





#### **HEAD OFFICE**

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# Component Change WHE3 Diver Hotwater Heater

During 2010 the main switchgear components in the WHE-3 electrical control panel were changed during a rationalisation exercise. These components, mainly circuit breakers and contactors, were from different suppliers and were changed to equivalent components from a single supplier. Although these components are designed for this task and operate correctly, there have been two separate instances where, during extended periods of maximum heater utilisation, the contactors have remained on after being switched off. Once the contactors have cooled sufficiently they disengage normally and no fault can be detected in the system or the contactors. Effectively this means that power can still be supplied to heater elements, even after all heater banks have been switched off and it is considered unsafe to operate the machine in this condition.

## **Technical Background**

GLOBAL LOCATIONS Aberdeen Chertsey

Bremen
Dubai
Cape Town
Perth

Sydney

To eliminate any possibility of personal harm or damage to these machines Divex has provided a kit of replacement electrical components and we recommend that these are used to replace the existing components in the WHE-3 panels as soon as possible. Included with the kit of replacement components is a recommended replacement guideline and it is recommended that only suitably qualified technicians are used to undertake the replacement exercise.

#### **Technical Advice**

The purpose of this change is to replace all WEG contactors and WEG circuit breakers within the WHE-3 electrical cabinet.

The parts kit supplied should contain:

DO04818 Breaker, Circuit, Mini, 3-PH 50A 10KA (5off)

**DO04924** Surge Suppressor (DIODE) BF50-BF110 Contactors (10off)

DO02880 Circuit Breaker, Miniature, 3 Pole, 20A 10KA (1off)

**DO02904** Relay Thermal Overload 3 Pole 9.00A-14.0A, 5.5KW (1off)

**D004836** Contactor, 12.5KW, 40A, 3 Pole, DC (9off)

**DO04005** Breaker, Circuit, Mini, 3 Pole, 32A, 10KA (4off)

DO03905 Contactor, 7.7KW, 3 Pole, 24VDC Coil (1off)

Panel layout should be as per excerpt from drawing 05793-0 (Figure 1).

Ensure Power Supply to WHE-3 has been properly isolated and locked off with P.T.W. in place.



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### **Corrective Action**

Clients are advised to replace the following components (in conjunction with figure 1):

MCB1 for a DO02880 (Hager 20A 3-pole circuit breaker)

MCB2, MCB3, MCB4 and MCB6 for a DO04005 (Hager 32A 3-pole circuit breaker)
MCB 5, MCB7, MCB8, MCB9 and MCB10 for a DO04818 (Hager 50A 3-pole circuit breaker)

C1 for a DO03905 (Lovato 7.7KW 3 pole contactor) including

**O/L1** for a DO02904 (Thermal Overload)

**D1** for a DO04924 (Surge Suppressor)

**C2**, **C3**, **C4**, **C5**, **C6**, **C7**, **C8**, **C9**, **C10** for a DO04836 (Lovato 12.5KW 3 pole contactor) including a DO04924 (Surge Suppressor)

Ensure all terminals are secure.

Perform Continuity and Insulation Resistance tests on all cables (ref drawings 05793-1 and 05793-2) before restoring power and performing function test.

WHE3/142/10

## **Serial Numbers Affected**

WHE3/126/09

The following WHE-3 serial numbers are affected:

W	/HE3/127/09	WHE3/143/10
W	/HE3/131/09	WHE3/144/10
W	/HE3/132/10	WHE3/145/10
V	/HE3/133/10	WHE3/146/11
V	/HE3/134/10	WHE3/147/11
V	/HE3/135/10	WHE3/148/11
V	/HE3/136/10	WHE3/149/11
W	/HE3/137/10	WHE3/150/11
V	/HE3/138/10	WHE3/151/11
W	/HE3/139/10	WHE3/152/11
W	/HE3/140/10	WHE3/153/11
W	/HE3/141/10	

#### **Action to Prevent Recurrence**

Divex has carried out a design review and all parts listed above have been re-instated to ensure no further potential problems of this nature are experienced.

Signed:

Kevin Smith General Manager - QHSE for and on behalf of Divex Ltd.





Date: 27/07/12





#### 0000 POWER SUPPLY S 0 0 0 MAIN ISOLATOR 0 0 0 0 0 9 9 **BUSBAR-L1 BUSBAR-L2 BUSBAR-L3** 0 0 0 0 02 CONTACTOR 0 0 WI F3 2 $\overline{c}$ MI L2 CIRCUIT BREAKER Ø3 0 00 IT IM **©**2 0 CONTACTOR 0 H2.3 L3 & H5.4 L3 5 5 0 0= 0 H5.3 L2 & H5.4 L2 0 CIRCUIT BREWER 11 4.3 L1 & H5.4 L1 **©**3 0 0 MCB8 CONTACTOR 0 0 H2.1 L3 & H5.2 L3 0 **©**2 පි 0 පු 0 0 CIRCUIT BREAKER **©**3 CONTACTOR 0 0 0 8 0 02 0 ဗ 0 0 0 Ø2 0 CONTACTOR CIRCUIT BREAKER **©**3 0 MCB6 2 0 72 **©**2 0 0 0 0000 **©**5 0 0 H3'3 F3-000 **©**3 0 8 ප H3.3 L2-Ø2 0 -17 E.EH 00 CONTACTOR H3.1 L3 & H3.2 L3 05 0 2 0 S CIRCUIT BREAKER ©2 0 0 ©2 0 00 CONTACTOR 0 H2.2.L3 05 0 7 2 CIRCUIT BREAKER **©**3 0 00 0 H2.2 L1 Ø2 0 000000 CONTACTOR 0 H2.1 L3 ജ $\mathbb{S}$ Ø5 H2.1 L2 00000 H2.1 L1 $\overline{\Box}$ ©2 CIRCUIT BREAKER 0 ©2 CONTACTOR 0 H1.1 L3 2 $\aleph$ - - - 21 I.1H - - - 17111

PANEL LAYOUT



