



Manual for Vapac Compact D OEM

Assemblies with Vapac controllers

1150575 On/Off E range (220/240V control circuit)

or

1150584 On/Off L Range (24V control circuit)

or

1150580 Varivap (24V control circuit)

or

1150601 Microvap (24V control circuit)

Vapac Humidity Control Limited reserve the right to change the design or specification of the equipment described in this manual without prior notice.

Vapac equipment is manufactured in England by:
Vapac Humidity Control Ltd., Edenbridge, Kent, TN8 6EZ

Vapac Compact D OEM Assembly

Standard Compact D Electrical Control Unit

The Compact D electrical unit is mounted on the back support of the steam cylinder assembly. The unit is secured by two screws in keyhole slots. To access the inside of the electrical unit, disconnect/isolate the power supply, loosen the two screws a few turns and then manipulate the housing out of the keyhole slots to free it.

The Standard Compact D Electrical Unit comprises:

Outer housing with double pole switch on it with positions Run / Off / Manual Drain.

Vapac On/Off Controller PCB
 - 24V for L version OEM
 - 220/240V for E version OEM

Current Transformer

Level Sense Isolator PCB - L version OEM only

Control Circuit Fuse - size 20mm x Ø 5mm

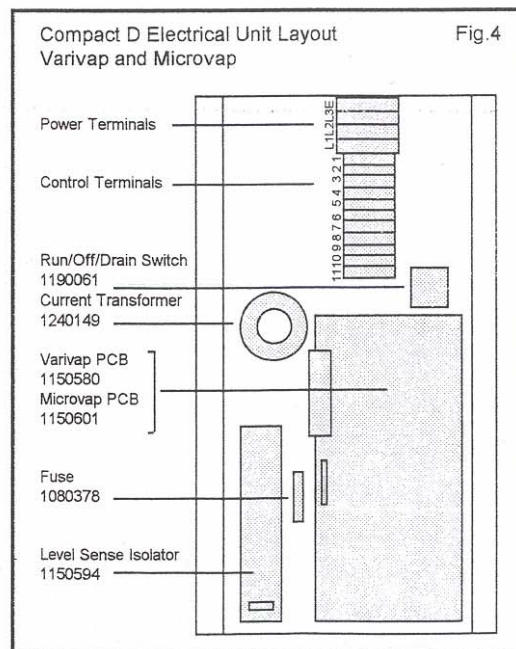
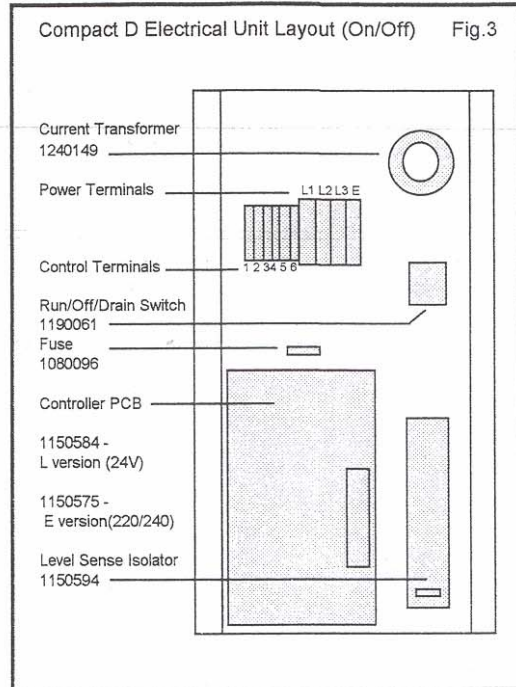
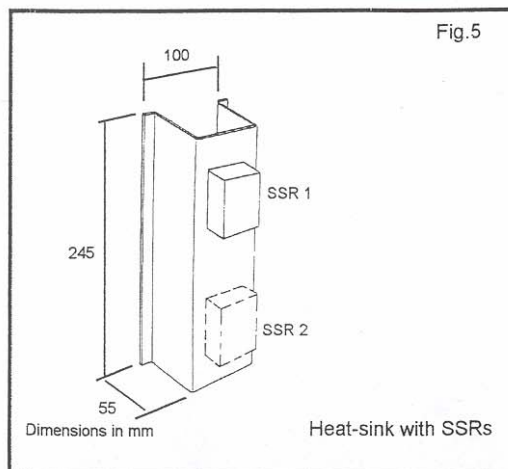
Power Terminals and Electrode Cables / Caps for 3 electrode steam cylinder. Terminal L3 and its electrode cable to be removed if 2 electrode cylinder is used.

Control Terminals

L version OEM connected as wiring diagram LZD277
 E version OEM connected as wiring diagram LZD283

Alternative Compact D electrical unit

An OEM Compact D electrical unit with the Vapac Series IV Varivap PCB 1150580 or the Microvap 1150601 PCB has a slightly different layout (see Fig.4) to accommodate the additional control terminals required to provide connections for switching an external contactor and SSR(s) mounted separately (see Fig.5) for the Varivap system of control. Both versions connected as wiring diagrams LZD 368/C and LZD 369/B (**important:** the 24V a.c. supply must be completely independent of any other equipment).



Vapac Compact D OEM Assembly



Steam Cylinder Assembly

The Standard Compact D OEM comprises a steam cylinder assembly with an electrical control unit mounted on the back of the steam cylinder support as indicated in Fig.1 and Fig.2.

Standard Compact D OEM Steam Cylinder assembly comprises:

Folded stove enamelled back- and base- support with bracket (L shaped) to hold cylinder steady. Standard assembly has feed and drain through the back support.

Size 1 assembly has:-

Tundish fill-cup in lowest position (suits CM1 cylinder only)
Feed/Drain manifold 'back' (suits CM1, CM1/2 and CM2)

Size 2 assembly has:-

Tundish fill-cup on extension plate (suits CM2 and CM3)
Feed/Drain manifold 'forward' (essential for CM3 cylinder).

Note:

In the standard Compact D OEM the base is not sealed as it carries holes for alternative positions of components.

Feed/Drain Manifold (Pt.No. M990305) providing 3 connection ports each sized \varnothing 22mm with O-ring seals.

Drain Pump with \varnothing 22mm inlet and \varnothing 13mm outlet.

Pt.No.2600061 - Pump 24V 50/60Hz (OEM L)

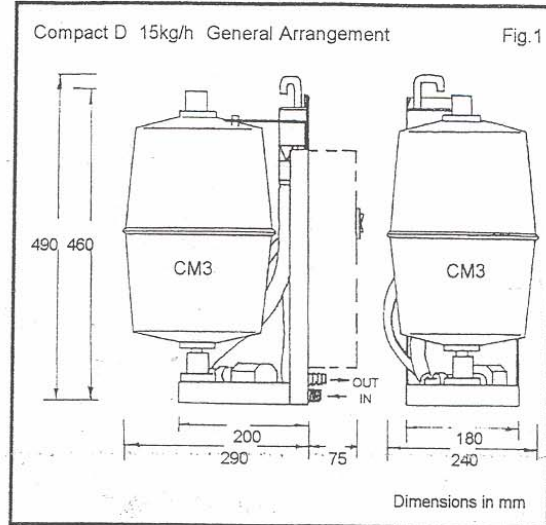
Pt.No.2600060 - Pump 220/240V 50Hz (OEM E)

Pt.No.2600059 - Pump 220V 60Hz (non-standard OEM)

Feed Solenoid Valve with inlet $\frac{1}{4}$ thread, outlet \varnothing 10mm.

Pt.No.2620320 - Valve 24V 50/60Hz (OEM L)

Pt.No.2620300 - Valve 220/240V 50/60Hz (OEM E)



Variations to standard Compact D OEM Size 1 and Size 2 steam section designs

Tundish mounting:

Size 1 with tundish in middle position to suit CM1/2.

Size 1 with tundish plate mounted to suit CM2.

Feed and Drain connections from below.

Cylinder Options:

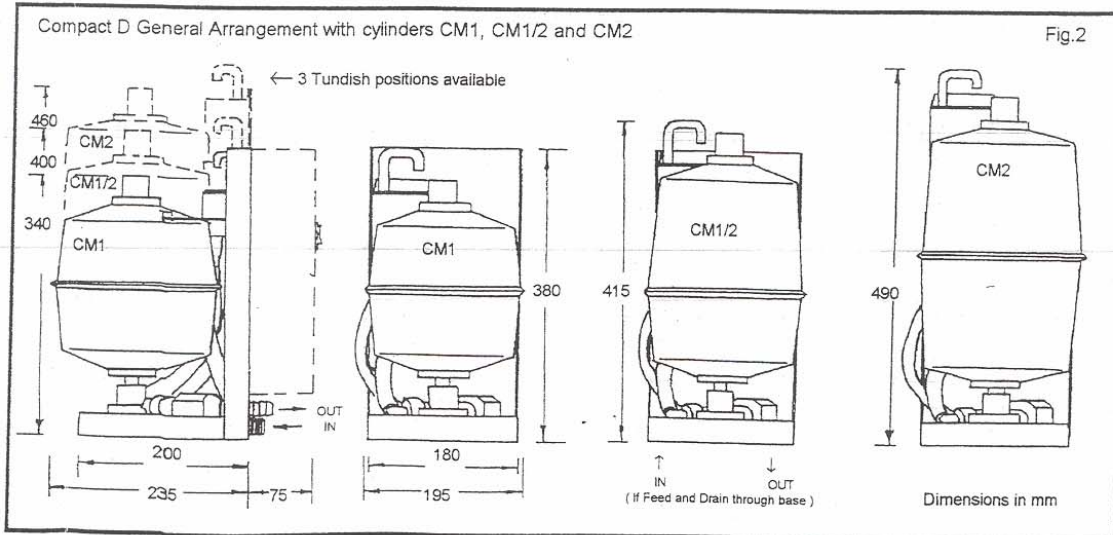
Steam Outlet from steam cylinder:

\varnothing 22mm - cylinder codes end with 'O'.

\varnothing 35mm - cylinder codes end with 'A'.

Single or Two phase connection

With CM1, CM1/2 and CM2 size cylinders only.



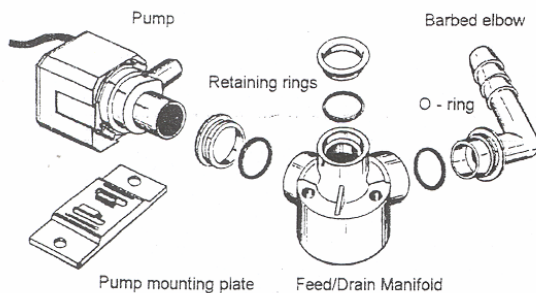
Cylinder Exchange

Cylinder Life

The water hardness and the humidity demand at site will determine the effective life of a steam cylinder. Units located in areas with naturally soft waters will experience the longer cylinder life, possibly upwards of 12 months in calendar terms. With hard waters, a more frequent cylinder exchange must be expected and cylinder exchange 2 or 3 times a year can be the average situation. The normal scaling up of the Vapac steam cylinder is outside the Vapac warranty.

Procedure for Cylinder Exchange

1. With power connected to the unit, use the Manual Drain switch to empty the steam cylinder.
2. Disconnect the Vapac from the electrical supply by means of the external disconnect switch.
3. Carefully ease off the red electrode caps and the white electrode cap.
4. Loosen the hose clip and disconnect the hose from the top of the steam cylinder.
5. Using a twisting movement, lift the cylinder clear of its seating in the feed/drain manifold and carefully remove the used cylinder from the unit.
6. Inspect the feed/drain manifold to ensure this is clear of sediment.
7. The small drain pump can be removed for inspection/cleaning, by applying steady hand pressure on its inlet housing to ease it back on its mounting and to release it from its 'O' ring connection in the side of the feed/drain manifold. The diagram shows the assembly arrangement of the feed/drain manifold and pump. The pump motor body is a sliding fit onto its mounting plate.



8. With the pump back in position after cleaning, insert the cylinder into the feed/drain manifold, pushing it down firmly, and reconnect the steam hose.
9. The electrode caps must be reconnected in accordance with the details on the collar supplied with the new cylinder.

Service and Maintenance

Where the Vapac is part of an air-conditioning system being serviced regularly, the Vapac should be inspected at the same time.

Steam and Condensate Hoses

The hoses used with the Vapac should be inspected at the normal service visits as part of normal maintenance. At the first signs of deterioration, a hose should be removed and replaced.

Vapac®

Feed Valve with Strainer

The nylon bodied solenoid valve incorporates a small nylon strainer which is a push fit in the 3/4" inlet of the valve. With a new plumbing installation, loose solid material in the pipework could partially block the strainer after start-up. If for this or any other reason a restriction of the water flow is suspected (outside of supply pressure considerations), it would be possible to clean the strainer as follows:-

Turn off the water supply to the Unit.

Undo the nylon nut connecting the flexible water connection to the valve inlet.

The strainer can be removed using 'long-nosed' pliers to grip the centre flange provided on the strainer for this purpose.

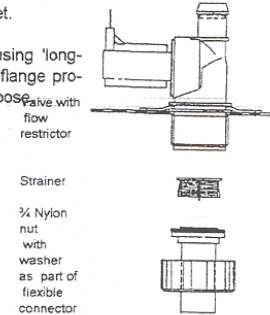
Withdraw the strainer.

Wash and replace it.

Reconnect Pipework.

Turn on water supply.

Reconnect electrical supply to allow unit to operate



Note:

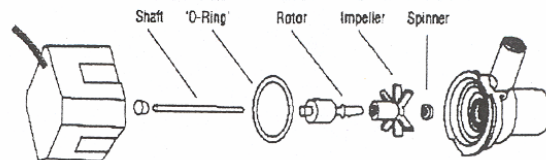
Always replace the strainer after cleaning as it is needed to prevent material lodging in the valve seat or blocking the small flow control restrictor which is fitted in the valve.

Drain Pump

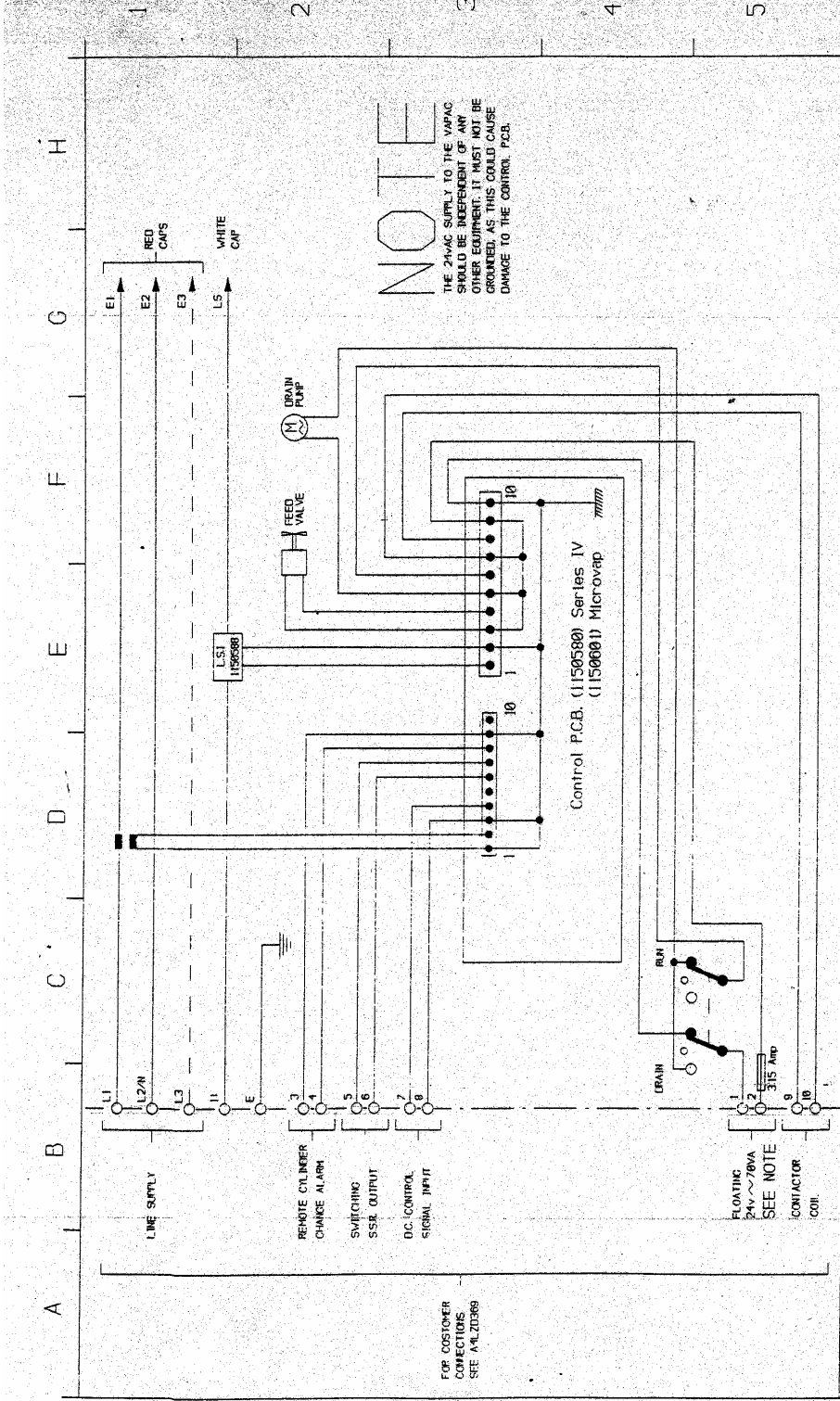
The pump should be inspected and cleaned regularly. It is recommended that this be done at each cylinder exchange especially in hard water areas. Failure to keep the pump clear and operational will result in reduced cylinder life.

To remove the pump for maintenance purposes proceed as follows:

- a. Depress and hold the manual drain switch to empty the cylinder. The pump 'sound' changes distinctly once the cylinder is empty. When this occurs release the switch.
- b. Disconnect unit electrical supply and follow the cylinder exchange procedure.
- c. If, due to an electrical or mechanical fault, the cylinder cannot be emptied by the pump, it will be possible to drain most of the water into a bucket by disconnecting and lowering the top end of the tube which feeds cold water to the cylinder from the fill-cup. The remaining cold water will run into the base tray when the pump is withdrawn from its 'O' ring connection and/or the cylinder is lifted out.
- d. Ease the pump free of the feed/drain manifold 'O' ring connection, slide it fully off its base plate and release the connecting tube.
- e. To dismantle and re-assemble pump refer to diagram below.



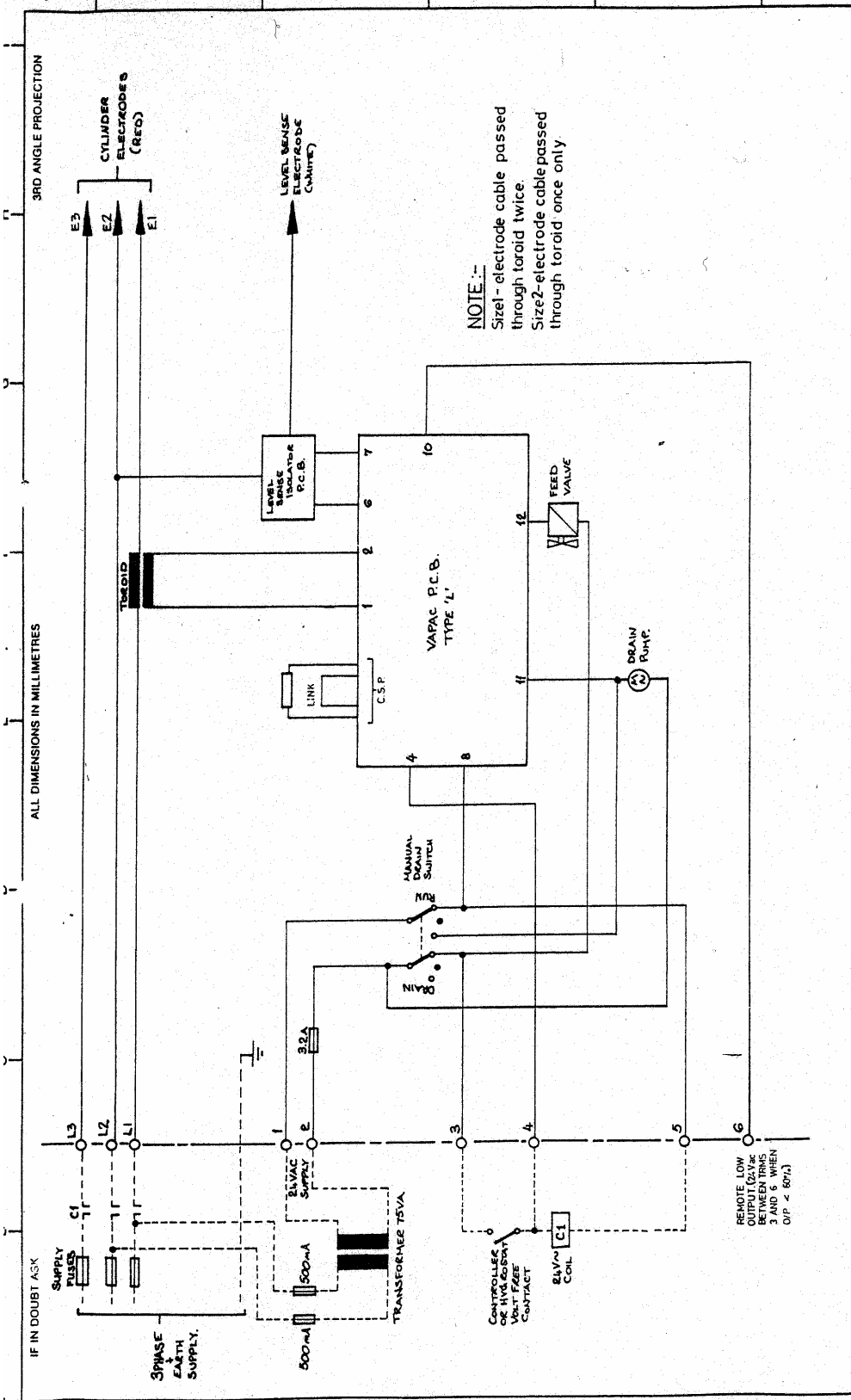
- f. In operation the stainless steel shaft remains stationary while the rotor and impeller rotate on it. Remove all scale build-up on the shaft so that the impeller can rotate freely.
- g. Ensure that the 'O' ring seal is correctly positioned when fitting the inlet housing to the main pump motor body. **When re-assembling, make sure the brass spinner is replaced on the shaft in front of the impeller.** A smear of multipurpose grease should be applied to the 'O' ring so that the impeller housing can be rotated into position without distorting the 'O' ring underneath it and so maintain the water seal.



NOTE
 THE 24VAC SUPPLY TO THE VAPAC SHOULD BE INDEPENDENT OF ANY OTHER EQUIPMENT. IT MUST NOT BE GROUNDLED AS THIS COULD CAUSE DAMAGE TO THE CONTROL PCB.

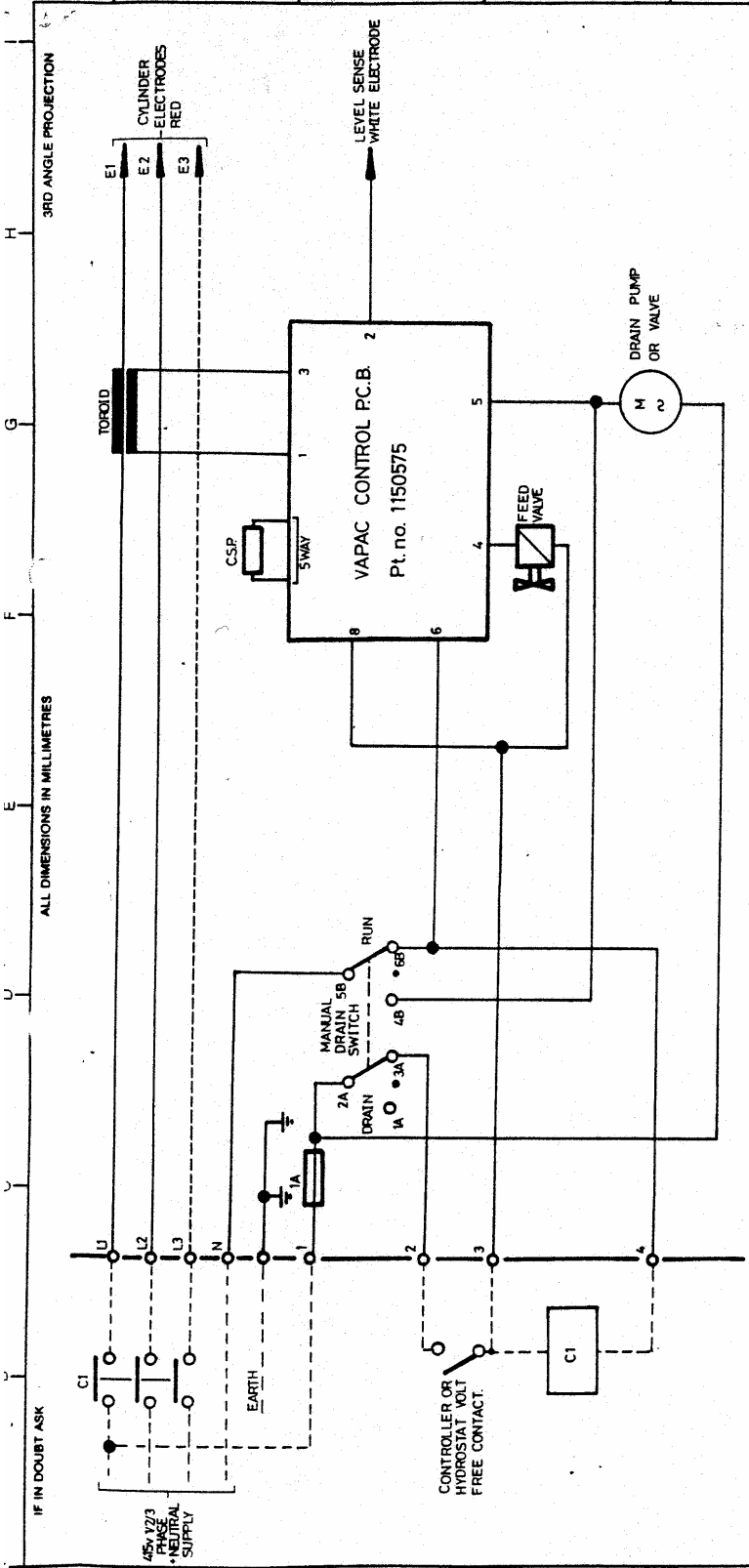
FOR CUSTOMER CONNECTIONS SEE A-1120369

Vapac VAPAC HUMIDITY CONTROL LTD FIRGROFT WAY, EDEBRIDGE, KENT, TN6 6EZ, ENGLAND Tel 07321 863447		SERIES IV PROPORTIONAL OEM AND MICROVAP PROPORTIONAL OEM		DATE: 2/10/91	TITLE WIRING DIAGRAM (OEM)	
		REVISIONS C B A	REVISIONS 24/1/91 PFD 10/1/91 RPT. 10/1/91 RPT.	SCALE: N.T.S. DRAWN: R.P.T. CHECKED:	Drg No. A3LZD368/C	



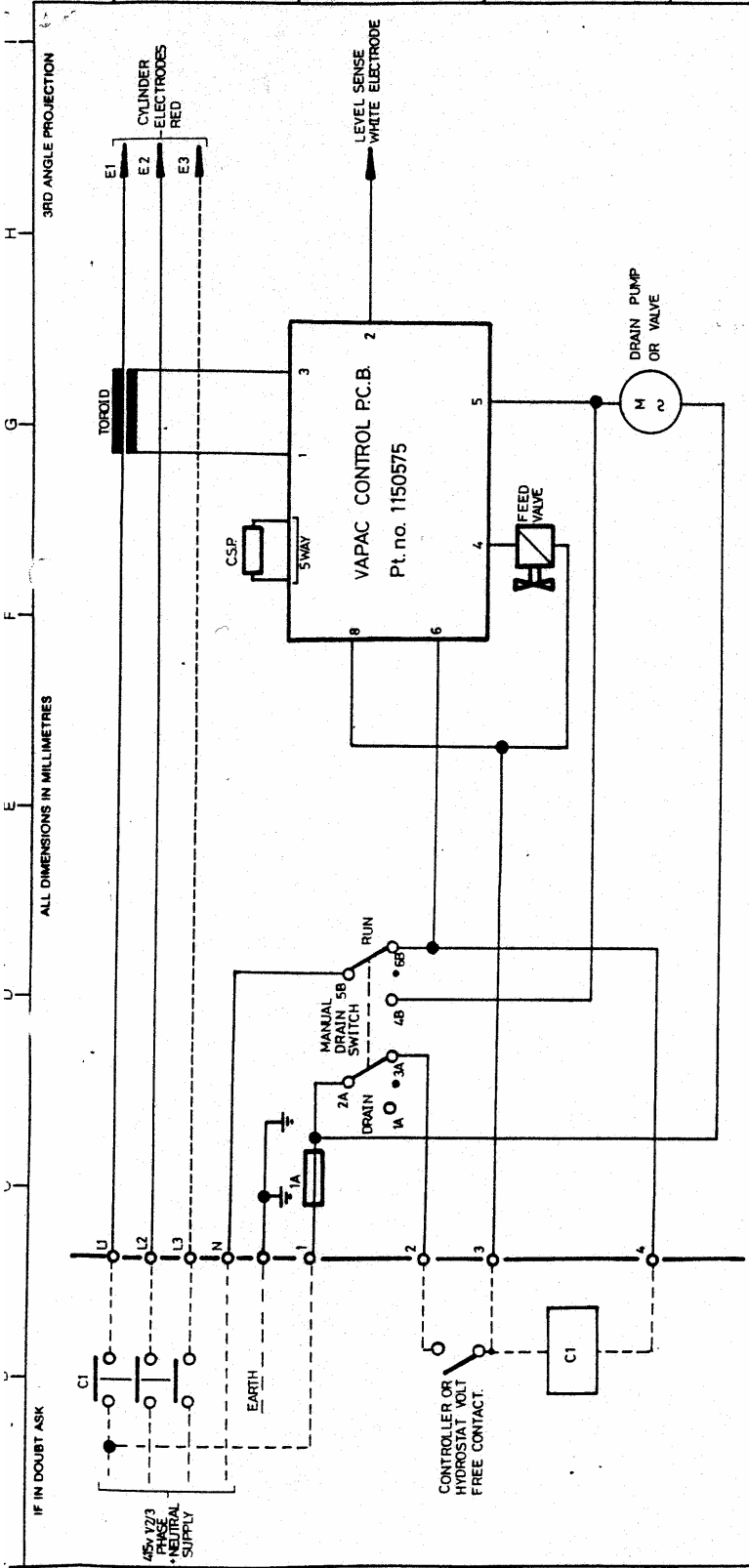
IF IN DOUBT ASK		ALL DIMENSIONS IN MILLIMETRES		3RD ANGLE PROJECTION	
D	LINK ADDED TO C.S.P. NOTE ADDED ADJACENT TO TRM 6	2604-91	R.P.T.	TITLE WIRING DIAGRAM	
C	POSITIONS FOR L1 & L2 TERMINALS REVERSED, E1, E2, & E3 ADDED	10-8-76	J.D.	O.E.M. COMPACT "D"	
B	NOTES	8/16/80	P.S.	SCALE —	
A	DRAIN VALVE DELAYED BY PUMP	20-2-90	R.C.	DATE 07-02-89	
ISSUE	MODIFICATION	DATE	DRAWN/CHECKED	DRAWN R.P.T.	
				CHECKED —	
			MODEL O.E.M. COMPACT "D" "L" RANGE.		
			SCALE —		
			DATE 07-02-89		
			DRAWN R.P.T.		
			CHECKED —		
			Vapac®		
			VAPAC HUMIDITY CONTROL LTD		
			EDENBRIDGE,		
			KENT, ENGLAND		
			DRG. No. A3LZD277/D		

NET OFFPRINTS P08 P1N1



NOTE
 If single phase operation terminal "L2" should be linked to (and also labeled) terminal "N".

IF IN DOUBT ASK		ALL DIMENSIONS IN MILLIMETRES		3RD ANGLE PROJECTION	
45V VZ/3 TRANSFORMER + NEUTRAL SUPPLY		C1		E1 E2 E3 CYLINDER ELECTRODES RED	
EARTH		MANUAL DRAIN SWITCH 5B		TORROID	
1A		2A		3	
3A		4B		5	
6B		RUN		VAPAC CONTROL P.C.B. 2 Pt. no. 1150575	
CONTROLLER OR HYDROSTAT VOLT FREE CONTACT		C1		8	
C1		1		4	
2		3		6	
3		4		FEED VALVE	
4		5		DRAIN PUMP OR VALVE	
5		6		M	
6		7		8	
7		8		TITLE	
8		9		O.E.M. WIRING DIAGRAM.	
9		10		SCALE	
10		11		DATE 5.5.89	
11		12		DRAWN R.P.T.	
12		13		CHECKED	
13		14		MODEL	
14		15		O.E.M. COMPACT "D"	
15		16		"E" RANGE	
16		17		Vapac	
17		18		VAPAC HUMIDITY CONTROL LTD	
18		19		EDENBRIDGE	
19		20		KENT, ENGLAND.	
20		21		DRG. No. A3LZD283 A	
21		22		ISSUE	
22		23		MODIFICATION	
23		24		DATE	
24		25		DRAWN	
25		26		CHECKED	
26		27		5.11.91	
27		28		R.P.T.	
28		29		DATE	
29		30		DRAWN	
30		31		CHECKED	
31		32		R.P.T.	
32		33		DATE	
33		34		DRAWN	
34		35		CHECKED	
35		36		5.11.91	
36		37		R.P.T.	
37		38		DATE	
38		39		DRAWN	
39		40		CHECKED	
40		41		R.P.T.	
41		42		DATE	
42		43		DRAWN	
43		44		CHECKED	
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45		46		R.P.T.	
46		47		DATE	
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50		51		DATE	
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52		53		CHECKED	
53		54		5.11.91	
54		55		R.P.T.	
55		56		DATE	
56		57		DRAWN	
57		58		CHECKED	
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59		60		DATE	
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61		62		CHECKED	
62		63		5.11.91	
63		64		R.P.T.	
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67		68		R.P.T.	
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77		78		DATE	
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82		83		DATE	
83		84		DRAWN	
84		85		CHECKED	
85		86		R.P.T.	
86		87		DATE	
87		88		DRAWN	
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96		97		DRAWN	
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99		100		R.P.T.	
100		101		DATE	
101		102		DRAWN	
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104		105		DATE	
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123		124		DRAWN	
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132		133		DRAWN	
133		134		CHECKED	
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144		145		R.P.T.	
145		146		DATE	
146		147		DRAWN	
147		148		CHECKED	
148		149		R.P.T.	
149		150		DATE	
150		151		DRAWN	
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154		155		DATE	
155		156		DRAWN	
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158		159		DATE	
159		160		DRAWN	
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241		242		CHECKED	
242					



IF IN DOUBT ASK

ALL DIMENSIONS IN MILLIMETRES

3RD ANGLE PROJECTION

NOTE
If single phase operation terminal "L2" should be linked to (and also labeled) terminal "N".

SCALE		DATE 5.5.89		DRAWN R.P.I.		CHECKED	
MODEL O.E.M. COMPACT "D" "E" RANGE				TITLE O.E.M. WIRING DIAGRAM.			
Vapac® VAPAC HUMIDITY CONTROL LTD EDENBRIDGE KENT, ENGLAND.				DRG. No. A3LZD283 A			
A Single phase options added		5.1191		R.P.I.			
ISSUE MODIFICATION		DATE		DRAWN		CHECKED	