

ALAVO

DOLPHIN ALAVO

THE MODULAR BEHIND MIRROR WASHROOM SOLUTION

O & M MANUAL – US\CA



Last updated May 2025 – Revision C



ALAVO

DOLPHIN

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ALAVO THERMOSTATIC MIXING VALVE

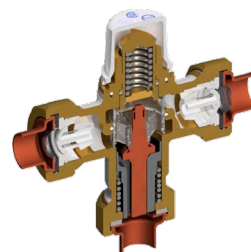
The Heatguard® 160 is a high-performance Thermostatic Mixing Valve designed to control the water temperature to individual or multiple fixtures

PERFORMANCE

Adj. outlet temp range	95 – 120°F (35 – 48.9°C)
Factory set temp range	115 – 120°F (46.1 – 48.9°C)
Temp. hot supply	120 – 180°F (48.9 – 82.2°C)
Temp. cold supply	39 – 80°F (3.9 – 26.7°C)
Maximum pressure	145 psi (1000 kPa)
Flow rate, minimum	0.34 gpm (1.3 l/min)
Flow rate, maximum	11 gpm (42 l/min)
Permitted supply pressure variation:	±20%
Flow rate @ 50psi pressure loss:	11 gal/min (42 L/min)



HEATGUARD®
THERMOSTATIC MIXING VALVES



CERTIFICATIONS

The Cash Acme Heatguard® 160 LF is certified to ASSE 1017, ASSE 1069, ASSE 1070, CSA B125.3, NSF/ANSI 372, NSF/ANSI/CAN 61, and listed by ASSE, CSA, and IAPMO for use in accordance with U.S. and Canadian plumbing codes.

IMPORTANT NOTES

Failure to comply with all aspects of these instructions may result in unsafe performance.

All installations must comply with relevant State and Local Authority requirements.

Non return valves:

Non return valves are integrated in the cold and hot water inlets of the valve. For correct and safe system function, ensure that the check valve is clean of debris and functioning correctly

Flushing supply line:

Flush supply lines thoroughly before connecting Dolphin Alavo unit. Do not allow dirt, teflon tape or grease to enter TMV.

Not flushing the system properly is the most common cause of system difficulties.

For installations with poor or unknown water quality, install a strainer prior to the Alavo system inlets so valves are protected from dirt and debris.

Delivery Temperature:

The temperature of the hot water supplying the mixing valve should be at least 27°F higher than the maximum required valve setting. Every valve is factory set between 115°F and 120°F outlet temperature, with a 150°F hot water inlet temperature.

Maximum permitted variation in either supply pressure in order to control the outlet temperature to within ±5°F. Excessive changes in supply pressures may cause changes in outlet temperature.

Site Parameters:

Measure and note all site parameters (pressure, temperature, etc.) and check against the specifications of the chosen valve.

If the site conditions are outside those specified for the valve then they must be rectified prior to installing the valve.

Valve MUST NOT be subjected to heat during installation as this may damage the valve internals.

Valve MUST NOT be fitted on steam-supplied systems, but to water systems only. Valve MUST NOT be frozen.

If the valve is installed in a situation where freezing is a possibility, then suitable insulation must be fitted to prevent damage to the valve.

CHECKING / SERVICING THE MIXING VALVE

Note that this thermostatic mixing valve is a SAFETY VALVE. We recommend that the valve is checked at least once per year to ensure its continued function. For installations with poor or unknown water quality, or other adverse supply conditions, it may be necessary to check the valve at more frequent intervals.

The temperature should be checked at the same outlet as was used for commissioning in the first instance. If the temperature is more than 5°F from the commissioning temperature, refer to fault finding guide available online.

There may be some variation in the temperature of the water from the thermostatic mixing valve due to seasonal temperature variations in the cold water supply. The check valve can be easily accessed for cleaning.

IN-SERVICE TESTING

The purpose of in-service testing is to regularly monitor and record the performance of the thermostatic mixing valve. Deterioration in performance can indicate the need for service work on the valve and/or water supplies.

Carry out the test sequence detailed below using the same or equivalent equipment as used for commissioning the valve.

- Check the designation of the thermostatic valve matches the application.
- Check that the supply pressures and temperatures are within the operating range of the valve.
- Check that the supply temperatures are within the range permitted for the valve and by guidance information on the prevention of legionella etc
- Check there have been no significant changes in inlet supply temperatures and pressures since commissioning or the previous in-service test.

If significant changes have occurred, it is recommended to re-commission the valve.

If the mixed water temperature has changed significantly from the previous test results ($\pm 5^{\circ}\text{F}$), record the change and before re-adjusting the mixed water temperature carry out the following checks;

- All in-line or integral strainers are clean
- Any in-line or integral non-return valves or other anti-back siphonage devices are in good working order.
- Any isolation valves are fully open.

CLEANING AND SERVICING

Most domestic water supplies contain calcium which will separate out when the water is heated in a system. The degree and speed of scaling may vary depending on factors such as water flow rates, system design, the hardness of the water and the temperature to which the water is heated.

Deposits of scale may over time form in the valve, particularly at the hot inlet. The formation of the scale may adversely affect the performance of the valve which will be detected during the in-service testing.

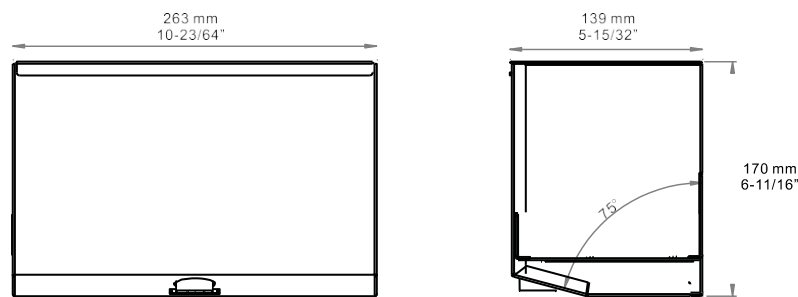
If this occurs it will be necessary to remove the valve for de-scaling and servicing.

- Isolate the hot and cold supply.
- Remove the valve to a clean working area.
- Remove the protective cap.
- Unscrew the headwork of the valve.
- Inspect the components for contamination or damage.
- Clean or replace as necessary
- Clean the valve body and headwork using a propriety de-scaler
- Thoroughly rinse the body and headwork in clean water.
- Re-fit the headwork ensuring correct tightening
- Re-fit the valve assembly

ALAVO HAND DRYER UNIT



TECHNICAL DATA



ITEM CATEGORY	PERFORMANCE DATA
Operating Voltage	110-120 Vac, 50/60 Hz, 0.84-1.0 kW
Warm Air Speed Output	52-90 m/s, adjustable
Motor Type	500 W, 29000 r.p.m. Brush Type, Dual Ball Bearings
Motor Thermal Protection	Auto Resetting Thermostat turns unit off at 95 °C [203 °F]
Heater Element	500 W
Heater Thermal Protection	Auto Resetting Thermostat turns unit off at 85 °C [185 °F] Resets at 75 °C [167 °F], Thermal cut-off at 142 °C [288 °F]
Drying Time	Less than 15 seconds
Stand-by Power	Less than 0.5 W
Circuit Operation	Infrared automatic, self-adjusting
Sensor Range	Standard [170 ± 20 mm], Adjustable, Range [100-230 mm]
Timing Protection	60 seconds auto shut off
Sound Level	MIN 67.4 dB to 71.2 dB MAX@ 1m
Drip proof	IP14

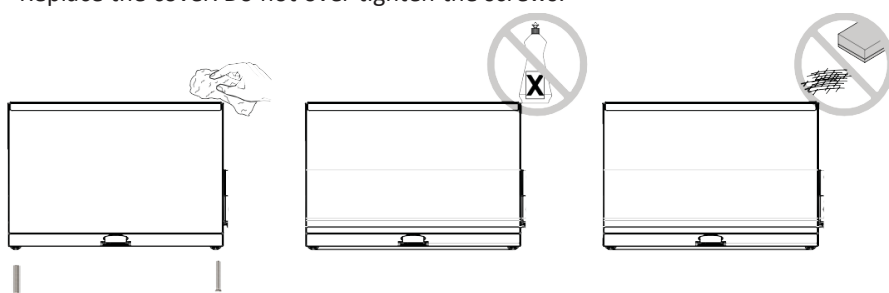
For more detailed instructions on this hand dryer including sensor, heater and airspeed adjustments and instructions on how to change parts go to our website

ALAVO HAND DRYER UNIT

CLEANING AND MAINTENANCE

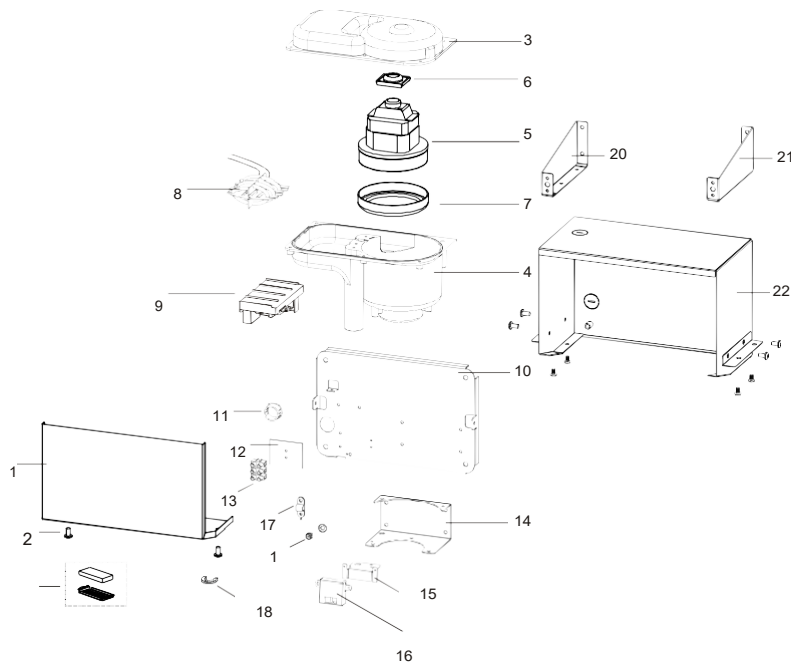
Periodic cleaning of the unit is recommended to ensure optimum performance.

- Isolate the electrical supply.
- Remove the two cover-mounting screws. Remove the cover.
- Clean all dust lint from the interior of the dryer. Wipe the cover with a damp cloth and mild cleaning solution. Do not Soak. Never use abrasives to clean the cover.
- Replace the cover. Do not over tighten the screws.



PARTS LIST

Key	Description	Quantity
01	Enclosure (casing)	1
02	Security Hex screw	2
03	Blower housing (upper)	1
04	Blower housing (below)	1
05	Motor 500w	1
06	Motor rubber (upper)	1
07	Mottor rubber (below)	1
08	Heater assembly 500w	1
09	Circuit board module (CMB)	1
10	Base plate	1
11	Nylon hole bushing	1
12	Insulation Mylar	1
13	Terminal block	1
14	Blower mounting bracket	1
15	Sensor bracket	1
16	Sensor	1
	Sensor (blue)	1
17	Cable clamp	1
18	Cable protector	1
19	Grounding screw	1
20	Left box bracket	1
21	Right box bracket	1
22	Box	1



ALAVO HAND DRYER UNIT

REMOVING AND REFITTING A HAND DRYER



The hand dryer in situ



1. Slide open the fuse holder



2. Remove the plug



3. Undo the 1st retaining screw



4. Undo the 2nd retaining screw



5. Lift out the dryer unit



The dryer unit with the cover on



The dryer unit with the cover off



6. Replace the fuse in the holder

To refit a dryer follow steps 1 to 5 above in reverse order.

TROUBLESHOOTING

TROUBLESHOOTING – DIAGNOSTICS AND REMEDIES

CORRECTIVE ACTIONS FOR INITIAL INSTALLATION FAILURES

Q If the dryer will not run

A First ensure that the breaker supplying the dryer is operational. If it is, disconnect the power and remove the dryer cover. Taking suitable precautions to avoid shock hazard, reconnect the power and check for voltage at the terminal block. Verify that connections are made correctly.

Q The dryer cycles by itself or runs constantly

A Ensure that there is no obstacle on or in front of the infrared sensor. Clean any dirt or debris off the sensor lens. If problems persist, replace sensor.

Q The dryer makes a loud noise and does not run for a complete cycle

A Ensure that the supply voltage is correct. Dryer will make a loud humming noise if the input voltage is too high. Verify voltage requirement on unit rating label and correct supply as required. If CBM has been damaged, replace CBM, infrared sensor module and VR component and cable.

Q The dryer runs but air stream is low pressure and or low velocity

A Ensure that the supply voltage is correct. Dryer will run weakly if the input voltage is too low. Verify voltage requirement on unit rating label and correct supply as required.

CORRECTIVE ACTIONS FOR IN-SERVICE FAILURES

Q If the dryer will not run

A First ensure that the breaker supplying the dryer is operational. If it is, disconnect the power and remove the dryer cover. Replace the CBM and infrared sensor module. Taking suitable precautions to avoid shock hazard, reconnect the power and check for voltage at the terminal block.

Q The infrared sensor only 'sees' close-range objects

A Ensure that there is no obstacle on or in front of the infrared sensor. Clean any dirt or debris off the sensor lens. If problem persists, disconnect the power and remove the dryer cover. Taking suitable precautions to avoid shock hazard, reconnect the power and try carefully adjusting the sensitivity control (yellow shaft in blue box on CBM) to increase the sensing range. If problem persists, replace sensor.

Q The heater gets hot, but no air stream is produced

A Disconnect the power. Remove the dryer cover and disassemble the blower motor/fan housing. Replace the fan motor.

Q The dryer only blows cold air during a full cycle

A Disconnect the power. Remove the dryer cover and disassemble the blower motor/fan housing. Test the thermostat for open circuit. Check the heater element for signs of burning or breakage. Damaged element must be replaced.

Q The air stream is low pressure and velocity

A Check the output nozzle for obstructions. If none are present, disconnect the power. Remove the dryer cover. Remove any dust/lint build up from intake vent slots. Disassemble the blower motor/fan housing. Check the motor brushes for worn condition ($\leq 1\text{-}3/16"$ [30mm] graphite remains) and replace them if necessary

FAUCET & SOAP

FAUCET

Q If the faucet will not work?

A Firstly, ensure the water supply is on and that all shutoff valves are on, so that the valve position is parallel to the pipe. This includes the valves in the hot loop. If it is, then check the faucet is connected to the power supply and make sure all connections are pushed tightly together.

Q The faucet is dripping?

A This is normally due to the solenoid, which is a serviceable part. It could be either the spring, or there could be something keeping the diaphragm open. If it is still dripping, please contact us and ask for a replacement solenoid.

Q The water flow is poor?

A This could be due to the water pressure in the building, 1 to 3 bar is recommended. If the water pressure is normal, check the solenoid has not been done up too tightly. Or check to make sure the aerator is clean.

Q Faucet self-activating?

A The faucet will self-activate if the sensor is too close to the sink, this is because it picks up a reflection off the surface. Check your specific system drawing for recommended install height.

SOAP DISPENSER

Q No soap?

A Firstly, check the power supply is connected, if so, then check the soap dispenser is plugged in. You can check to see if it has power by pressing the grey button on the soap dispenser.

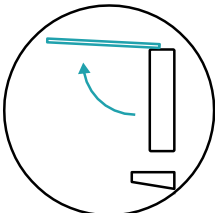
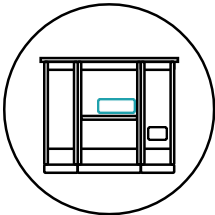
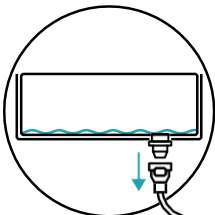
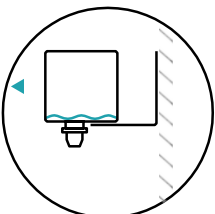
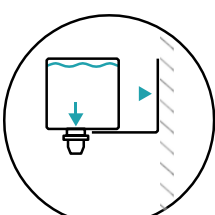
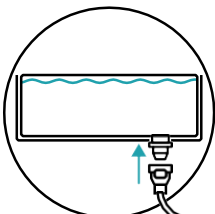
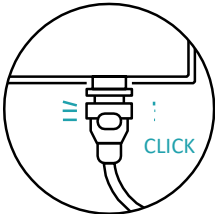
Q You can hear the soap pump but no soap comes out, or it is coming out too thick?

A Check that there is actually soap connected to the pump, if so, make sure it is Dolphin Foaming Soap. If soap is correct, clean the compressor filter. (See section "Cleaning the compressor" of the O & M manual).

ALAVO SOAP CARTRIDGE SYSTEM

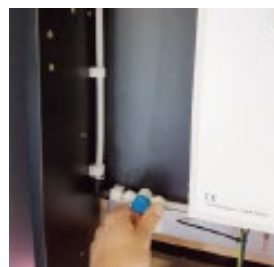
SOAP REFILL CARTRIDGE SYSTEM

REFILL THE SOAP CARTRIDGE SYSTEM

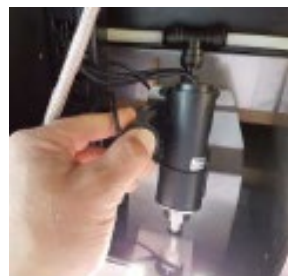
- 1  Open mirrors on front of Alavo
- 2  Locate the white cardboard soap refill box
- 3  Disconnect empty soap refill box by pressing firmly on the button and pulling downwards
- 4  Slide empty soap refill box off bracket. Please recycle cardboard box and ramp
- 5  Pull out spout from inside new soap refill box and slide into bracket
- 6  Push connector firmly onto refill spout
- 7  Click indicates successful connection

To bleed the soap system, attach cartridge and let it drain through into reservoir. The first time this is done the reservoir will be filling from empty and will use most of the cartridge in one go.

Foaming soap refill cartridges can be ordered online or via the phone +44 (0) 1424 202224



Ensure the bleed valve is open at the far left hand end of the units to ensure soap flows through, check for leaks and close valves if any are present



Depress the grey override button on each soap dispenser pump housing and hold until soap begins to flow

REFITTING SOAP DISPENSER

REMOVING AND REFITTING A SOAP DISPENSER

Dispenser may vary in appearance for different models of Alavo. Process is the same.



The 12v soap dispenser in-situ



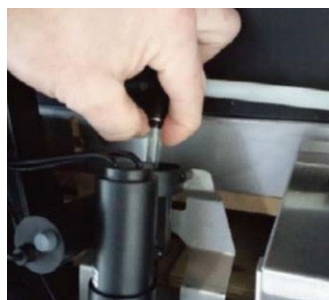
1. Turn off the soap supply at the reservoir



2. And the same at the opposite end



3. Open the pipe clips at the tee



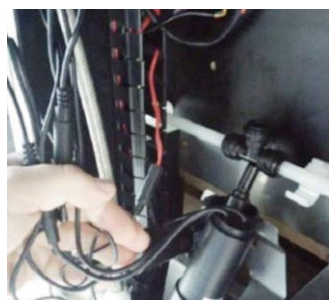
4. Release the tee



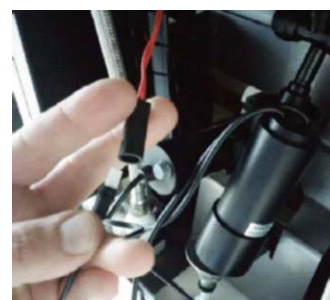
5. Undo the 2 retaining screws



6. Remove the conduit cover



7. Remove all the dispenser wiring



8. Unplug the soap dispenser



The soap dispenser plug



9. Remove the dispenser



Design may vary

To refit a 12v soap dispenser follow steps 1 to 9 above in reverse order

CLEANING THE COMPRESSOR (FOAM DISPENSERS)

Dolphin foam soap dispensers include mesh filter inside the compressor which should be regularly cleaned with warm water. It is recommended to clean the mesh tubing every six (6) months, at a minimum, and after periods of non-use, to avoid decrease in soap volume due to clogging by soap and debris. The mesh tubing should be rinsed with warm water and reassembled on the compressor. Dispenser may vary in appearance for different models of Alavo. Process is the same.



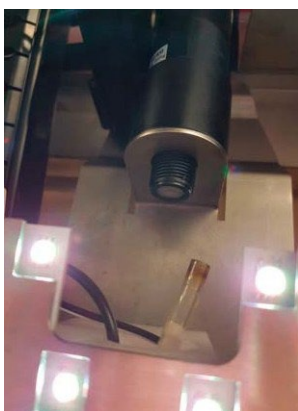
1. First undo the grub screw which hold the sensor in place



2. Then remove the clear tube from the compressor



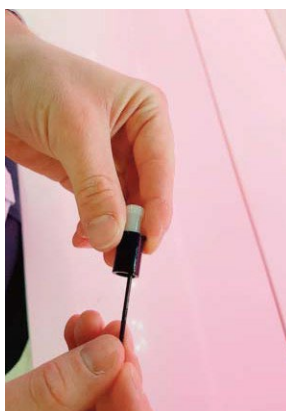
3. Then with a spanner undo the nut



4. Then remove the mesh filter from the bottom of the compressor



5. Push the white filter out of the black surround



6. Clean with warm water, and then reassemble

ALAVO FAUCET UNIT

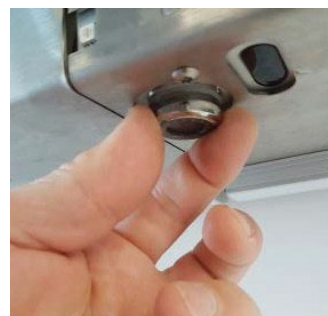
CHANGING THE AERATOR



1. Locate the aerator



2. Use a 22mm spanner to turn the aerator counter-clockwise (anti-clockwise to undo)



3. Remove finally with your hands



4. A new aerator and housing



5. Fit the new aerator. **MAKE SURE** the rubber washer is in place between the aerator and the tap body.



6. Tighten with a ½ turn – **DON'T** overtighten as the housing material is acetal plastic and easily stripped.

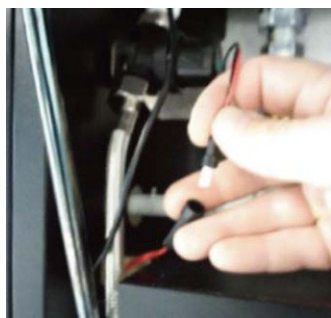
ALAVO FAUCET UNIT

REMOVE A FAUCET SOLENOID AND CLEAN

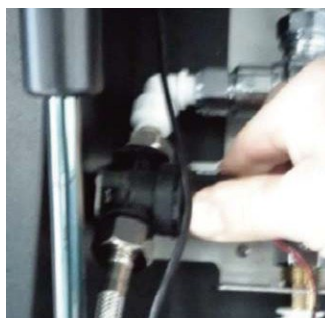
Solenoid may vary in appearance for different models of Alavo. UK model shown below. Process is the same.



1. Isolate the water supply locally



2. Unplug the solenoid



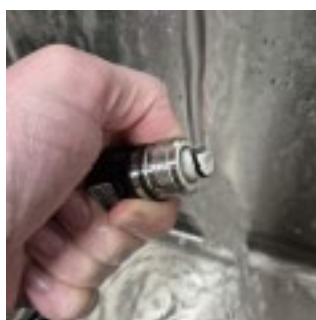
3. Unscrew the solenoid from body



Solenoid clear of body



4. Check diaphragm for particles

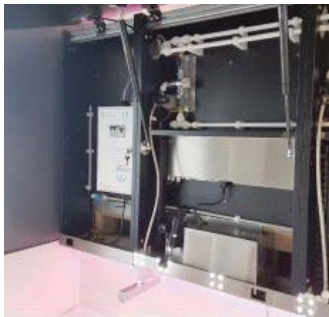


5. Clean with water or replace

Refit solenoid as steps 1 to 3 above in reverse order

ALAVO LIGHTING COLOUR CONTROL

ADJUSTING THE PERIMETER (HALO / SIDE) AND ICON LIGHTING COLOUR



1. Open the left hand mirror to access the control box



2. The control box



3. Press Menu on the Lighting Control



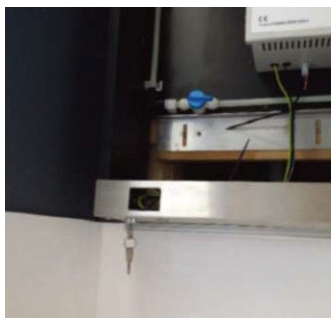
4. Press enter on the Lighting Control – thereafter follow the screen prompts, 'Enter' allows you to adjust the lighting colour in that section (using + and – accordingly), 'Menu' takes you to the next section of the Lighting Control

ALAVO LIGHT SENSOR CONTROL

The refill indicator light serves more than one function:

Blue solid – low soap, Green solid – low paper towels (if fitted), Red solid – service key switch activated, Red flashing – electrical circuit broken i.e. fuse blown, etc., more than 1 indication will give a colour mix i.e. Red and Blue = Purple.

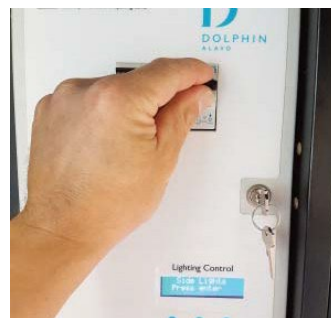
ADJUSTING LIGHT SENSOR CONTROL



1. Locate cleaner's switch and fit key



2. Twist key clockwise to turn on



3. Locate the control box and isolate the power



3. Open control box with the key



4. Control box open showing main PCB



5. Locate blue sensor control on PCB

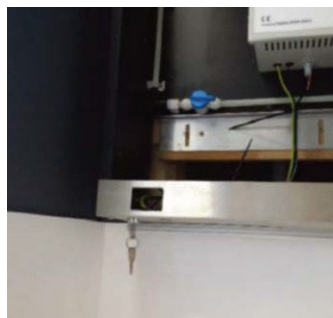


6. Use slotted screwdriver to adjust

Close control box, turn power and cleaner's switch back on and test. Redo steps 1 to 6 if required.

ALAVO CLEANER SWITCH

OPERATING CLEANER'S SWITCH (WHICH DISABLES FAUCET AND SOAP OPERATION WHEN ON)



1. Locate cleaner's switch and fit key



2. Turn key clockwise to turn switch on / anticlockwise to turn switch off.



NOTE The key will not pull out from the switch while the switch is in the on position.

ALAVO CLEANER SWITCH

LIGHT KEY

The refill indicator light serves more than one function:

Blue solid – low soap

Green solid – low paper towels (if fitted)

Red solid – service key switch activated

Red flashing – electrical circuit broken (e.g. fuse blown)

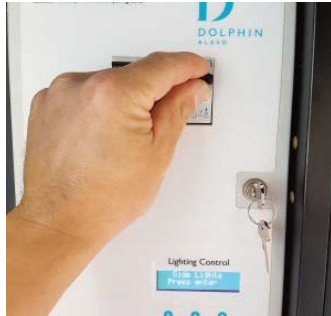
More than one indication will give a colour mix, for example:

Red & Blue = Purple

Blue & Green = Cyan

ALAVO CONTROL SCREEN SETTING

ADJUSTING THE CONTROL SCREEN CONTRAST (CURRENT MODEL)



1. Locate the control box and isolate the power



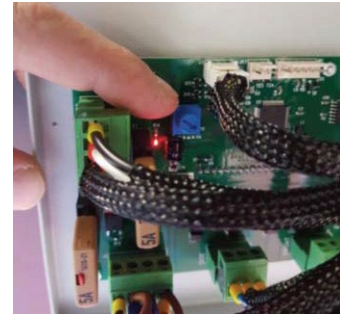
2. Open the control box with the key



3. Locate the PCB on the reverse of the door



4. Locate the Blue potentiometer



5. Adjust the potentiometer to suit

ALAVO MIRRORS

IMPORTANT NOTES

As standard, Dolphin Alavo mirrors are Mirox MNGE as manufactured by AGC Glass Europe – see www.yourglass.com for more technical data.

IMPORTANT NOTES

- The Dolphin Alavo Mirrors are coated with glass products for use in interior applications only.
- For safety applications, the Dolphin Alavo mirror has a safety backing film applied to the painted side of the glass
- The Dolphin Alavo mirror can be used in damp environments (kitchens, bathrooms etc) but should never be immersed in water.
- The use of safety gloves and appropriate personal protection is strongly recommended during all operation of handling and setting of the glass.
- Dolphin Alavo mirrors have a plastic safety film applied to the mirror, the film has a triple function:
 1. If the glass breaks, the splinters stick to the film, thereby preventing injuries and damage.
 2. It protects the paint from scratching
 3. It protects the paint from damp environments

The safety backing films comply with European EN 12600 safety standards.

ALAVO MIRRORS

CLEANING AND MAINTENANCE

Glass can get dirty, especially during the construction of a building! But care must be taken when cleaning – it scratches easier than some might think.

Corrosive contamination must be avoided at all times, especially from plaster, mortar, concrete and cement slurry, all of which are alkaline and therefore capable of corroding the glass surface. Any such impurities must be washed off the glass immediately. Rinse with plenty of clean water to avoid scratching the surface. Use a soft clean sponge, cloth or chamois. Do not try to remove impurities while the glass is dry. Never use sharp objects, such as scrapers, to clean the glass.¹

To protect the glass during construction, Dolphin recommend covering installed glass with sheets of plastic film.

The other teams working on the project should also be informed about handling the glass

properly. When cleaning the mirror, the edges must always be dried quickly and thoroughly.

Dolphin Alavo mirrors can be cleaned with clean water only

IMPORTANT

Never use ammonia-based products or abrasive products (such as anti-limescale products) to clean Dolphin Alavo mirrors.

The Dolphin Alavo mirrors are new generation Ecological mirrors which stand out for:

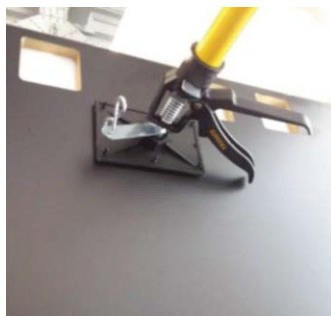
- Copper free metal coating
- Low level lead paints
- Resistance to corrosion

ALAVO GAS STRUT

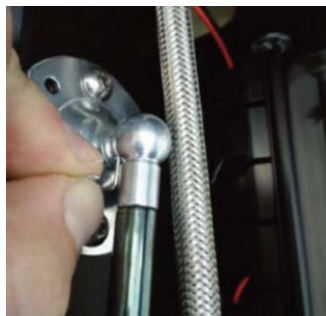
REMOVE AND REFIT A GAS STRUT



1. Open and securely prop the flap



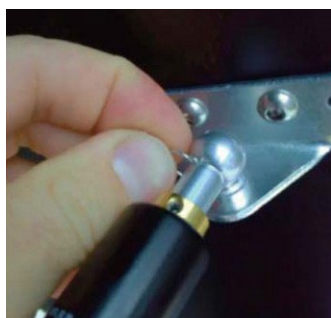
Use a strong and secure prop



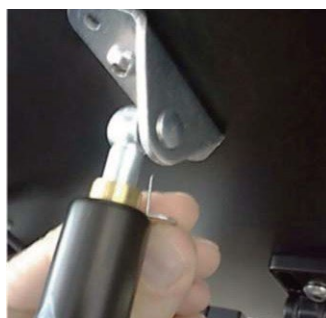
2. Remove one locking pin



Locking pin removed



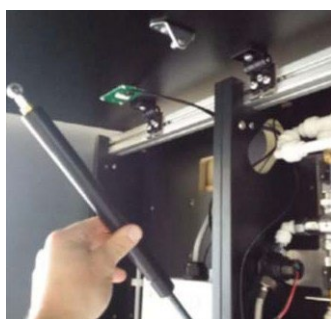
3. Remove the other locking pin



Locking pin removed



4. Pop top of strut off the bracket



Support the strut and lower it



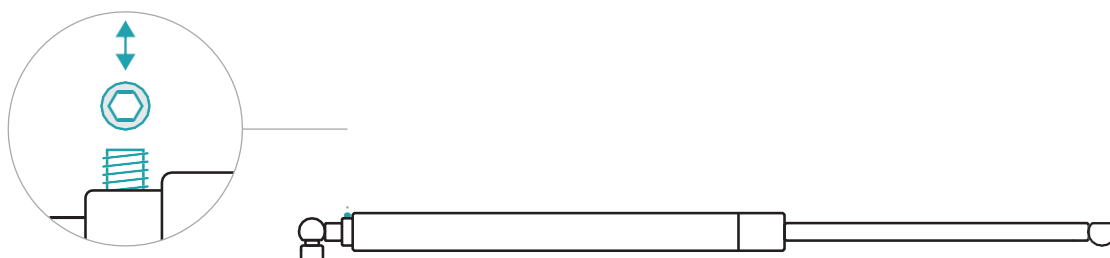
5. Pop bottom of strut off the bracket

To refit a strut follow steps 1 to 5 above in reverse order ensuring the ball sockets are thread tight onto the strut first **NOTE:** A gas strut must only be used with the thin end at the bottom and the fat end (the cylinder) at the top

ALAVO GAS STRUT

ADJUST PRESSURE IN GAS STRUT

To adjust gas pressure, slacken grub screw in short bursts, and maintain equal pressure between strutpairs.



NOTE Test mirror weight repeatedly to ensure sufficient gas remains. Do not over-tighten grub screw.

RELEASE GRUB SCREW IN SHORT BURSTS AND WITH CAUTION

COMMISSIONING CHECKLIST

Tools & Materials

Pipe cutters
 Range of
 screwdrivers 2mm
 hex key
 2.5mm hex key
 5mm hex key
 Adjustable
 spanner Water
 pump pliers Rags
 Camera
 Foaming soap

Initial checks

Mirrors aligned with 1/8" (3mm) gap
 between each
 Mirrors latch securely when in
 closed position
 Open left mirror first
 Open each mirror in sequence
 carefully ensuring no conflict with
 other mirrors
 All plumbing connections tight
 Soap tubing straight and level across
 entire unit from tank to vent without

Function checks

Ensure basin area completely clear
 Turn on power and water
 Close mirror flaps
 Ensure all taps discharge once
 simultaneously
 Wait 30 seconds before activating the
 unit All strip lights and mirror back lights
 on All taps discharging water when
 activated
 All hand dryers activating
 Adjust all lighting to colour required
 Adjust light sensor
 Soap/paper refill light working
 All soap dispensers discharging foam soap
 when activated

Final checks

Take exterior and interior photos of all
 units and email to
 info@dolphinsolutions.com
 Cleaners/facilities staff advised to use
 Dolphin foaming soap ONLY
 Cleaners/facilities staff shown how to
 put unit into cleaning mode with key
 switch Appliance Switch

- Operation Mode vs Service Mode
- Cleaning

All baseplates within units dry (if they are
 wet with either water or soap a leak is
 likely) recheck all pipework and
 connectors

FOR OFFICE USE ONLY

Project name and location _____

Project reference number _____

Commission complete by _____

Date _____

Further actions (leave blank if none) _____



Dolphin Solutions Ltd
Southpoint, Compass Park,
Junction Road
Bodiam, TN32 5BS,
United Kingdom
T +44 (0)1424 202 224
info@dolphinsolutions.com
dolphinsolutions.com

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