



SHADES  
TECHNICS

## P6 SPARE PARTS MANUAL

Tel: +44(0)1992 476830 | *Cat No. – Issue 1 01/05/2011*

# Contents

<b>TITLE</b>	<b>PAGE</b>
Cubicle Operating Instructions	3
Cleaning & Hygiene	6
Daily Maintenance	7
Weekly Maintenance	8
Quarterly Maintenance	8
Winterization	9
Jump Starting	9
Fault Reporting	9
Warranty Claim Procedure	10
Cubicle Spares	11
Electrical Spares	14
Tanks – Pumps - Boiler	15
Plumbing	16
Door Furniture	18
Valves	19
Worktop	20
Fridge & Cubicle Upper	21
Stickers	22
PCB Overview	23
PCB Schematic	24
Cubicle Wiring	25
Service Instructions	26

## Cubicle Operating Instructions


### Switching the cubicle 'ON'

Engage the WC master switch on the dashboard. The cubicle interior lamps will turn on for 60 seconds and then switch off. The cubicle is now ready to use. *(It is recommended that the vehicle engine is running to protect the batteries).*


### Interior Light

A blue LED night (optional) light above the sink will work when power is switched to the cubicle and upon entry the 2 main spot lamps will illuminate automatically. The interior lamp is controlled by a movement sensor which will switch off the light shortly after the cubicle is vacated.


### To Flush The Toilet:

Push the flush button  once to flush the toilet with a set quantity of water. Should a further flush be required, wait for the flush cycle to complete then press the button again. NOTE:

*(When the soil tank is full, the dashboard LED  will illuminate and the "Occupied" lamp will signal. The toilet is now out of use until the soil tank is emptied.*

*(When the clean water tank is empty the dashboard LED  will illuminate and the "Occupied" lamp will signal. The toilet is now out of use until the water tank is re-filled.)*

### To Wash Your Hands

Depress the handwash button once to dispense a set amount of water. 

*(When the hand wash tank is empty the dashboard LED  will illuminate to alert the driver)*

### Cubicle Extractor Fan

The ventilator fan runs continuously when the master switch is ON but has the option to only work when the light is activated. A pair of cables close to the fan connector can be swapped over to provide the alternative option.

### Water Tank Filling & Emptying

Tanks are filled via the hose connectors located in the side locker or boot. Each tank also has its own drain for cleaning or winterization.

## Cubicle Operating Instructions

### Soil Tank Emptying

The evacuation valve on the soil tank is either controlled pneumatically or manually. If the manual option is fitted a pull handle can be found underneath the coach or underneath the toilet inside the locker. If a pneumatic system is installed a button the dashboard or on the front wall of the cubicle will activate the valve. In some cases a push-pull knob is used but this is also located inside the locker. The knob must be pushed back in to close the valve when finished.

### Smoke Alarm

The smoke alarm is mounted in the ceiling panel of the toilet and is powered via the main toilet control board and not a battery, in most cases. It may also be connected to a light on the dashboard which illuminates should the smoke alarm be activated. To reset the alarm, push the RED button on the unit.

### In Case of Emergency

Depressing the RED alarm button inside the cubicle will alert the driver.

### To Operate the Hand-Drier: (Optional Fit)

To start the unit, push the button on the front or the remote push button (plunger) when the unit is concealed behind a vanity door. The unit stops automatically.

### Coolbox

Where fitted, Shades use a range of Thermo-electric (non Gas) cooling plants ranging from 80W to 140W of power. Fitted to either a centre toilet or rear galley kitchen these units are designed to keep drinks and snacks cool at about 3-5Deg C.

Powered directly from the cubicles PCB the units require a full +24 volts to kick start them but can run in ECO mode when power is switched off. ECO mode will help maintain a cool temperature until the low voltage detection switches the unit off completely to protect the batteries from fully discharging.

### **NOTE:**

The ventilation grilles for the cabinets must be kept clear from dust & blockages as this will affect the unit's performance.

To maximize the performance of the coolbox it is recommended that canned drinks and any food are pre-chilled prior to loading. Loading the cabinet with un-chilled products will affect the cooling time, as will leaving the door open for long periods of time. Crucial in the summer months when ambient temperatures inside and outside the vehicle are much higher.

## Cubicle Water Systems

### HYDROFLUSH

The Shades Hydroflush system uses a preset quantity of fresh water dispensed via a high pressure pump. Using a maximum of 500ml on a timed cycle that also controls an inline solenoid and slide valve fitted to the bottom of the bowl. A small quantity of clean water should remain in the bowl to seal the slide valve and prevent odor returning into the cubicle. For consistent operation of this valve the maintenance guidelines must be followed, using the correct toilet paper and chemical will prolong the life of the system.

## Cleaning & Hygiene

### Cubicle Cleaning

The cubicle is manufactured from Glass Reinforced Plastic (GRP) with high gloss interior and lightly textured exterior surfaces. This surface finish is delicate and must only be washed down using a mild detergent. The use of a caustic or abrasive material is not recommended, as this will affect the appearance.

### Toilet Bowl Cleaning

To protect the finish of the GRP toilet bowl do not use abrasives of any kind. To clean the bowl, use a mild anti-bacterial detergent and suitable brush.

Some units will have a Stainless Steel bowl installed but the same rules apply.

### Litter Bin

The P6 features a plastic box located outside of the cubicle that acts as a spillage tray for a bag. The bag must be secured to the bottom of the bin hopper using the elastic cord. The bin is filled via the aisle side litter flap or inside the cubicle.

### Soap Dispenser

To fill the dispenser, lift the lid of the dispenser and fill with liquid soap. Some dispenser are located behind a vanity door and require a key for access.

### Toilet Roll

It is recommended that a high biodegradable paper is used at all times.

**Cat No. = 800103 Pack of 36. (Available from Shades Technics)**

**Domestic grade toilet paper is not recommended as this can block the system.**

## Maintenance

### Daily Routine

- Prior to the vehicle entering service the holding tank should be charged with an additive to sanitise the effluent.
- The recommended product is **Shades Super Sani ECO or Sani RC**, formulated from natural essential oils, this formaldehyde-free formula is contained within a water soluble membrane. A single 16 gram sachet contains the recommended dosage for 110 litre capacity holding tank and will function for a maximum of three days.  
To apply:
  1. Ensure the soil tank is empty.
  2. Check the tank evacuation valve is closed
  3. Check the WC clean water tank is full.
  4. Switch on power to the cubicle (see page 3)
  5. Press the flush button and drop the complete sachet into the bowl.

**Cat No. 800025 (Box 100) or Cat No. 800026 (Carton 1000)**

*Caution*

**Do not open the sachet .**

- It is recommended that the WC supply tank is drained and the soil tank is emptied at the end of every day.
- The hand wash tank should be emptied and re-filled daily. To help maintain a clean tank and freshwater the use of a sanitiser is recommended. Shades can supply a suitable product that disinfects the water, that is safe to drink and non-irritable to the skin and eyes. **Cat No. 800060**

### Weekly Routine

- Check extractor fan function.
- Inspect the security of the faucet, door hinges and toilet seat. Check the operation of the cubicle door and lock function.
- Open vanity door, check electrical and plumbing connections for security and leaks.
- Check water flow to the hand basin is smooth and constant.

### Quartely Routine

- Flush out soil tank with clean water. (the soil tank must be empty and the vehicle positioned so that the soil tank evacuation valve is over a sewage drainage point)

To flush out:

1. Switch on the cubicle.
2. Connect a hose pipe to a mains water supply.
3. Push a hose pipe through the flap in the bottom of the bowl and into the tank.
4. Turn on the water to the hose pipe and fill the holding tank, being careful not to overfill. .
5. Switch off the water to the hose and open the evacuation valve to empty the tank.
6. Press the flush button to open the valve and remove the hosepipe.

- Lubricate soil tank evacuation valve. (to be carried out immediately after flushing through the soil tank). Undo the four fixing bolts holding the soil valve assembly together and remove the main body section. Lubricate the slide paddle using lithium grease or similar so the open/close operation is smooth. Replace the valve body and bolt together. Do not over tighten as this will restrict the operation of the valve.

- Disinfect the hand wash tanks and flush through with clean water.



## Winterization

If the vehicle is to be parked in zero or sub-zero temperatures, it is imperative that all water containers are completely drained.

### Note

No warranty claims will be accepted on any winter damaged parts.

## Jump Starting

When jump starting the vehicle, please ensure that the dashboard master Switch for the WC is off!

## Fault Reporting Procedure

1. In the unlikely event of a fault occurring an emergency parts kit has been supplied along with the enclosed comprehensive fault analysis flow chart
2. Using these charts, determine the cause of the fault and replace the faulty item from the kit if possible.
3. To order a replacement kit or non-kit part contact the dealer as specified on the contents page (Page 2) of this manual, quoting the cubicle serial number. The serial number is located behind the vanity access panel.
4. In order for replacement goods to be dispatched a simple warranty procedure must be followed.

### Notes:

- **Tampering, unauthorised involvement or preventable damage will result in a charge being levied**

## Warranty Claim Procedure

Shades Technics offer a comprehensive warranty cover for all products, valid for 12 months from the vehicle's date in service.

**Contact the dealer or supplier from where the vehicle was purchased.**

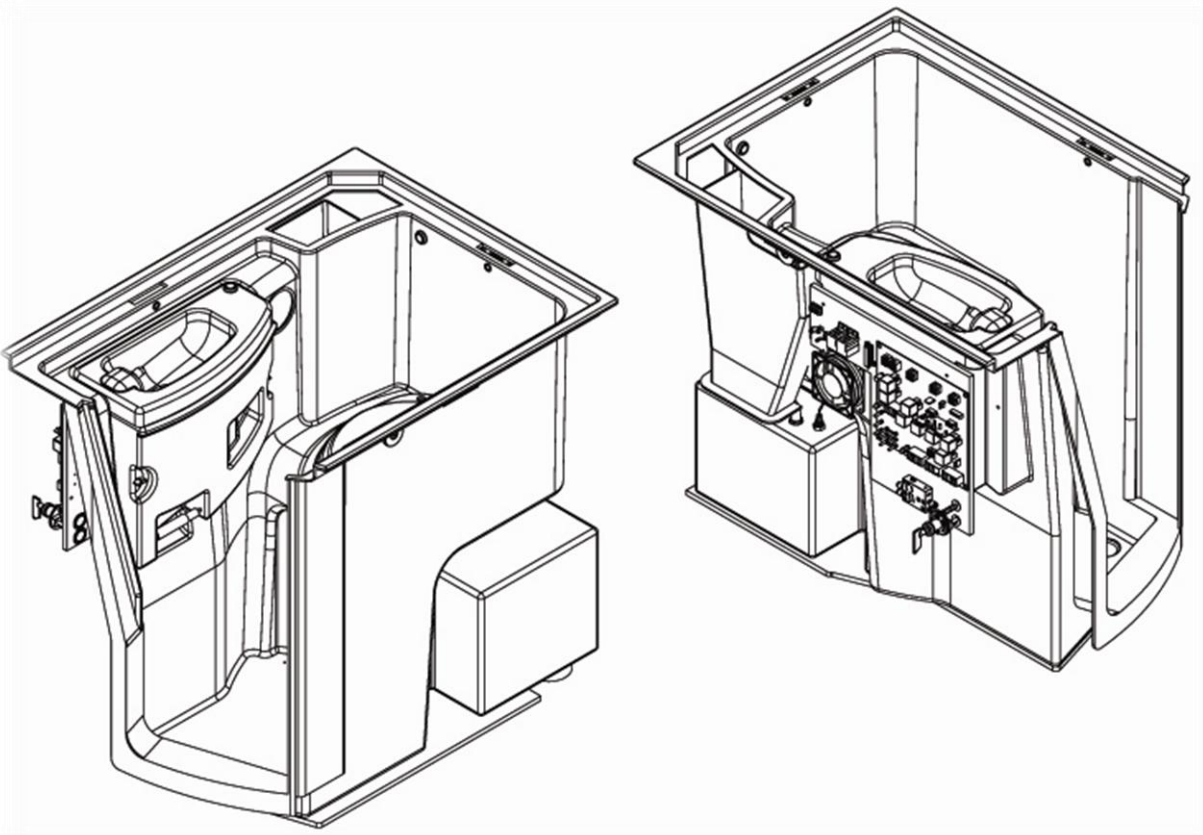
*The dealer/supplier will then contact Shades Technics who will fax a warranty claim form to the customer.*

**Complete the warranty claim form, ensuring all details are filled in and fax back to Shades Technics on +44 (0)1992 476831**

*Shades Technics will dispatch any parts required or organise rectification via one of its service points.*

**Please return any faulty parts that have been replaced under warranty within 14 days or a charge may be applied**

## Cubicle Spare Parts



Ventilator Fan  
Cat No. 727502



Flush / HW Button  
Cat No. 714007



Floor Drain  
Cat No. 701551



Flush Nozzle  
Cat No. 663609



Toilet Roll Spindle  
Cat No. 661618

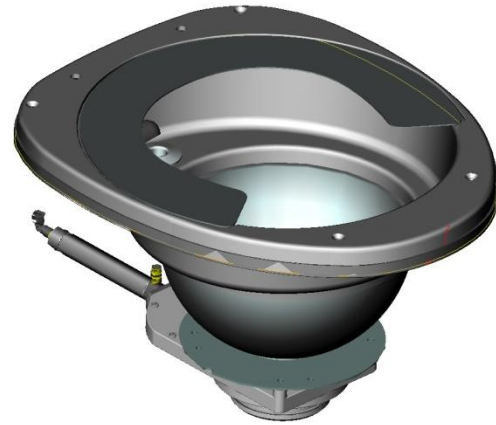


Vanity Screw Fixings  
Cat No. 663408



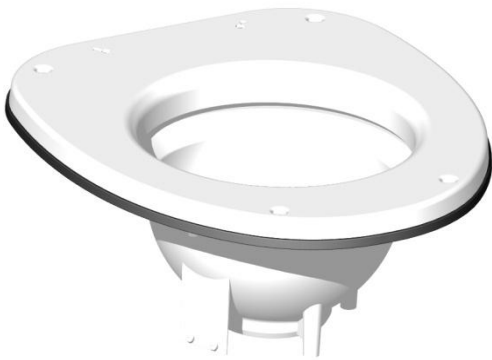
GRP Toilet Bowl Assembly

Cat No. 731256



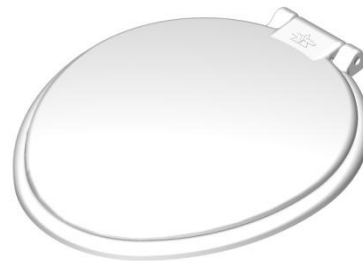
SS Toilet Bowl Assembly

Cat No. 731250



ABS Toilet Bowl Assembly  
(2010 onwards)

Cat No. 731320



Toilet Seat

Cat No. 735101

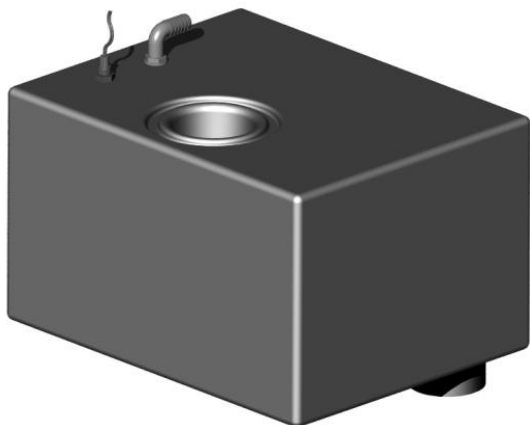
Hinges

Cat No.735102



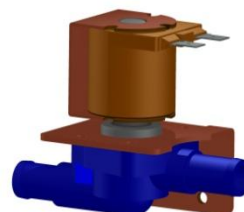
Splash Shield

Cat No. 661987



P6 Soil Tank

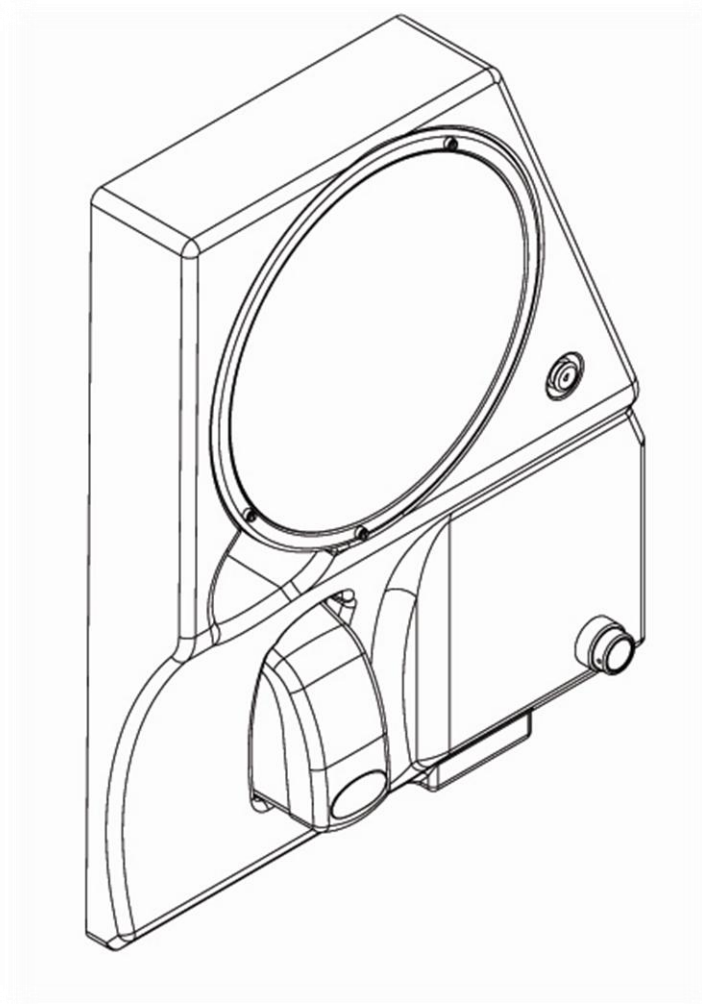
Cat No. 733106



HW Solenoid

Cat No. 714620

### Cubicle Spare Parts



Soap Dispenser

Cat No. 661660



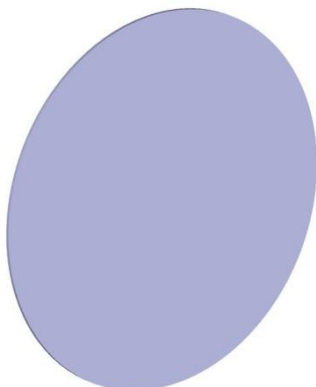
Alarm Button

Cat No. 714030



Hand Drier Button

Cat No. 714014



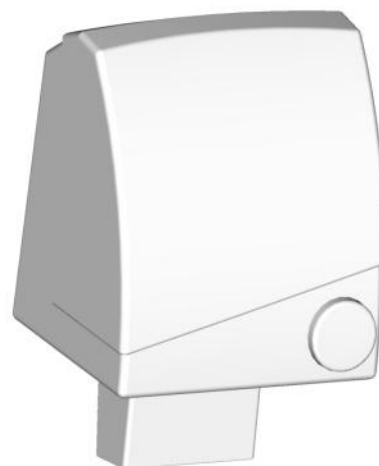
P6 Mirror

Cat No. 661822



Nylon Screws

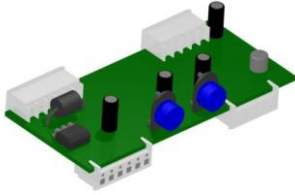
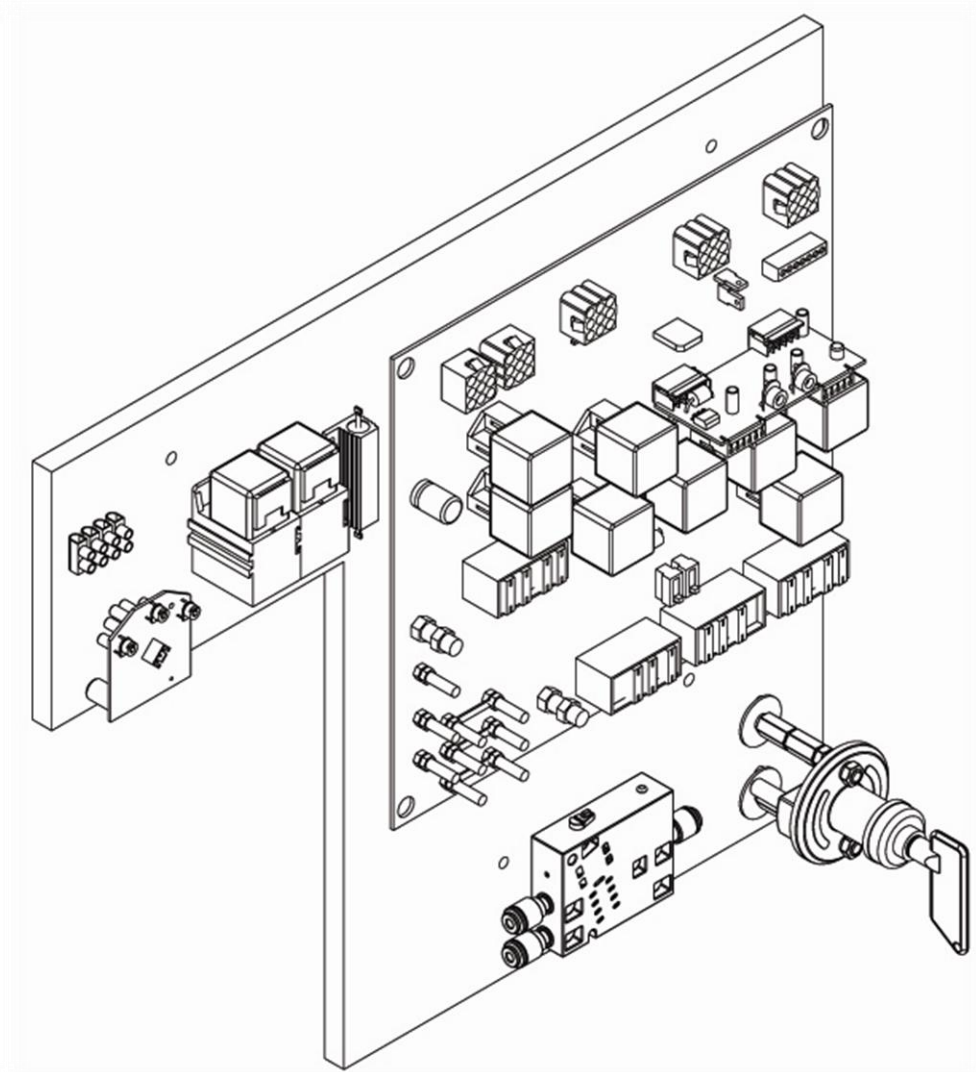
Cat No. 713151



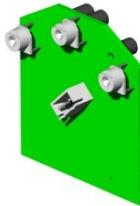
Hand Dryer

Cat No. 661800

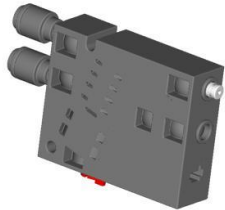
# Electrics



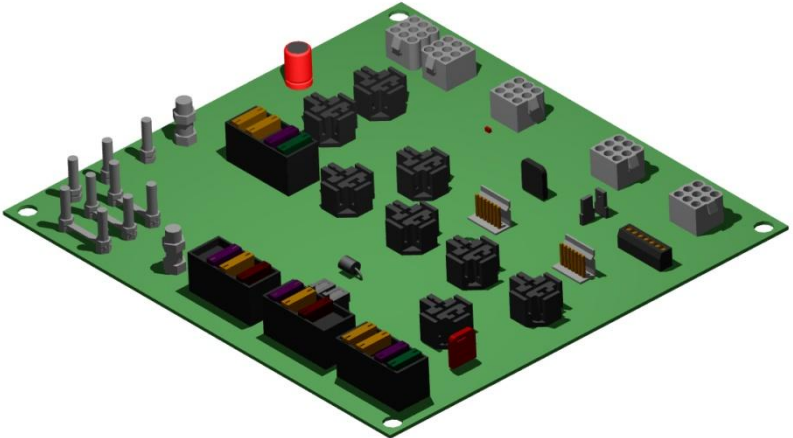
Timer Board - MKII  
Cat No. 730612



PIR PCB (Sold as complete assembly)  
Cat No. 712080



Isonic Valve  
Cat No. 735714

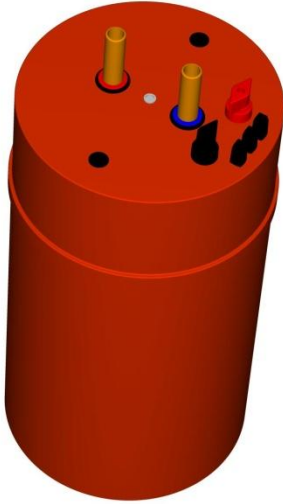


Main PCB - MKII  
Cat No. 730616



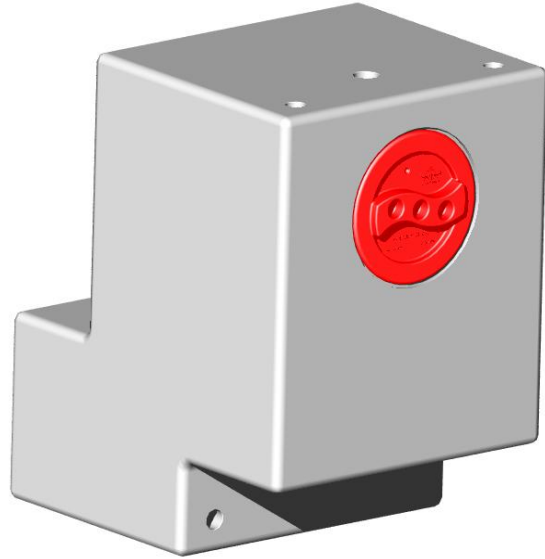
Isolator Switch  
Cat No. 661221

## Tanks - Pumps - Boiler



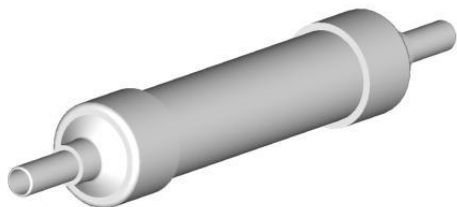
M5 Water Heater

Cat No. 697010



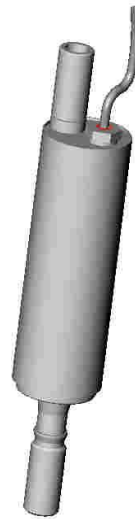
55L Step Tank

Cat No. 733666



Hydro-filter (single) Cat No. 722017

Hydro-filter (pack of 6) Cat No. 722015



Drinks Pump

Cat No. 702102



Flush & Hand Wash Pump

Cat No. 702010

## Plumbing Spare Parts



Hatch Cover

Cat No. 732070



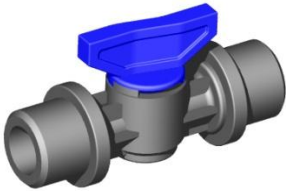
Horizontal Float Switch

Cat No. 714510



Vertical Float Switch

Cat No. 714500



Tap

Cat No. 747044



Tap 15mm – Push fit

Cat No. 7470037



Tank Coupler

Cat No. 747028



Overflow Fitting

Cat No. 744011



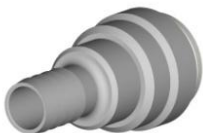
Hose Barb Filler

Cat No. 695520



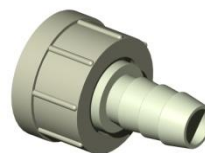
Hose Barb Filler

Cat No. 747032



Hose Barb Connector

Cat No. 747027



¾" Swivel Hose Connector

Cat No. 744005



Hose Barb Filler

Cat No. 744022



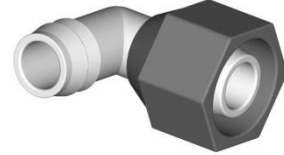
## Plumbing Spares



Non-Return Valve  
Cat No. 747036



In-Line Filter  
Cat No. 722102



Hose Barb Swivel – 1/2"  
Cat No. 702520



Tank Connector – 22m  
Cat No. 745010



15mm Straight  
Cat No. 747010



Stem Elbow  
Cat No. 747016



15mm Elbow  
Cat No. 747015



15mm T-Connector  
Cat No. 747020



15mm – 3/4" Thread    15mm – 1/2" Thread  
Cat No. 747024    Cat No. 747025



Service Valve  
Cat No. 747035

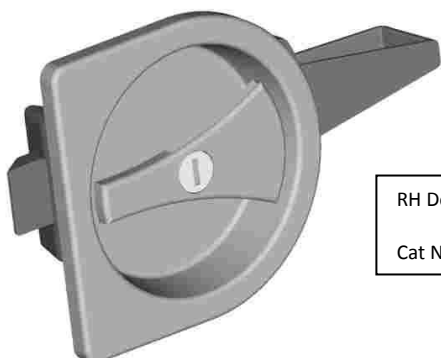


Jubilee Clip – 12-22mm  
Cat No. 744041



Jubilee Clip – 16-27mm  
Cat No. 744042

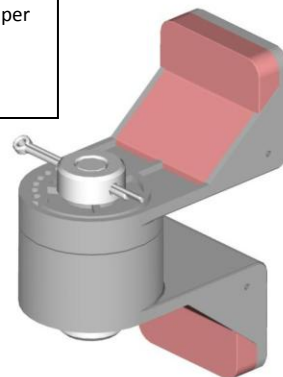
## Door Furniture



RH Door Lock  
Cat No. 661205

In-Swing Door Hinge (II) Upper  
& Lower Set.

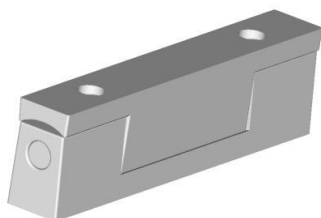
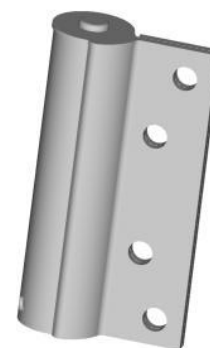
Cat No. 661409



Coat Hook  
Cat No. 661030

Fridge Door Hinge

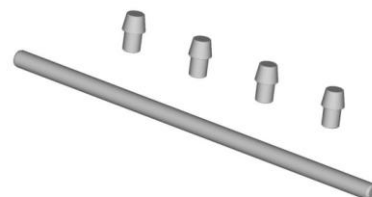
Cat No. 661400



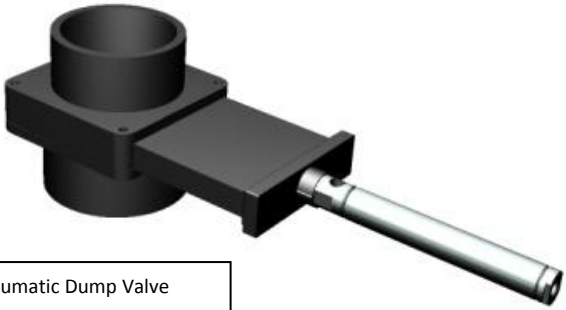
Edgemount Hinge  
Cat No. 661410

Pin & Bar Hinge  
Tension set

Cat No. 661401

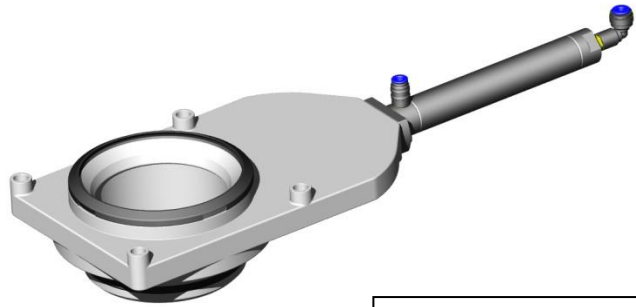


## Valves



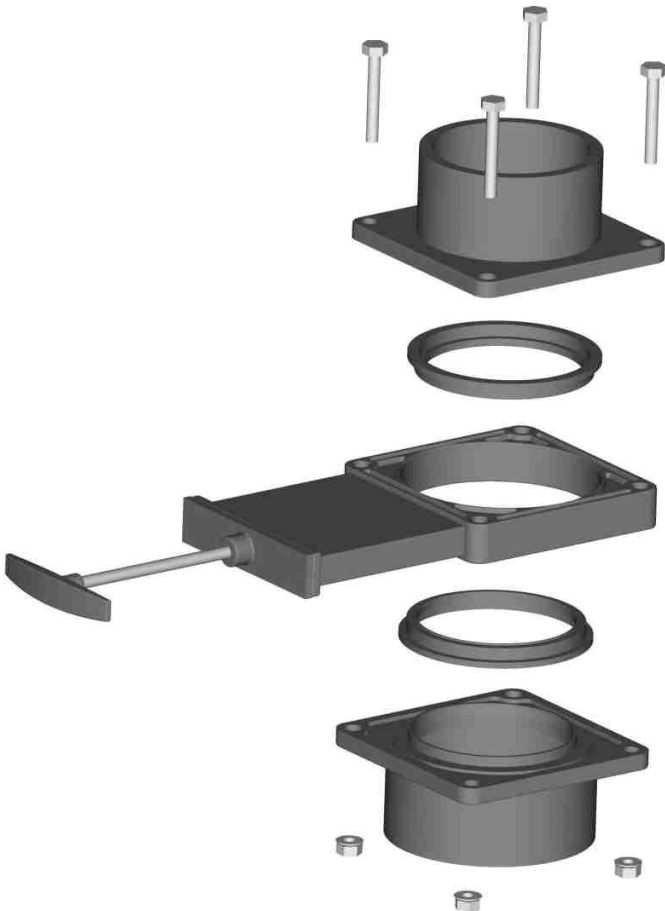
Pneumatic Dump Valve

Cat No. 735774



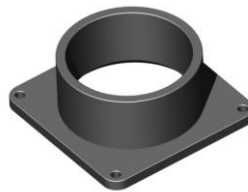
Toilet Valve

Cat No. 735713



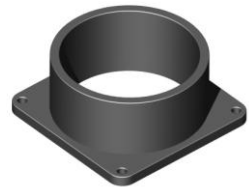
Dump Valve Assembly

Cat No. 735746



Small Slip Socket

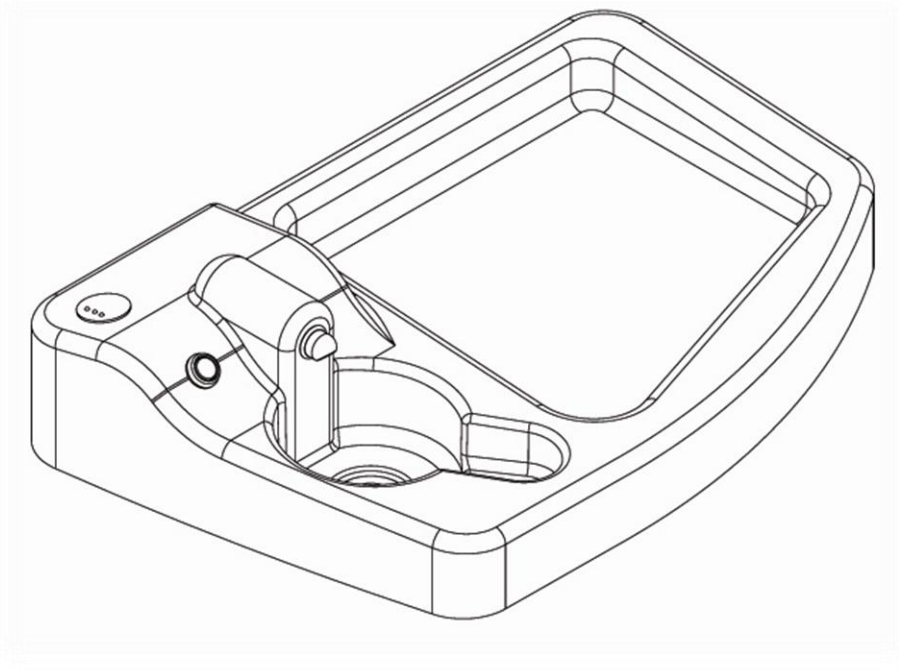
Cat No. 735700



Large Slip Socket

Cat No. 735701

# Drinks Worktop



Drinks  
Cat No. 712511

Flush / HW Button  
Cat No. 714007



1/2" Back Nut Cat No. 695504  
3/4" Back Nut Cat No. 695505

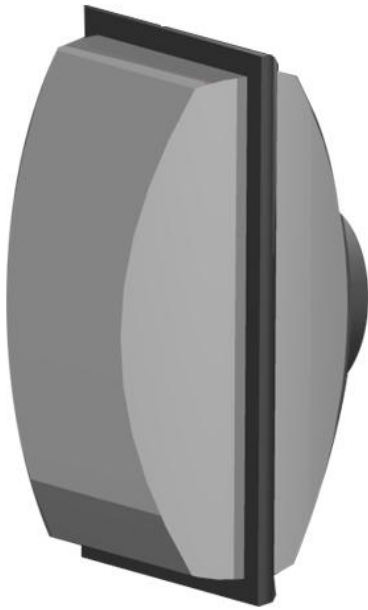


Sink Faucet - Drinks  
Cat No. 663603



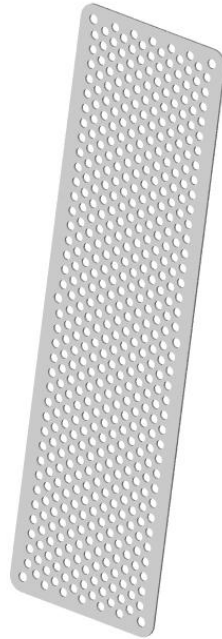
Sink Drain - 45Deg  
Cat No. 701552

## Fridge &amp; Cubicle Upper Spares



Fridge Plant – 100W

Cat No. 703113



Fridge Grille

Cat No. 731273



Fridge Door Handle

Cat No. 663020



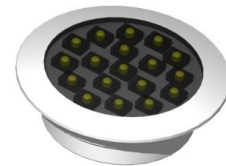
Fridge Grille - small

Cat No. 727201



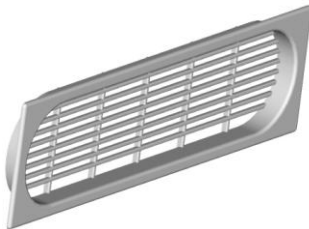
Smoke Alarm Standard Cat No. 661120

Smoke Alarm Interconnect Cat No. 661131



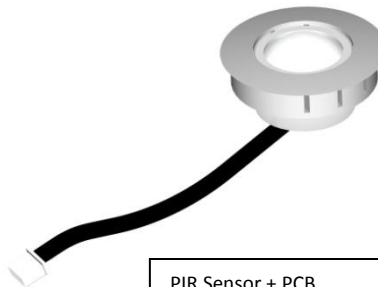
LED Spot Light

Cat No. 712043



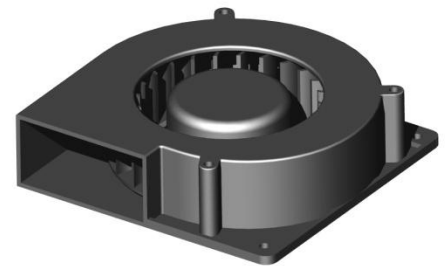
Fridge Grille - large

Cat No. 727200



PIR Sensor + PCB

Cat No. 712080



Snail Fan

Cat No. 727520

## Stickers



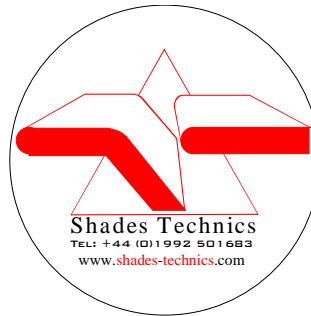
No Standing  
Cat No:735560



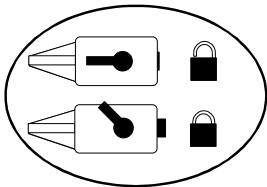
Emergency Alarm  
Cat No:735566



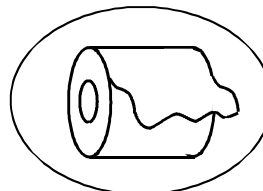
No Smoking  
Cat No:735563



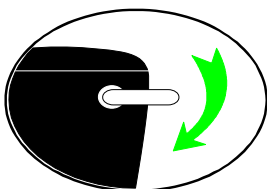
Shades Technics  
Cat No:735568



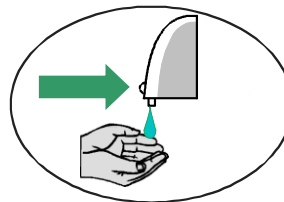
Door Lock RH  
Cat No:735564



Toilet Roll  
Cat No:735569



Flush  
Cat No:735562



Soap Dispenser  
Cat No:735572



Hand wash  
Cat No:735561



Litter Bin  
Cat No:735567

Full Set of Labels  
Cat No: 735570

Please specify LEFT or RIGHT hand cubicle when placing orders for labels

## Toilet Control Board (PCB)

### **Description (ST4962 – replaces ST4376)**

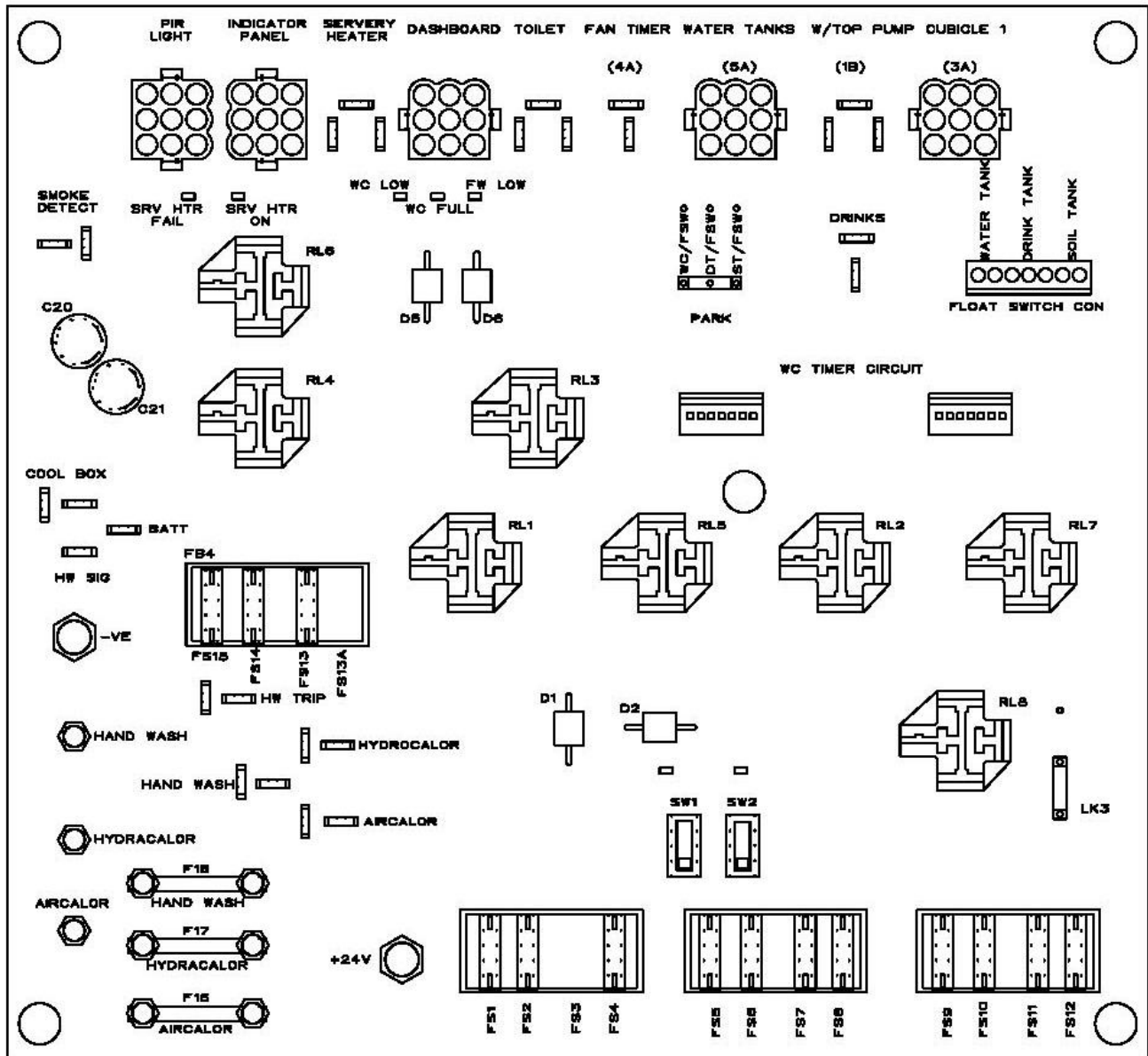
This Toilet Cubicle Control board provides a 24v supply to all cubicle components including high current electrical devices such as the Aircalor Hand Dryer, M5 water Heater and Coolbox.

Fitted with a separate timer board the flush & hand wash cycles can be adjusted and if a problem occurs the board can be flipped 180 degrees to put the system in un-timed mode or pump on demand.

Other features include float switch override facility and a 9v dropper to control a smoke alarm, removing the need for a battery.

SW1 & SW2 control power to the board and are for use during maintenance/testing, removing the need to keep going back and forth to the dashboard switch.

## ST4962 – PCB Layout

**Notes for All Boards**

Fuses FS13 and FS13A not to be fitted both at the same time as feedback from the direct battery feed and the board feed. I.E. Battery Isolator can occur.

FS13A is only for Board fed cool box

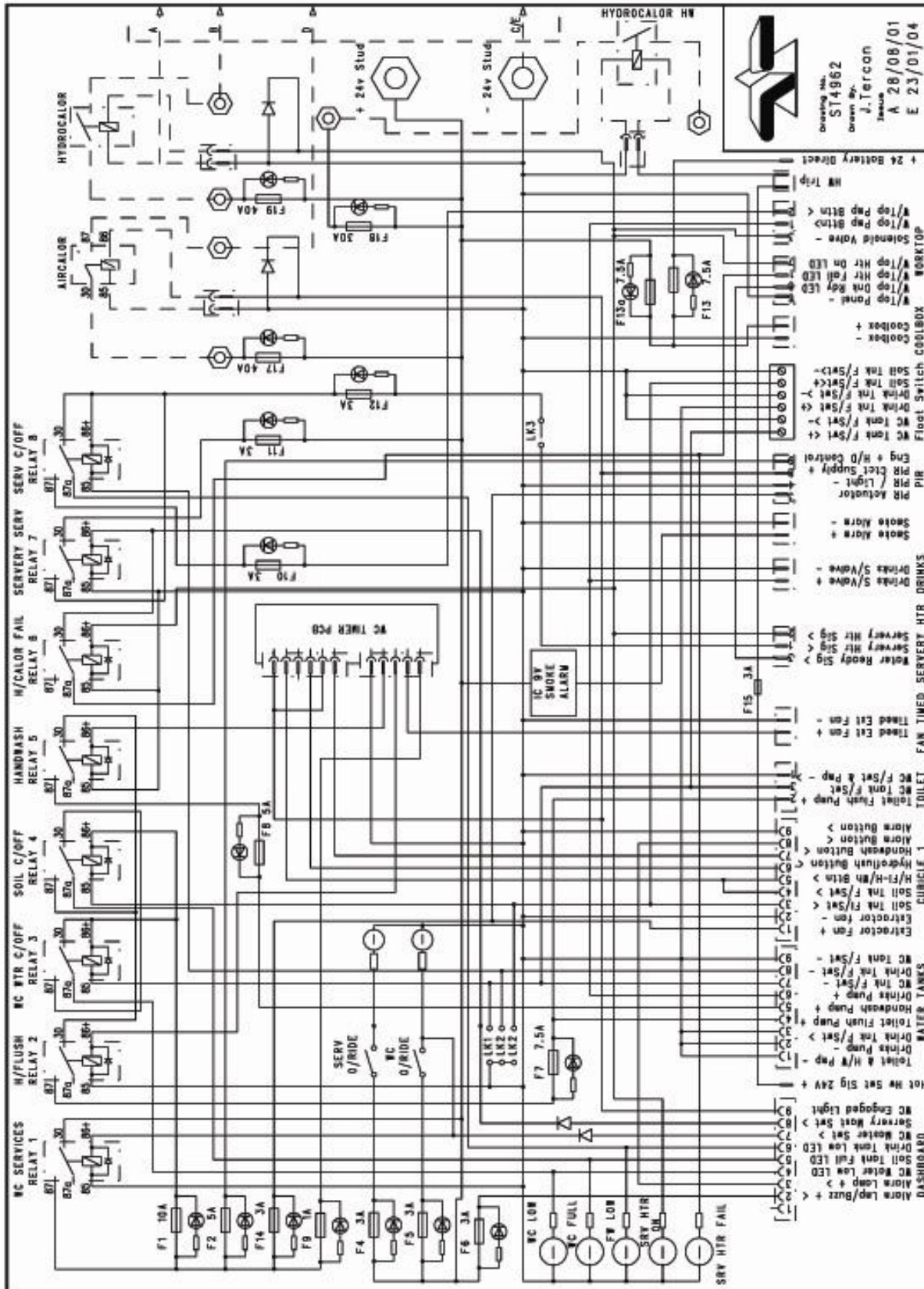
FS13 is only for direct battery fed cool box

Smoke Detector Circuit not fused

Off Board - Hydrocalor relay fitted Hand Dryer relay fitted



# ST4962 – PCB Wiring



## Service

The following section details where to find key components and how to replace them.

Part = Lights

Location = Cubicle Ceiling

### Replacement....

DISCONNECT THE POWER TO THE CUBICLE

GENTLY PULL THE LED LAMP FROM THE CEILING LIFTING THE EDGES WITH A FLAT SCREW DRIVER. USE MASKING TAPE TO PROTECT THE GRP CEILING PANEL FROM THE BLADE.

DISCONNECT THE LIGHT UNIT & REPLACE



Part = PIR Sensor

Location = Cubicle Ceiling

### Replacement....

REMOVE 6x SCREWS SECURING THE PIR & SMOKE ALARM COVER

TAKE OUT THE PIR SENSOR AND UNCLIP THE CABLE

RE-FIT A NEW SENSOR & CHECK THE SENSITIVITY AND TIMING ADJUSTMENT IS CORRECT



## Service

Part = Hand Drier

Location = Cubicle Wall/Behind Vanity

### Replacement....

DISCONNECT THE POWER TO THE CUBICLE

REMOVE 2x SCREWS ON THE UNDERSIDE OF THE UPPER VANITY AND 1x SCREW BEHIND THE MIRROR

REMOVE 2x SCREWS ON THE UNDERSIDE OF THE HAND DRYER

REMOVE THE FRONT COVER OF THE HAND DRIER

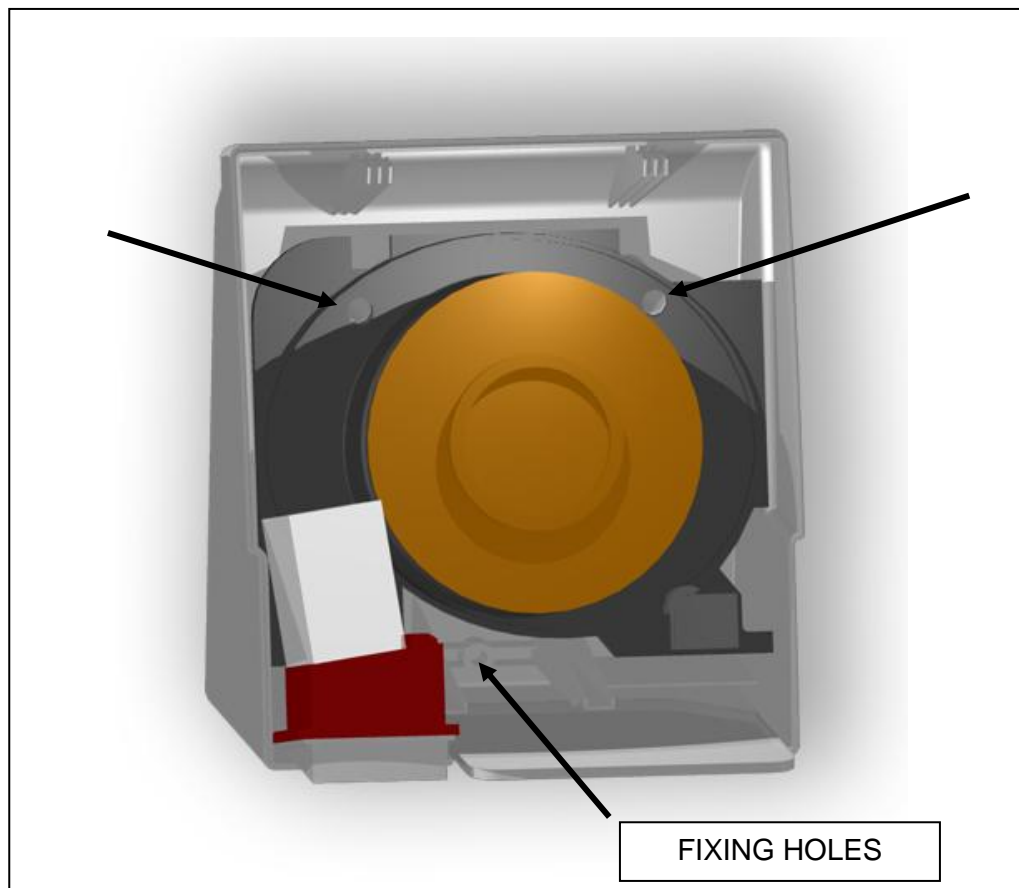
REMOVE 2x RUBBER HOLE COVERS

REMOVE 3x SCREWS RELEASING THE UNIT FROM THE WALL

DISCONNECT THE 2 CABLES PASSING THROUGH THE OUTER WALL OF THE CUBICLE MAKING SURE THEY DO NOT FALL DOWN THE BACK

RE-CONNECT A NEW UNIT AND SCREW TO THE WALL

MAKE SURE THE RUBBER HOLE COVERS ARE RE-FITTED AND FIT THE COVER SECURING WITH BOTH SCREWS



## Service

Part = Hand Wash & Flush Buttons

Location = Sink Vanity

### Replacement....

DISCONNECT THE POWER TO THE CUBICLE

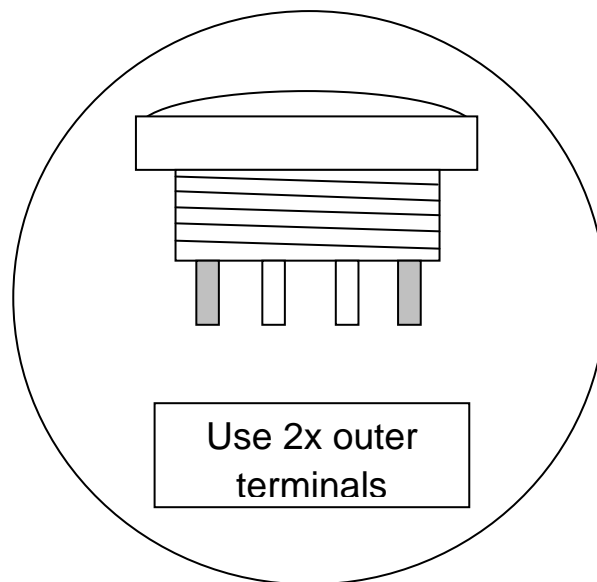
UNSCREW THE BUTTON HOLDER COVER

REMOVE TERMINALS FROM THE BACK OF THE BUTTON

UNSCREW THE COLLAR ON THE UNDERSIDE OF THE BUTTON

BUTTON SHOULD RELEASE FROM THE TOP

RE-FIT NEW BUTTON AND CONNECT THE TERMINALS



## Service

Part = Hand Wash & Flush Pump

Location = Next to supply tank behind centre steps.

### Replacement....

DISCONNECT THE POWER TO THE CUBICLE

REMOVE ANY ACCESS PANEL & INSULATION PROTECTING THE PUMPS

DRAIN FRESHWATER TANK

DISCONNECT THE WIRES TO THE PUMP

REMOVE FROM SECURING CLIP

RELEASE INLET AND OUTLET PIPES

RE-FIT NEW PUMP MAKING SURE THAT BOTH INLET AND OUTLETS ARE WATER TIGHT AND THE FLOW ARROW IS POINTING IN THE CORRECT DIRECTION

RE-CONNECT THE POWER

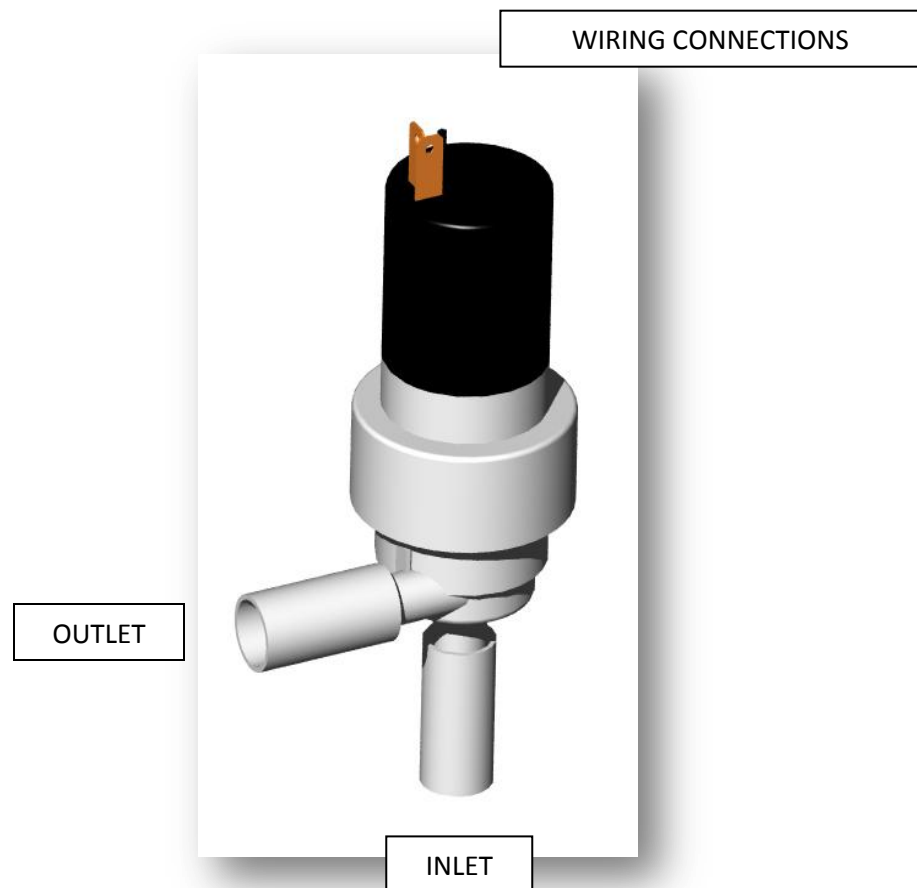
CLOSE THE DRAIN ON THE SUPPLY TANK

RE-FILL TANK WITH FRESHWATER

SWITCH ON POWER TO CUBICLE

PRIME PUMP WITH 2-3 BUTTON PUSHES

WHEN WORKING CORRECTLY REPLACE THE INSULATION AND COVER



## Service

Part = PCB

Location = Behind the sink in the locker

### Replacement....

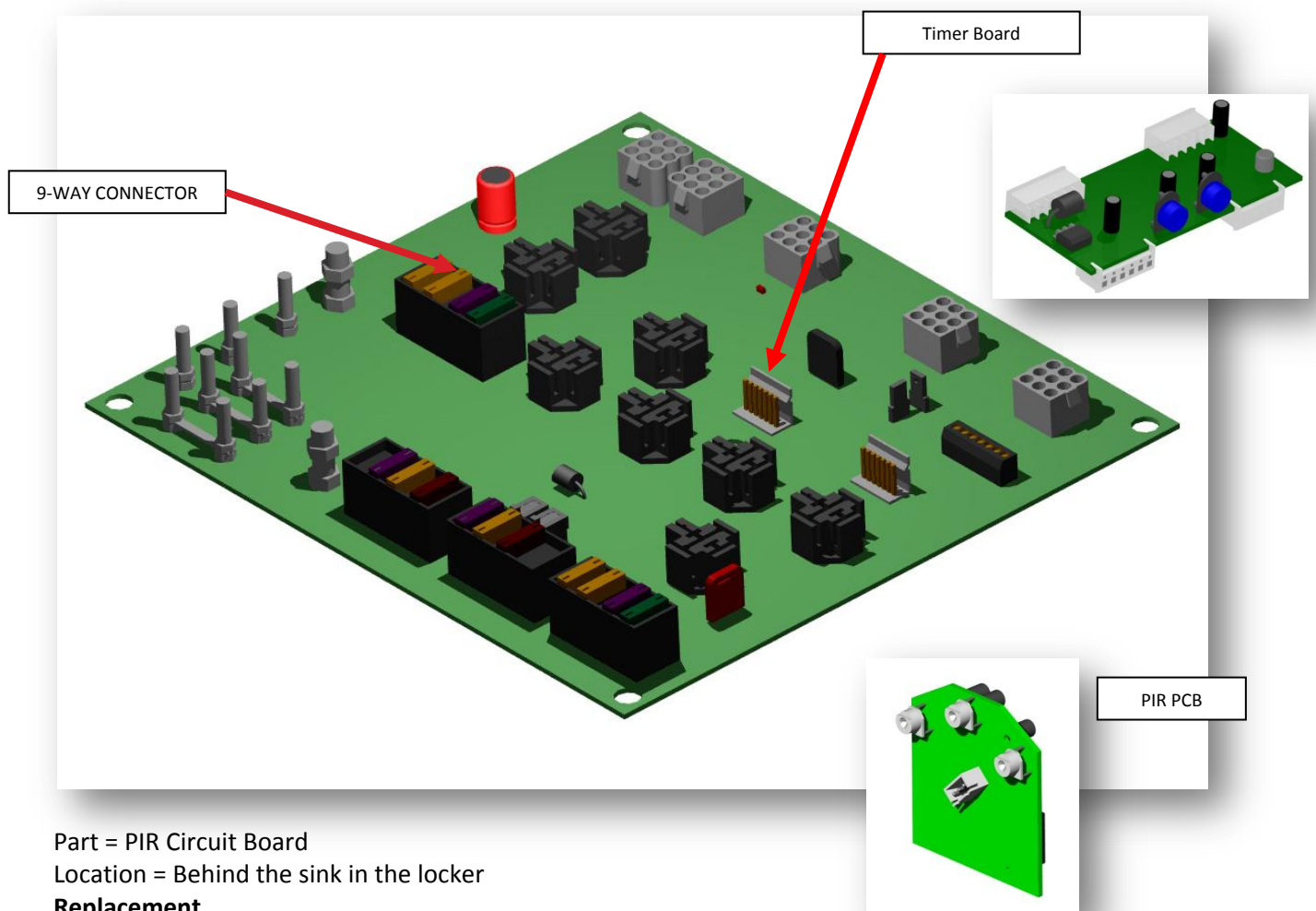
DISCONNECT THE POWER TO THE CUBCILE

REMOVE ALL CONNECTORS

REMOVE THE 5X SCREWS HOLDING THE PCB

FIT THE NEW PCB & ATTACH THE CONNECTORS MAKING SURE THAT THEY GO BACK IN THE CORRECT ORDER.

REPLACE OR SWAP TIMER BOARDS OVER CHECKING ORIENTATION IS CORRECT



Part = PIR Circuit Board

Location = Behind the sink in the locker

### Replacement....

DISCONNECT THE POWER TO THE CUBCILE

REMOVE ALL WIRES IN THE SCREW TERMINALS & THE SMALL SENSOR PLUG

REMOVE THE 2X SCREWS HOLDING THE PCB

FIT THE NEW PCB & ATTACH THE SMALL PLUG & WIRES MAKING SURE THAT THE WIRES GO BACK IN THE CORRECT ORDER.