

5123RS User Manual

Toilet Cubicle User Guide & Spare Parts



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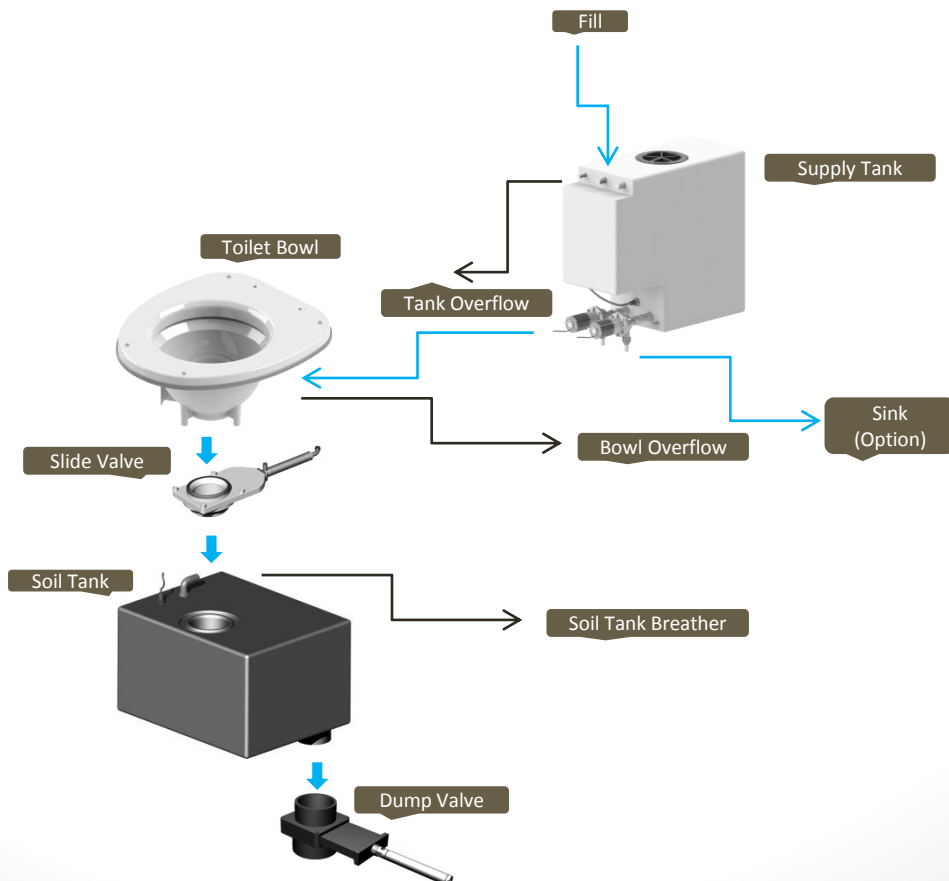
Introduction

HYDROFLUSH

- The Shades Hydroflush system uses a pre-set 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 odour 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.
- The Shades system will either have a single supply tank for both hand wash and flush or individual tanks. All tanks will be controlled by level sensors to protect the system electrically which is controlled by a PIR sensor that comes on when entering the cubicle. The system will not work unless the PIR has been activated.

System Schematic

Below shows a typical system layout of the water system.



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 ambient 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.

NOTES:


(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 (option)



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

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

- Cubicle Extractor Fan

The ventilator fan runs at half speed when the cubicle is vacant and switches to full speed when the cubicle is occupied.

- 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 soil tank inside the locker. If a pneumatic system is installed a button on the dashboard or on the front wall of the cubicle will activate the valve.

Smoke Alarm

- Not Fitted.

In Case of Emergency

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

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 ABS toilet bowl do not use abrasives of any kind. To clean the bowl, use a mild anti-bacterial detergent and suitable soft brush.
- Some units will have a Stainless Steel bowl installed but the same rules apply.

Litter Bin

- The 5123RS cubicle features a 10 litre plastic bin located behind the aisle fascia. It is recommended that the bin is lined with a plastic bag to make emptying the bin easy and to keep the bin clean and free of odour.

Soap Dispenser

- To fill the dispenser, push the top of the cover in and pull forward, fill with liquid soap. Some dispensers are located by the sink or behind the vanity door.

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

- Prior to the vehicle entering service the holding (soil) 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 4)
 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.

Maintenance - Weekly

- Check extractor fan function.
- Inspect the security of the following,
 1. Faucet/Tap
 2. Door Hinges
 3. Toilet Seat
 4. Door Lock
 5. Soap Dispenser
 6. Toilet Paper Dispenser
 7. Lights
 8. Alarm Button
 9. Smoke Alarm
- Open vanity door, check electrical and plumbing connections.

Maintenance — Biweekly or monthly

- Lubricate slide valve with Silicone grease as follows.
 1. *Open the mirror vanity door*
 2. *Turn gently 180° the small red lever of the isonic valve, the slide valve will automatically open.*
 3. *Wearing a latex glove take some Silicone grease and distribute around the black seal where the paddle slides underneath the WC bowl. An alternative is to use Silicone grease or oil in a spray can, both lubricate and leave a protective layer.*
 4. *Turn back the small red lever to close the slide valve and lock the vanity door.*

Silicon Grease is available at Volvo with code 535790 “High Vacuum Grease”, and could be found commercially either silicon grease or oil; below some options found at Grainger.

<i>Grainger Code</i>	<i>Description</i>	<i>Brand</i>	<i>Brand Code</i>
<i>2YKK4 73550</i>	<i>Grease, Silicone DM(TM), 14 oz</i>		<i>Jet-Lube</i>
<i>2X988</i>	<i>Silicone Lubricant 5%, Spray</i>	<i>Sprayon</i>	<i>S00206</i>
<i>4GUR2</i>	<i>All Purpose Silicone Lube</i>	<i>Sprayon</i>	<i>206LQ</i>

NOTE:

Lubrication periods must be adjusted in accordance with the coach and toilet usage, if usage is intensive then lubricate weekly. Use Silicone grease or lubricant compatible with rubbers, the use of another kind of grease will damage the rubber seals permanently.

Maintenance - Quarterly

- 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. *Open the Mirror door.*
 4. *Turn gently 180° the small red lever of the isonic valve, the slide valve will automatically open.*
 5. *Push a hose pipe through the bottom of the bowl and into the pipe and tank.*
 6. *Turn on the water to the hose pipe and fill the holding tank, being careful not to overfill.*
 7. *Switch off the water to the hose and open the evacuation valve to empty the tank.*
 8. *Turn back the small red lever to close the slide valve and lock the vanity door.*
- 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 silicone 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.
 - Clean the grate of the hand wash and the floor drains, this will avoid blockages.

Winterization

Jump Starting

Reporting a Fault

Winterization

- If the vehicle is to be parked in zero or sub-zero temperatures, it is imperative that all water containers are completely drained.
- During winter months (temperatures bellow 0°C or 32°F) we recommend to place glycol in the fresh water tank for flushing to prevent water freezing. Also is convenient to use glycol in the soil tank, since will experience same conditions.

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 (if apply).*
- **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. *(Warranty does not cover shipping costs)*

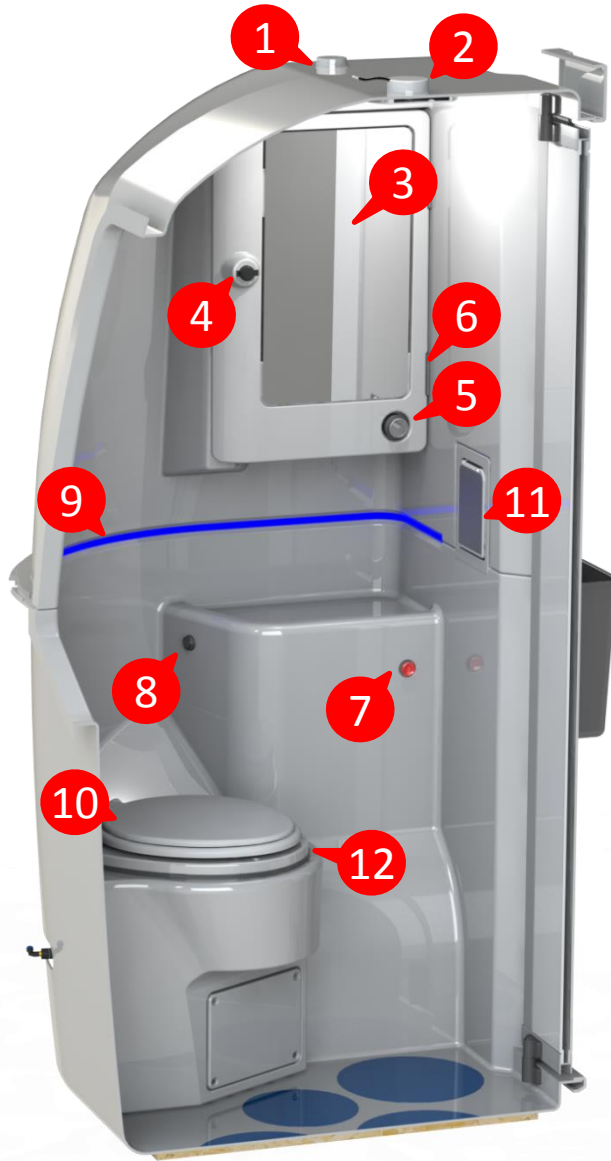


Cubicle Exterior



No.	Description	Part No.
1	Front Fascia	C5123055
2	Door Fascia	C5123056
3	Door Lock (RH)	VB661205
4	Cubicle Door	G5123053
5	Aisle Litter Bin	VB661040

Cubicle Interior



No.	Description	Part No.
1	LED Spot Light	VB712046
2	PIR Sensor	VB712025
3	Mirror	VB661823
4	Door Lock	VB661217
5	Push Plunger	VB714014
6	Vanity Door Hinges	VB661417

No.	Description	Part No.
7	Alarm Button	VB714030
8	Flush Button	VB714007
9	Ambient Light	VB712050
10	Toilet Seat	VB735150
11	Bin Door	E5123002
12	Toilet Bowl Assy	VB661035

Cubicle Interior



No.	Description	Part No.
1	Extractor Fan	VB727515
2	Paper Towel Holder	VB661627
3	Soap Dispenser	VB661665
4	Door Lock Catch	VB661257
5	Isonic Valve	VB735714

Cubicle Interior



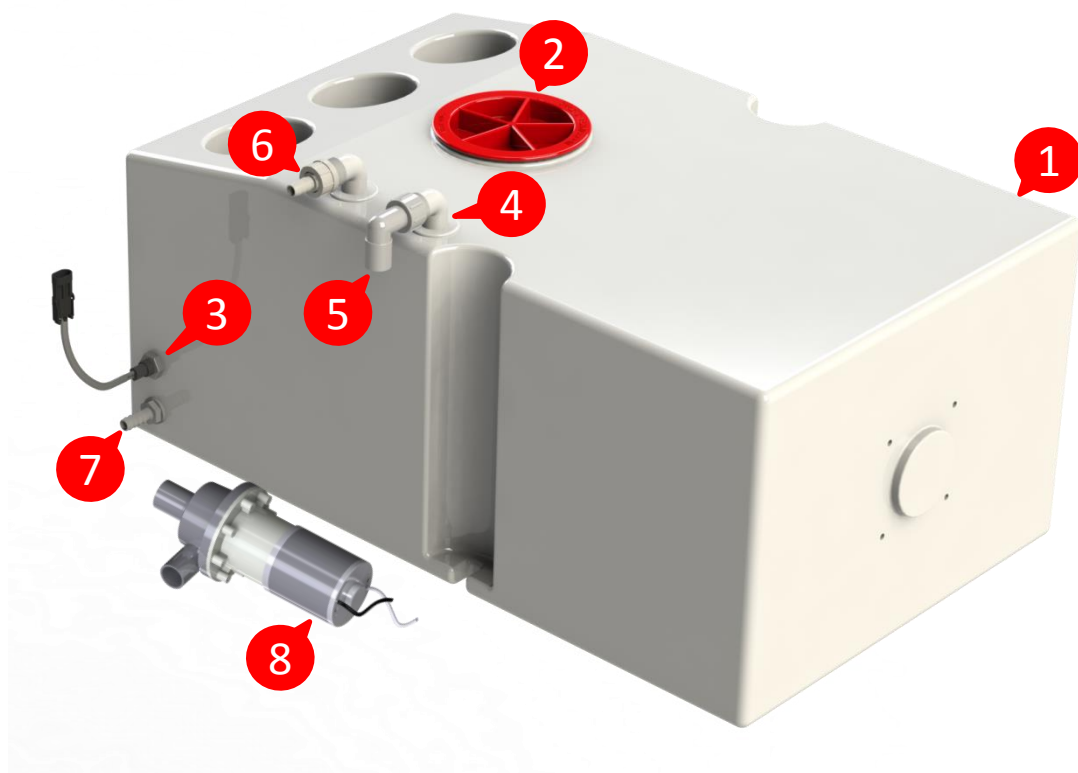
No.	Description	Part No.
1	Coat Hook	VB661030
2	Door Hinge (pair)	VB661500
3	Grab Handle 400	VB661164
4	Floor Grip Large Small	VB661482/ VB661483
5	Toilet Paper Dispenser	VB661630
6	Slide Valve	VB735713

Water Tanks



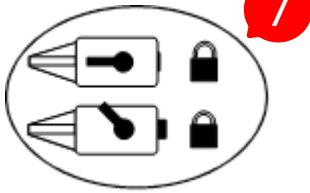
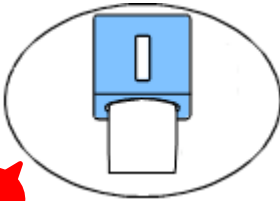
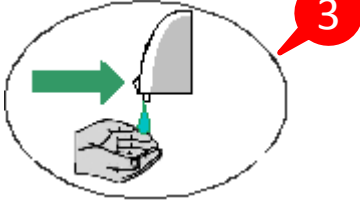
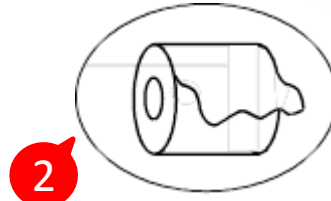
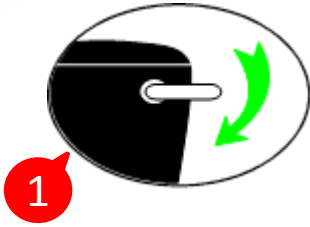
No.	Description	Part No.
1	Soil Tank	VB733150
2	Hatch Cover & Seal	VB732052
3	Float Switch	VB733509
4	Dump Valve	VB735776
5	Dump Valve Handle	VB733650
6	Breather	VB744005

Water Tanks



No.	Description	Part No.
1	Freshwater Tank	VB733090
2	Hatch Cover & Seal	VB732052
3	Float Switch - H	VB714511
4	3/4" Elbow Tank Fitting	VB744003
5	21.5mm x 3/4" Elbow	VB744002
6	3/4" Hose Swivel Straight	VB744005
7	Hose Barb Straight	VB695520
8	Flush Pump	VB702180

Symbols (stickers)



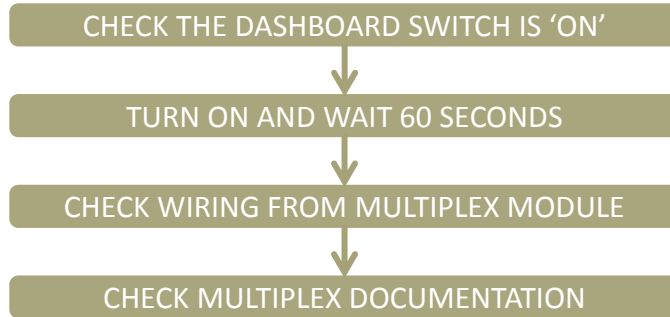
No.	Description	Part No.
1	Toilet Flush	VB735562
2	Toilet Paper	VB735569
3	Soap	VB733510
4	Trash Bin	VB735567
5	Paper Towel	VB735573
6	Do Not Stand	VB735560
7	Door Lock RH	VB735564
8	Alarm Button	VB735566
9	No Smoking	VB735563

Description

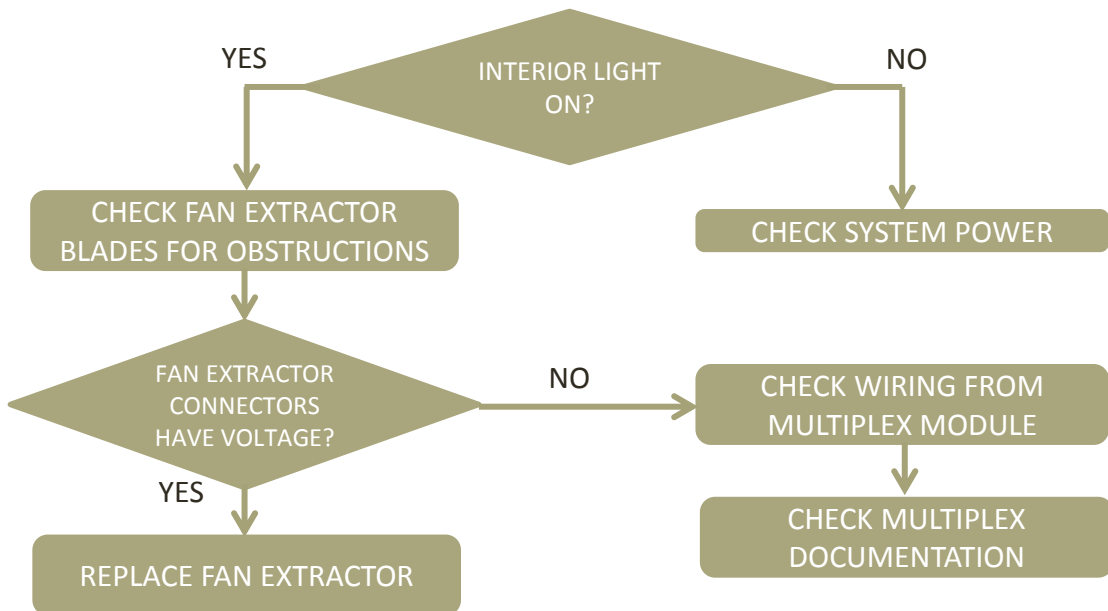
The toilet cubicle, as fitted to a Volvo chassis, is controlled by the vehicles Multiplex system and not an individual circuit board. All output devices are short circuit and over-voltage protected for reliability and safety but for detailed fault finding please consult the vehicle manual.

Fault Analysis Index

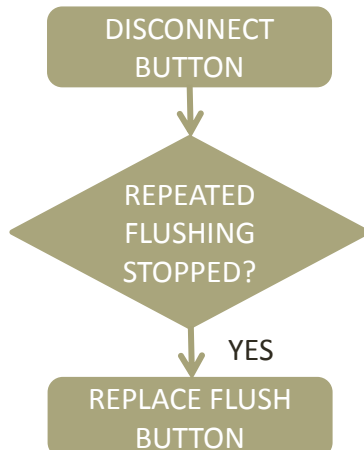
- System Without Power



- Extractor Fan Not Working

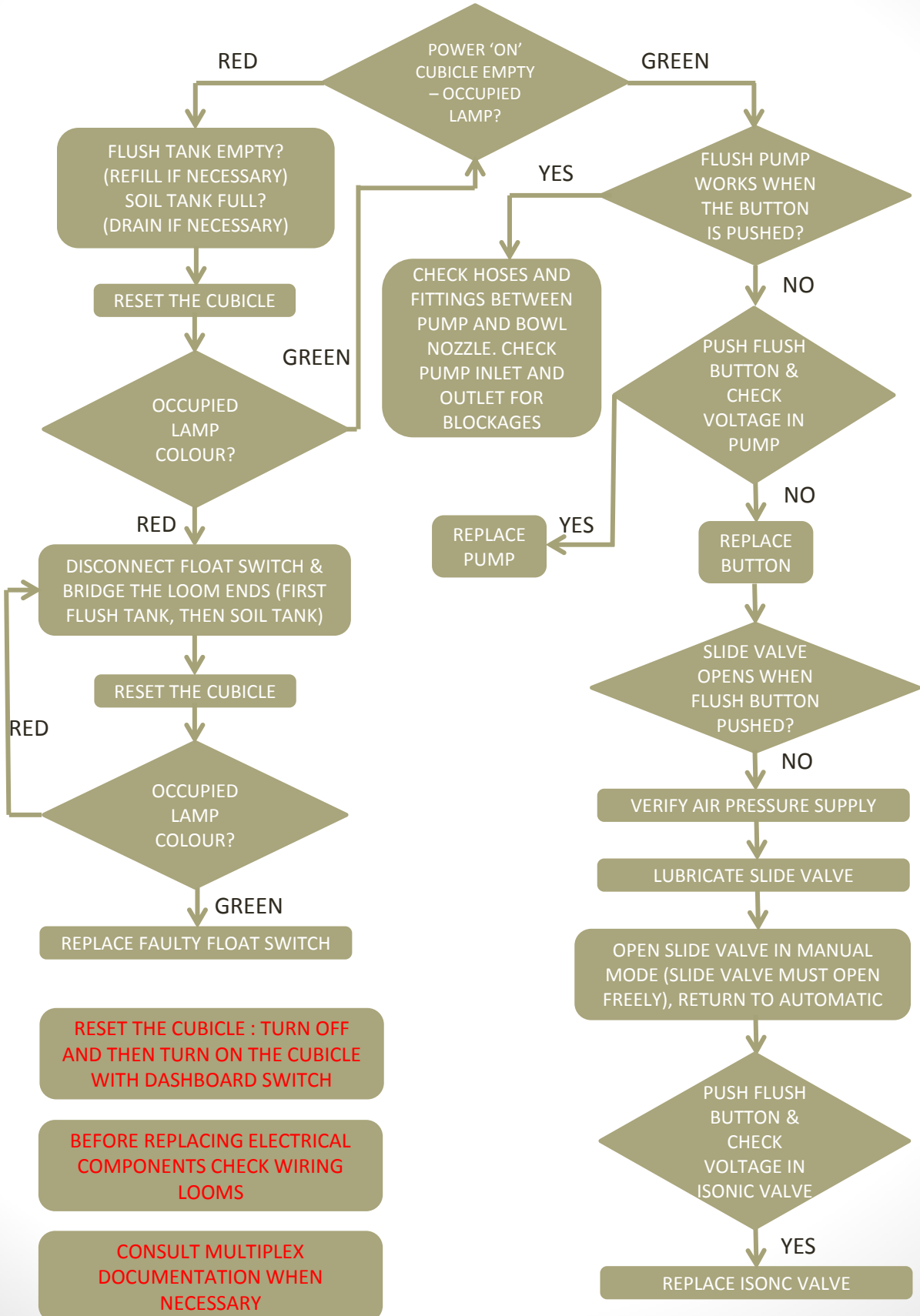


- Repeated Flushing



Fault Analysis Index

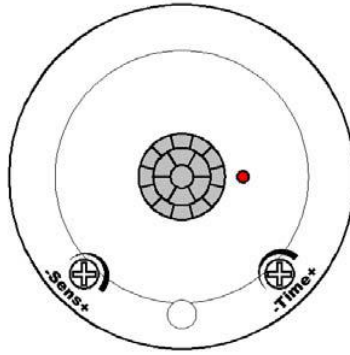
- WC Not Working (No Water, No Slide Valve)



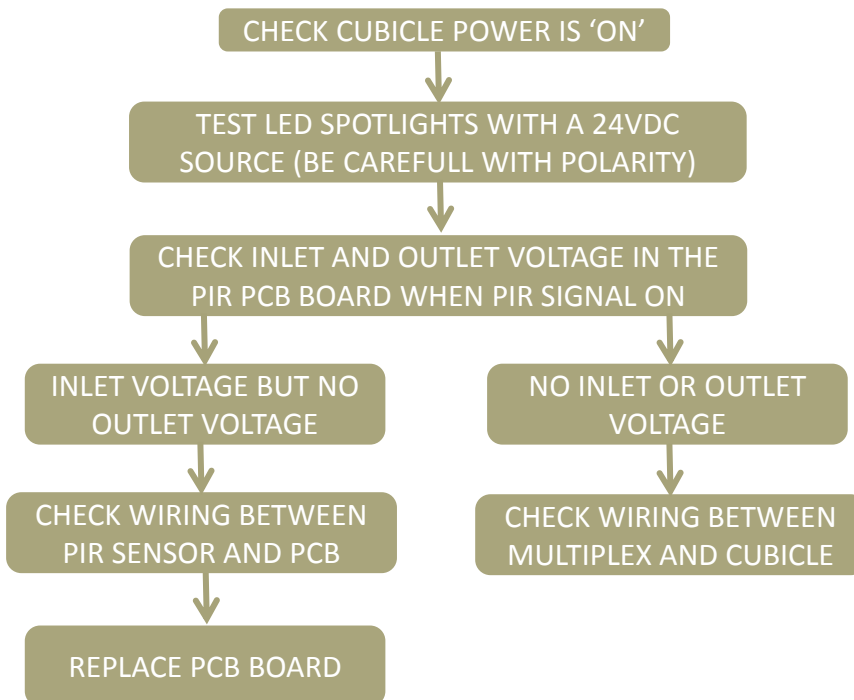
Fault Analysis Index

- Interior Lamp Timer

PIR SENSOR DETECTS HEAT AND MOVEMENT. THE TIME IS DETERMINED BY THE MULTIPLEX SYSTEM AND THE TIMER ADJUSTER MUST BE SET TO ITS LOWEST. CONSULT THE DEALER TO HAVE THIS ADJUSTED IF NECESSARY. THE SENSITIVITY CAN BE ADJUSTED ON THE UNIT AS SHOWN.

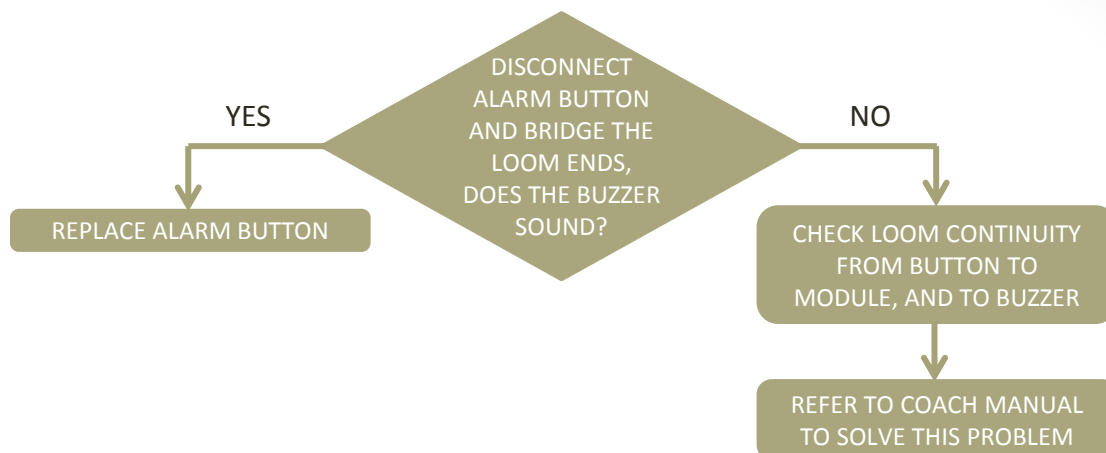


- Interior Lights Not Working



Fault Analysis Index

- Alarm Button (Buzzer) Not Working



Service

- 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 3x SCREWS SECURING THE PIR COVER
- TAKE OUT THE PIR SENSOR AND UNCLIP THE CABLE
- RE-FIT A NEW SENSOR & CHECK THE SENSITIVITY AND TIMING ADJUSTMENT IS CORRECT

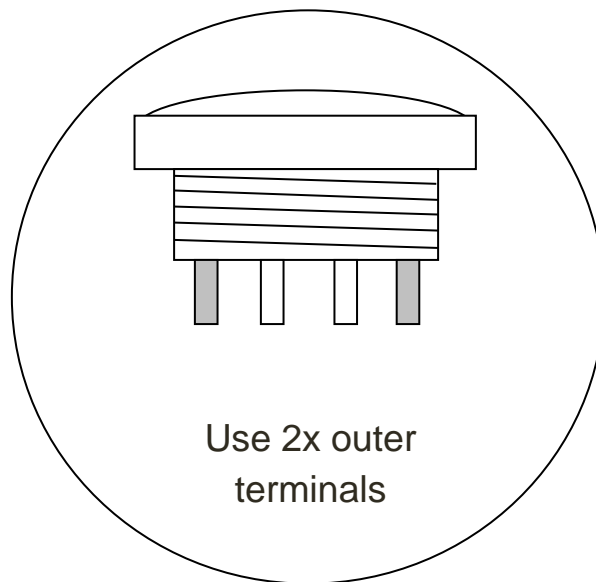


Service

- Part = Flush Button
- 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

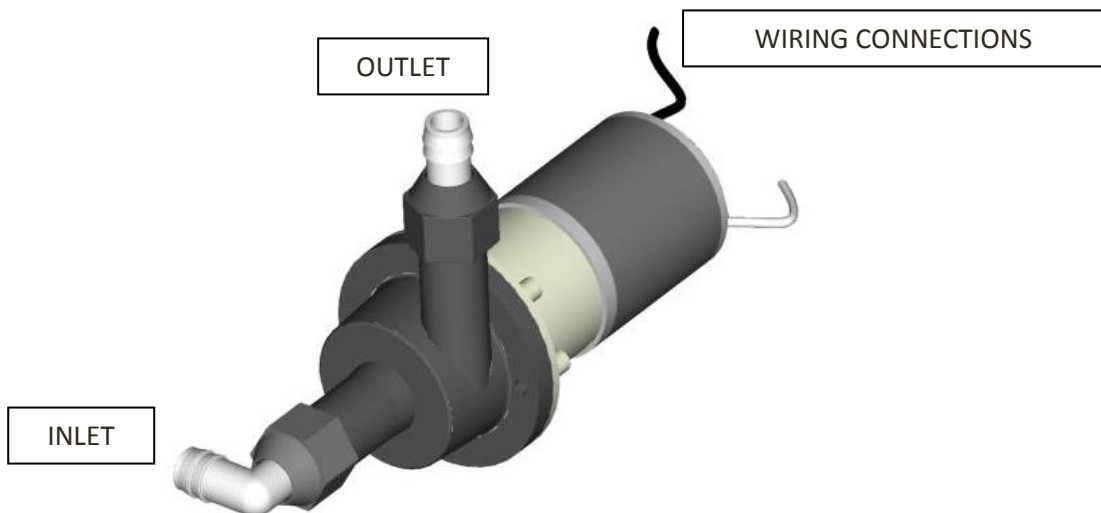


Service

- Part = Flush Pump
- Location = Freshwater Tank

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

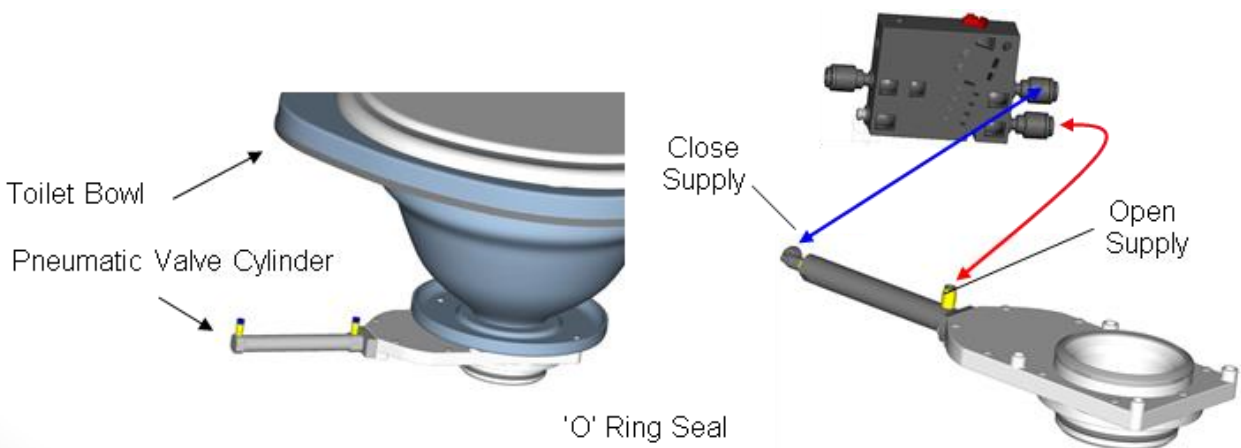


Service

- Part = Toilet Slide Valve
- Location = Toilet Bowl
- Removal....
- DISCONNECT THE POWER TO THE CUBICLE
- REMOVE 4x FIXING SCREWS FROM AROUND THE TOP OF THE BOWL
- PULL & TWIST THE BOWL TO RELEASE THE SEAL FROM THE SOIL TANK
- ONCE RELEASED, REMOVE THE SUPPLY HOSE TO THE FLUSH NOZZLE
- LIFT BOWL OUT & REMOVE THE 2x AIR SUPPLY HOSES TO THE AIR CYLINDER
- REMOVE 4x FIXING BOLTS SECURING THE SLIDE VALVE TO THE TOILET BOWL

CAUTION: As this air supply is from the vehicle (via the control valve), when it is disconnected the air pressure in the pipes will be at approx. 8 bar and will cause the pipe to 'snake around' violently if it is not held firmly.

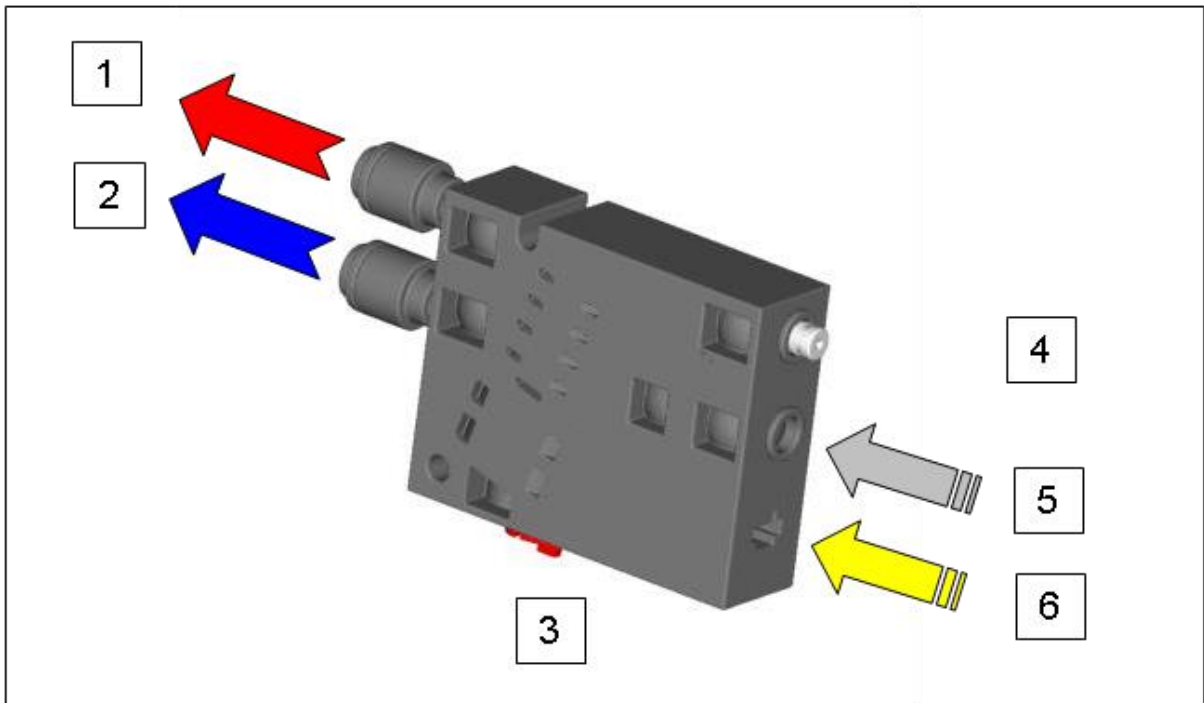
- Replacement....
- POSITION THE VALVE ASSEMBLY ON THE BOTTOM OF THE BOWL AND SECURE WITH THE 4x BOLTS. TIGHTEN BOLTS TO 6KGF·CM USING A TORQUE WRENCH.
- SMEAR SILICONE GREASE OR SIMILAR AROUND THE BLACK O-RING ON THE PNEUMATIC VALVE & PASS BOWL THROUGH APERTURE ON THE COWLING PUSH FIRMLY INTO THE SOIL TANK. ENSURE THAT THE RUBBER FIN GASGET IS NOT IN THE ENTRANCE TO THE TANK AND ON THE BOTTOM OF THE VALVE.
- RECONNECT THE AIR PIPES TO THE CYLINDER AND THE INLET PIPE TO THE FLUSH NOZZEL
- CONNECT THE SLIDE VALVE OUTLET TO ROUTING PIPE TO SOIL TANK.
- START THE VEHICLE ENGINE & SWITCH ON THE WC MASTER SWITCH. WAIT UNTIL THE VEHICLE AIR PRESSURE IS AT MAXIMUM BEFORE ATTEMPTING TO FLUSH THE TOILET.



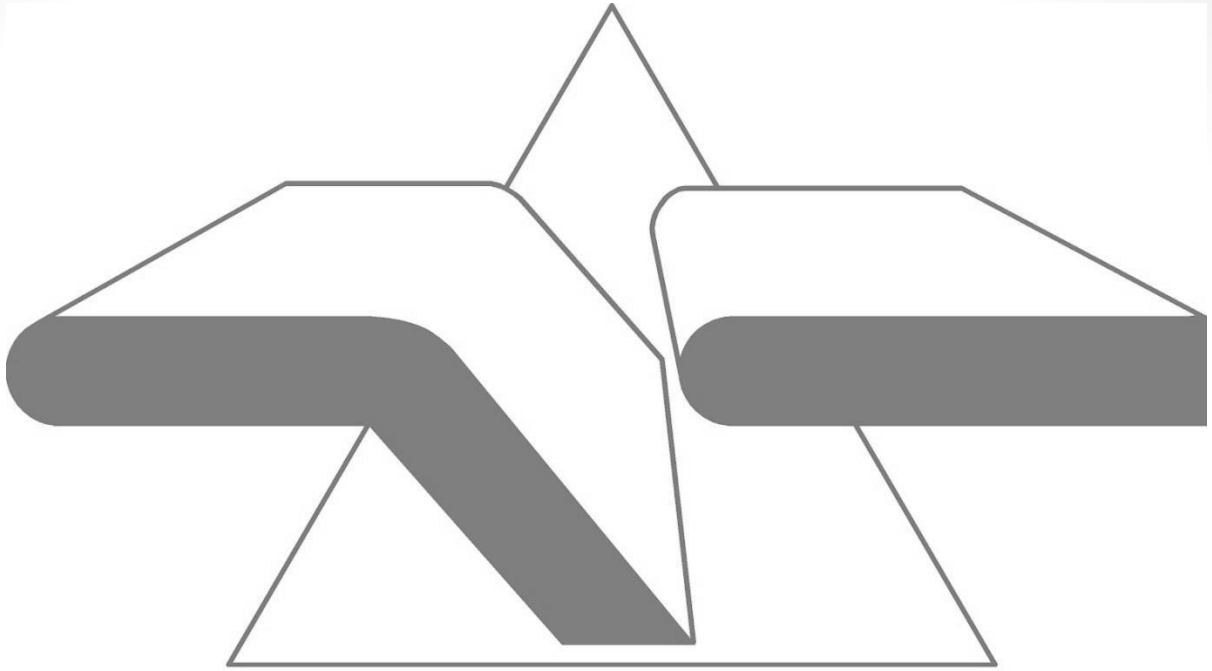
Service

- Part = Toilet Valve Control Box
- Location = Mounted Next to the PCB
- Replacement...
- DISCONNECT THE POWER TO THE CUBICLE
- UNCLIP THE BLACK CONTROL VALVE FROM ITS LOCATION
- REMOVE THE ELECTRICAL CONNECTOR FROM THE VALVE
- REMOVE THE 3x PIPES FROM THE VALVE
- RECONNECT NEW VALVE MAKING SURE THAT THE PIPES ARE IN THE CORRECT LOCATION

CAUTION: As this air supply is from the vehicle (via the control valve), when it is disconnected the air pressure in the pipes will be at approx. 8 bar and will cause the pipe to 'snake around' violently if it is not held firmly.



1. AIR SUPPLY OUT – TO FRONT OF CYLINDER TO OPEN SLIDE VALVE
2. AIR SUPPLY OUT – TO END OF CYLINDER TO CLOSE SLIDE VALVE
3. OVERRIDE SWITCH – SWAPS PORTS 1 & 2 OVER
4. EXHAUST – MUST BE KEPT CLEAR
5. AIR SUPPLY FROM VEHICLE – 10BAR MAX
6. ELECTRICAL CONNECTOR



Shades Technics

www.shades-technics.com