Installation and set-up procedure

The CSL Chillboost is a programmable timer-based device to optimise your current chiller system. It "fools" the existing chiller thermostat into starting the chiller by inserting a timed shunt that effectively tells the chiller thermostat that the milk is 1.8'C approx. warmer than it actually is just for the duration of the Chillboost preset timed sequence (this is when the little orange light is turned on in the Chillboost). This is generally set for 45 minutes prior to starting milking and continues 45 minutes into the milking, this has the effect of reducing the blend temperature by 2 to 3 degrees.

For best results set the existing vat thermostat to turn on at 6.0'C and switch off at 4.0'C.

Although the system has the ability to have up to sixteen individual timer settings, we recommend only setting for your individual requirement, for example if on day milk pick-up, just set timer #1 "ON" for 45 minutes before your usual cups on time and "OFF" for 45 minutes after cups on in the mornings only. Although the Chillboost timer continues to turn on and off at other times (when no milk in the vat) it has no effect if the chiller is turned off.

Actual milk temperature at cups on time will vary according to chiller efficiency – set for an earlier start if you need the milk in the vat colder prior to starting milking. The 1.8'C shift means the milk can never go below 2.2"C so there is no risk of freezing the milk provided it is being stirred.

If you wish to check the temperature at milking time, do so by repeat pressing the "MAN" button and moving the little cursor at the bottom of the LCD screen to "OFF" so the chiller thermostat shows actual milk temperature. Remember to move this cursor back to "AUTO" for normal operation. Do not leave the cursor in the "ON" position as the temperature in the vat will be constantly 1.8'C below what is showing on the chiller thermostat!!

Below are the default settings – these are based on the most common milking times of 5.00am cups on in the morning and 3.30pm cups on in the afternoons (note that these settings will be one hour different during daylight saving):

First timer		Second timer	
On at 4.15am	Off at 5.45am	On at 14.45	Off at 16.15

Mounting - The Unit is designed to be mounted in or on the existing vat stand control box or near the refrigeration controller, the box is rated IP66 and can be installed either inside or outside the chiller control cabinet.

Wiring - The Chillboost suits both common refrigeration temperature probes (PT 1000 and 10k thermistor)

WARNING The chiller control sensor or controller could be damaged by connecting the Chillboost up incorrectly - if the chiller temperature controller shows an error code turn off immediately and check.

Determine the sensor type before connection to ensure correct operation, simply measure the resistance of the existing probe when it is disconnected from the controller. A PT 1000 sensor is approximately 1000 ohms and a thermocouple is between 10 to 20k ohms depending on vat temperature. The enclosed wiring diagram shows connections for each type. If you come across another type of sensor please phone for support, you may need a custom Chillboost controller.

NOTE: Wire the Chillboost supply **permanently live** to the existing Refrigeration Control 230v supply switch to keep the Chillboost internal battery charged over winter months.

Timer setup and adjustment:

To reset the timer – press the small black button to the right of the "MAN" button using a pen or similar.

Before you can adjust any of the timer settings the time will need to be adjusted, to adjust the time press and hold the "CLOCK" button then press the "DAY" "HOUR" "MIN" as desired. You can also press and hold the "CLOCK" to set 24 or 12 hour clock mode.

To set the timer up to suit your alternative milking times:

Press the "TIMER" key on the display and the timer will show:

1on   __:__

Press the "DAY" key to select the timer mode of daily programs

Press the "HOUR" or "DAY" keys to set the desired "ON" time EG:

Mo Tu Th Fr Sa Su
1off   3:00

After complete press the "TIMER" key to adjust the "OFF" time EG.

1off   __:__

Press the "DAY" key to select the timer mode of daily programs.

Press the "HOUR" or "DAY" keys to set the desired "OFF" time EG.

Mo Tu Th Fr Sa Su
1off   3:10

Repeat above procedure for alternate timings for timer 2, 3 etc… "Off" and "ON" times.

Press the clock button to store the adjusted timer programs.

You can now review the timer setup if you keep pressing the "TIMER" key when the unit is showing the current time.

Advanced controller temperature controller setup (EVCO 6221). (Used to replace mechanical thermostats)

Press "**UP**" and "**DN**" simultaneously for 4 seconds   (the display will show **PA**)
Press "**SET**" to allow entry of the password
Using the "**UP**" and/or "**DN**" alter the display to show -19
Press "**UP**" and "**DN**" simultaneously for 4 seconds to continue   (the display will show **SP**)
using the "**UP**" and "**DN**" select the parameter you wish to edit.
press the "**SET**" keys to allow editing
use "**UP**" and "**DN**" to alter the value
press the "**SET**" keys to store the parameter.
Basic parameters:
"**SP**" setpoint
"**PO**" 0=PTC 1=NTC
"**P2**" 0=degC
"**P3**" 0=no evaporator
"**R0**" differential setpoint = 2deg
"**R1**" minimum value of setpoint = 2.5deg
"**R2**" minimum value of setpoint = 6deg
"**D0**" defrost interval 0= off
"**D3**" defrost duration 0= off
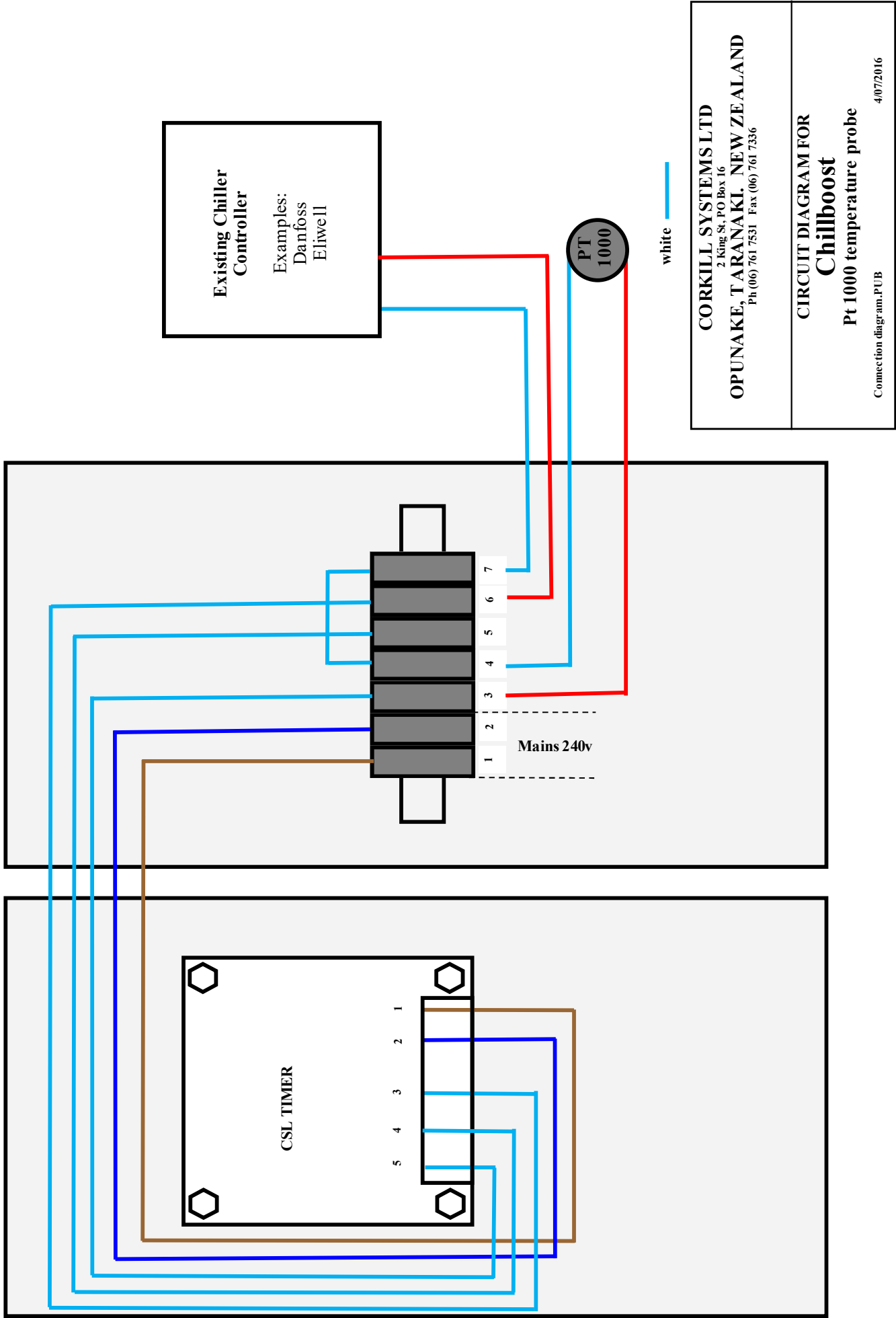"**D3**" defrost on power up 0= off
"**D4**" defrost on power up 0= off
Problems

Any problem please phone us on (06) 761 7531 – this is a 24 hour service number or go to our website
www.corkillsystems.co.nz

Existing Chiller
Controller

Examples:
Danfoss
Eliwell

PT
1000

white ▬▬▬

CORKILL SYSTEMS LTD
2 King St, PO Box 16
OPUNAKE, TARANAKI. NEW ZEALAND
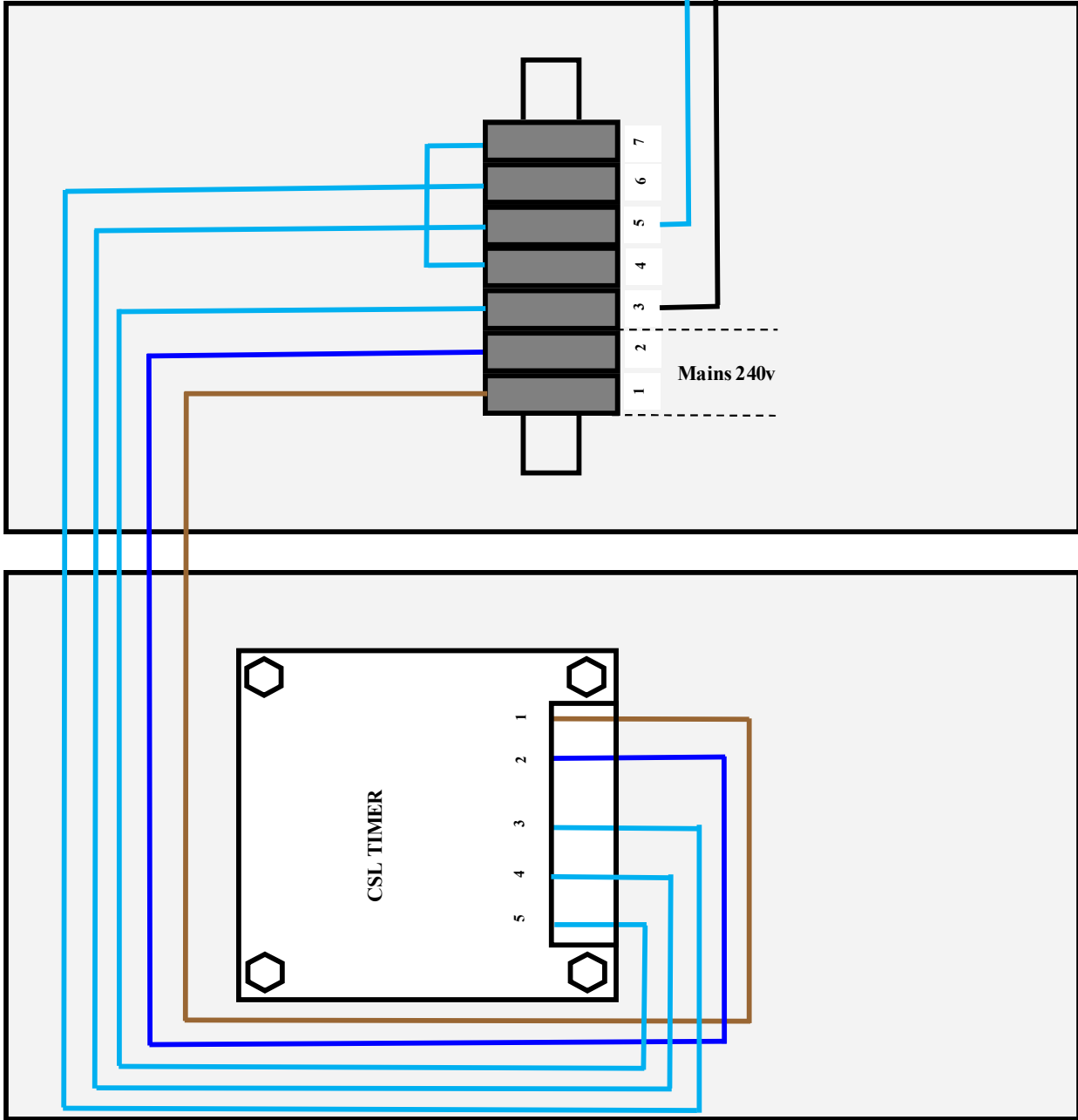Ph (06) 761 7531   Fax (06) 761 7336

CIRCUIT DIAGRAM FOR
Chillboost
Pt 1000 temperature probe

Connection diagram.PUB   4/07/2016

7
6
5
4
3
2
1

Mains 240v

CSL TIMER

1
2
3
4
5

Existing Chiller Controller

Examples:
Dixell XR202C
Carrell IR33
Milk Minder

10k Thermistor

white

Mains 240v

1 2 3 4 5 6 7

CSL TIMER

1 2 3 4 5