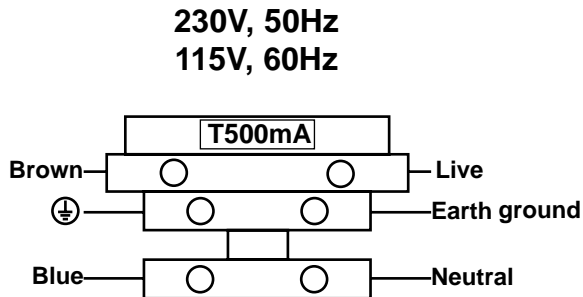
Check the rating plate for power supply requirements.

Correct isolator switches must be provided at a safe and accessible point near to the dryer.

The dryer must be provided with a live, neutral and earth ground.

Connect power to the dryer (via the mains cable gland \*) at the fused terminal block mounted on the small base plate located under the enclosure. Four screws retain the base plate.

A T500mA fuse is fitted as standard.

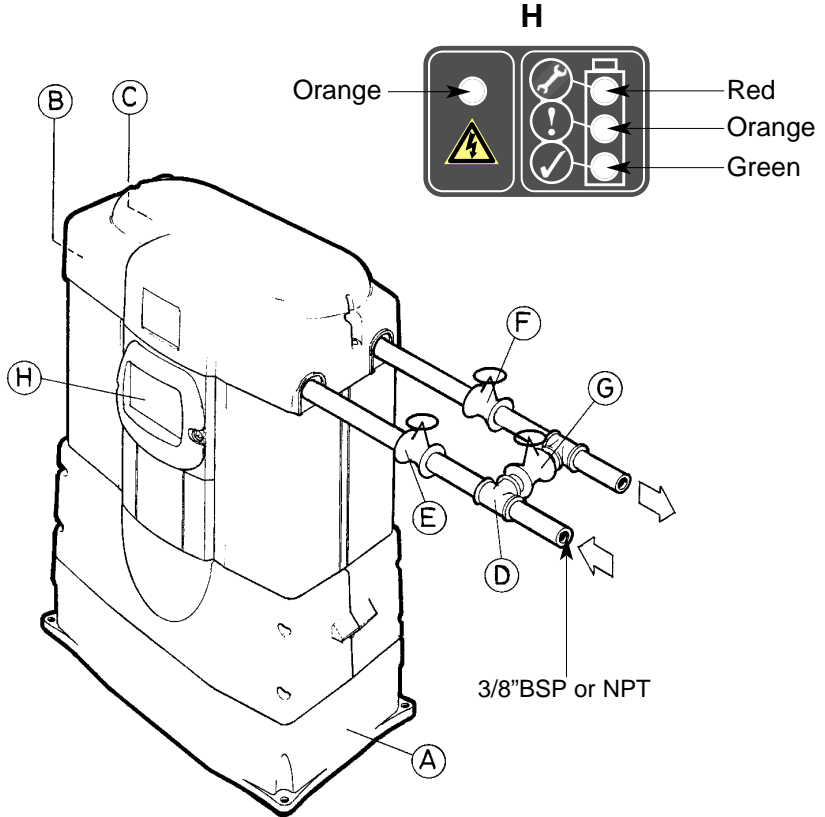


\*For CSA / NPT dryers, the cable gland is replaced by a conduit entry aperture.



## 2.4 INSTALLATION PROPOSAL

Figure 1

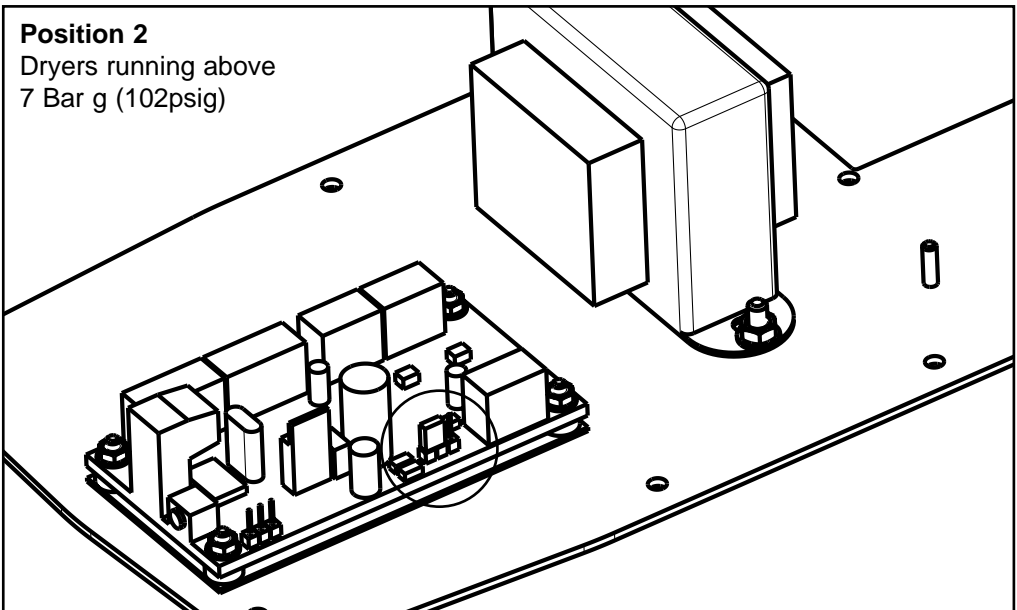
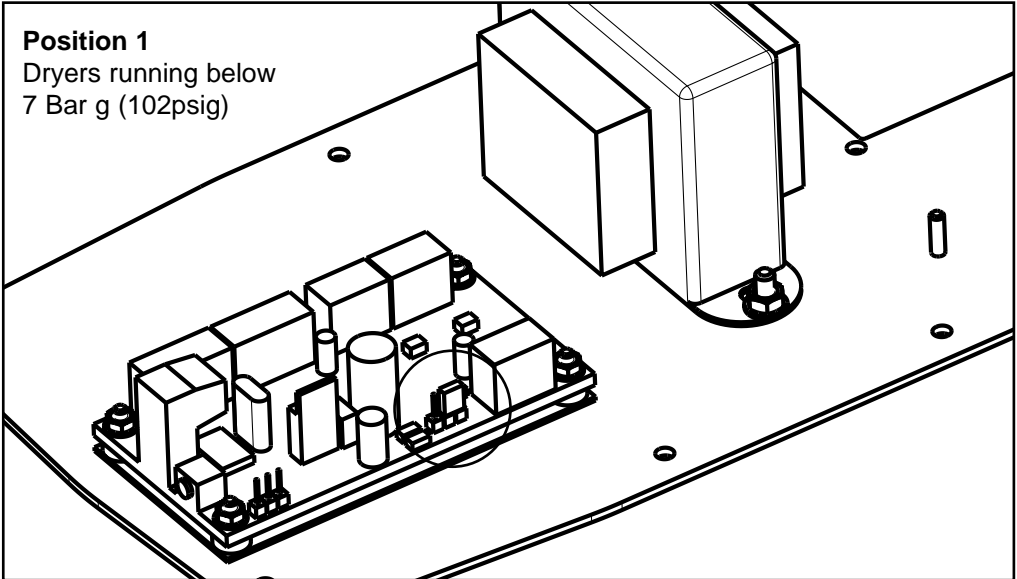


KEY	
(A) Control Box	(E) Inlet Valve
(B) Optional Inlet	(F) Outlet Valve
(C) Optional Outlet	(G) By-pass Valve
(D) By-pass Line	(H) Display Unit

## 2.5 RUNNING THE DRYER WITH A MINIMUM PRESSURE ABOVE 7 BAR

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

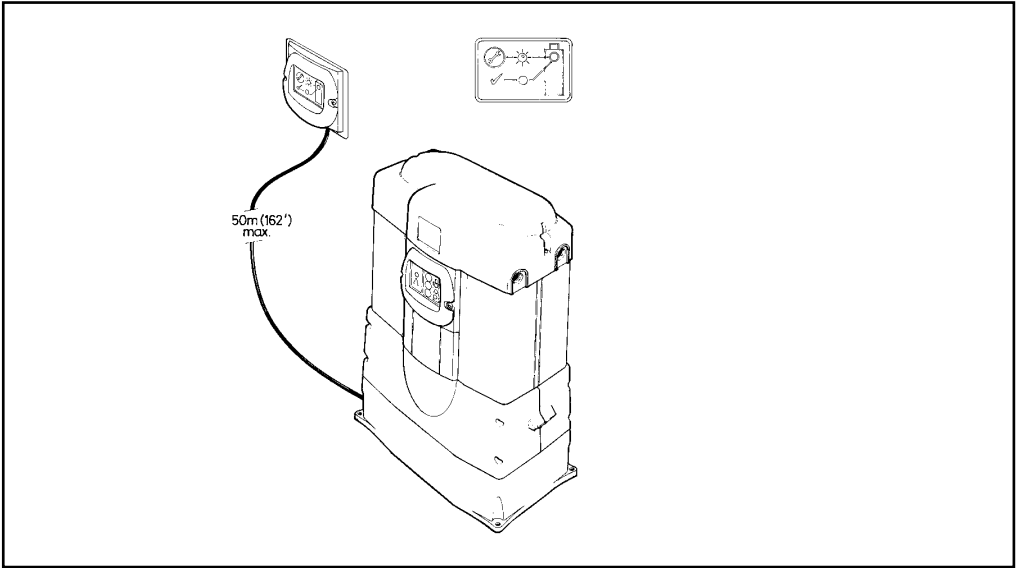
To carry out the alteration, ensure the electrical supply is isolated, lie the dryer on its back, to gain access to the control base. Remove the large plate to gain access to the timer board. Move electric jumper from Position 1 to Position 2, as shown.



## 2.5 ACCESSORIES

Remote Alarm Display kit

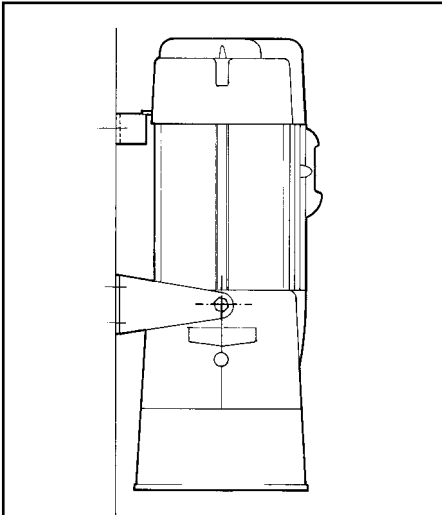
Part Number: DASRDK



Wall Mounting Bracket Kit

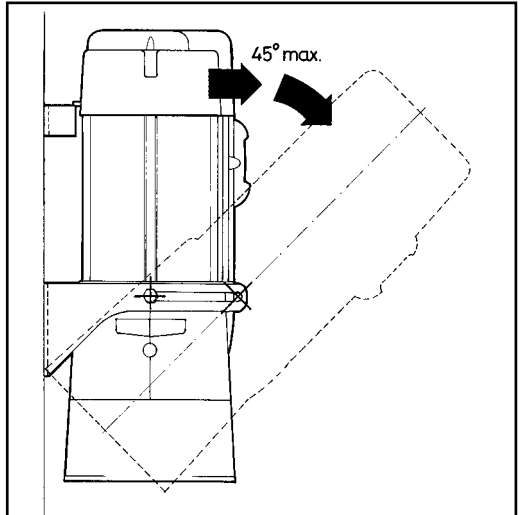
Option 1

Part Number: DASMB1



Option 2

Part Number: DASMB2



## 3.0 START-UP AND OPERATION

### 3.1 INTIAL STARTUP

Ensure a suitable supply of compressed air between 4 bar g (58 psi g) and 12 bar g (175 psi g) pressure is available and check that the dryer cannot be overflowed. Inlet temperature must be between 1.5°C (35°F) to 50°C (122°F) at all times.

#### IMPORTANT NOTE

Ensure all valves are opened and closed gradually.

Proceed as follows: (Refer to figure 1)

### 3.2 WITHOUT THE BY-PASS LINE (D)

Close inlet (E) and outlet (F) valves.

Introduce air to the dryer by gradually turning the inlet valve (E) until fully open.

Allow dryer to fully pressurise, then gradually open the outlet valve (F).

Switch on the electrical isolator, the yellow 'power on' LED and the green 'correct operation' LED will illuminate and the dryer will commence cycling. The dryer is now on stream.

### 3.3 USING THE BY-PASS LINE (D)

With the inlet (E) and outlet (F) valves closed and the by-pass (G) valve open, introduce air to the dryer by gradually turning inlet valve (E) until fully open.

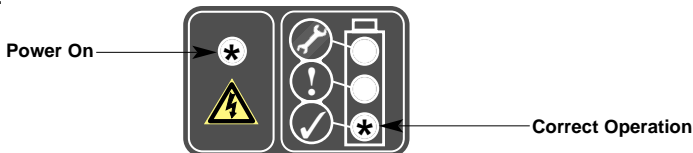
Allow the dryer to fully pressurise, then open the outlet valve (F) while simultaneously closing the by-pass valve (G).

Switch on the electrical isolator, the yellow 'power on' LED and the green 'correct operation' LED will illuminate and the dryer will commence cycling. The dryer is now on stream.

### 3.4 NORMAL OPERATION

Following the start-up procedure the operation of the dryer is fully automatic and requires no further attention until shut down.

The yellow 'power on' LED and the green 'correct operation' LED should be illuminated continuously.



The dryer contains two desiccant chambers, while one chamber is drying the compressed air (adsorption), the other chamber is simultaneously undergoing regeneration (desorption). At a predetermined time both exhaust valves close and repressurisation begins. Every three minutes the chambers are reversed in function, this is the changeover point. Changeover is characterised by an immediate venting of compressed air from the chamber entering regeneration.

The dryer can be shut down at any point in its cycle and when restarted will enter an automatic repressurisation stage. After repressurisation the cycle will commence at the point at which it stopped.

**NB**

If power is switched on, the dryer will enter an automatic repressurisation stage at the point at which it stopped.

### **3.5 SHUT-DOWN PROCEDURE**

#### **To Depressurize the Dryer**

Prior to isolating the electrical supply close the outlet valve (F) while simultaneously opening the by-pass valve (G) if fitted. Close the inlet valve (E). The dryer will now be isolated from mains pressure. Cycle the dryer for a minimum of 3 minutes to ensure the dryer vents and is completely depressurized. When the dryer is completely depressurized, isolate the electrical supply.

**NB**

The by-pass valve (G) should only be opened if the dryer is undergoing maintenance.

## 4.0 MAINTENANCE

### Daily

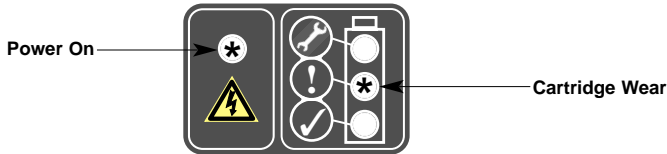
- Ensure the yellow 'power on' LED and the green 'correct operation' LED are illuminated.

### Weekly

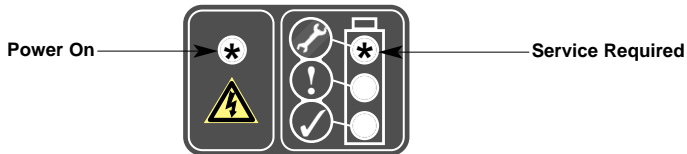
- Check dryer seals, fittings and pipe work for air leaks.
- Ensure correct operation of inlet filtration condensate drainage.

The Combination desiccant / after-filter cartridges have a finite life dependent upon operating conditions.

Cartridge status is indicated



Cartridges will require changing in 500 hours.



Cartridges require changing and audible alarm will sound every 6 seconds.

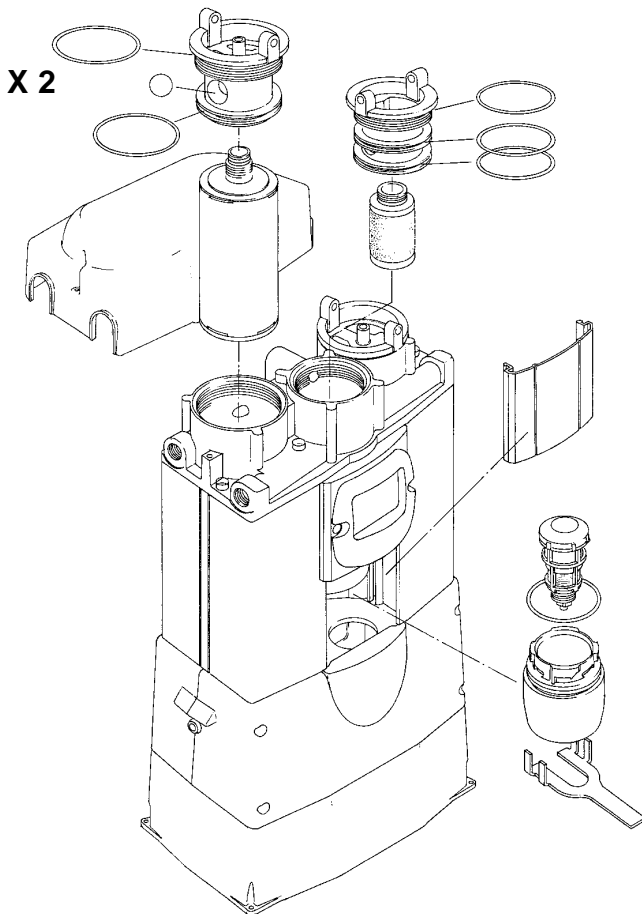
NOTE: Temporary resetting of the alarm to prevent nuisance noise is possible after alarm has sounded for the first time. This is done by depressing once the reset button located inside the control enclosure, accessed by removing the black insert on the side. The alarm will be muted for a 24 hour interval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

Servicing of the dryer must only be carried out by domnick hunter personnel or trained domnick hunter service agents.

## 5.0 SPARE PARTS LIST

Genuine domnick hunter Service kits must only be used when servicing the dryer.

Dryer Model	Spares Kit Part Numbers
DAS 1	DASMK1
DAS 2	DASMK2
DAS 3	DASMK3
DAS 4	DASMK4
DAS 5	DASMK5
DAS 6	DASMK6
DAS 7	DASMK7



## 6.0 TROUBLESHOOTING

Problem	Indication	Probable Cause	Remedy
Poor Dewpoint	N/A	Entrained Water	Check pre-filtration and pre-filtration drains
		Excessive air flow demand	Check actual flow against rated flow of dryer Check for recent additions to 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 barg (87 psi g) system pressure
		Exhaust silencers blocked	Change by domnick hunter trained personnel
		Contaminated desiccant	Eliminate source of contamination. Desiccant change by domnick hunter trained personnel
		Cartridges not fitted	Check and fit cartridges
Electrical Fault	Power LED 'OFF'	Hardware fault	Contact domnick hunter customer service
Failure to purge	No depressurisation and poor dewpoint	Purge valve blocked or shut Exhaust silencer blocked	domnick hunter trained personnel to adjust Change by domnick hunter trained personnel
Outlet air flow stops	Downstream pressure drops	No air supply to the dryer	Check compressor air supply to dryer Check all pipework and fittings for leaks
Constant depressurisation	Erratic air flow from exhaust	Damaged valve	Change by domnick hunter trained personnel

### Reference to Known Misuse

#### Filters

- Opening inlet valve too quickly, causing initial high differential pressure across filter element.

#### Inlet / outlet head

- Pipe diameter too small
- Pipework unsupported
- Inlet pipework taken from low point of manifold range allowing bulk water intrusion into the dryer.

#### Electric control box

- Incorrect wiring configuration by user or incorrect supply voltage.
- No fuse fitted or fuse blown.

#### Additional items

- Use of non-recommended components.
- Untrained, unauthorised maintenance / installation personnel used.
- Subsequent increase in air consumption without relation to dryer flow capacity.
- Purging of pneumatic system and dryer with cleaning agents that have the potential to damage desiccant material.
- Covers removed or loose during operation.
- Cartridges and filter / autodrain not changed when red LED is illuminated. LED failure.



**DECLARATION OF CONFORMITY  
98/37/EC (1992 - SI3073)**

**GB**

Name of manufacturer or supplier:  
**domnick hunter ltd.**

Full postal address including country of origin  
**Dukesway, TVTE, Gateshead, Tyne & Wear  
England**

Place of issue : **Gateshead**

Description of product : **DESICCANT AIR DRYER**

Name, type or model, batch or serial number  
**DAS 1, DAS 2, DAS 3, DAS 4 - Complies with Article 3: section 3.3 of 97/23/EC  
DAS 5, DAS 6, DAS7 - Module A of 97/23/EC**

Directives used

**98/37/EC, 89/336/EEC, 73/23/EEC, 93/68/EEC, 92/31/EEC, 97/23/EC (as above)**

Standards used, including number, title, issue date and other related documents

**Generally in accordance with ASMEVIII div 1 : 1995**

**up to and including 1996 addenda**

**EN292-1:1991 & EN292-2:1991, EN50081-2:1994, EN50081-1:1992, EN50082-1:1998 &  
EN50082-2:1995, EN61010-1:1993.**

Name of authorised representative  
**A.Bishop**

Position of authorised representative  
**Quality Manager - Industrial**

Full postal address if different from above  
**AS ABOVE**

**Declaration**

I declare that as the authorised representative, the above information in relation to the supply /  
manufacture of this product, is in conformity with the standards and other related documents  
following the provisions of the above Directives

Signature of authorised representative

