



Compressor Use Policy

Aim

The aim of this policy is to ensure all members who use the club’s compressor understand the requirements and safety considerations when doing so.

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1 Revision

This policy is to be maintained and reviewed by the AUSC Committee.

2 Application

This policy applies to all members who intend using the club's compressors and filling equipment. Note that references in this document to 'compressor' or 'compressors' also refer to associated filling equipment.

3 Induction

All members wanting to operate the club compressors must undergo an induction by a member deemed competent to conduct such training. The AUSC Equipment Officer is to keep a register of members who have:

- Successfully completed main compressor induction training,
- Successfully completed portable compressor induction training,
- Been approved to conduct main compressor training,
- Been approved to conduct portable compressor induction training,
- Been approved to change the main compressor filter, and
- Been approved to change the portable compressor filters.

4 Use

Any club member who has successfully completed compressor induction training can use the compressors.

The following are rules to ensure the compressor is used safely:

- Always follow operating guidelines as outlined in club policy and procedures.
- Do not use the compressor unless fully confident you are able to use it safely.
- If you are unsure stop what you are doing and seek assistance.
- Do not fill a cylinder if you cannot identify an up-to-date test stamp, cylinder working pressure and burst disk, or the tank is on the do not fill list below.
- Prior to filling, inspect the cylinder for damage, and do not fill a damaged cylinder e.g. if there is evidence of surface gouging, cuts, dents, or rust pitting.
- Do not fill any cylinder that has lost internal pressure for no apparent reason. Unexpected loss of cylinder pressure may be an indication of cylinder defects or a valve issue.
- Always wear appropriate eye and ear protection when operating a portable compressor and you are within 10m of it, and encourage nearby persons to do the same.
- Never leave scuba tanks filling from the main compressor fill panel unattended for an extended duration (say, longer than 2 hours). This is to ensure the flex hoses are not pressurised indefinitely.
- Do not attempt to start the main compressor if a red light is showing on the compressor operating panel or filter life percentage is inadequate on the portable compressors.
- Do not attempt to change compressor filters unless you have had training in this procedure.
- Always ensure the air-conditioner is on while the main compressor is running.
- Do not adjust the black knob on the fill panel unless you understand the reasoning to do so.

Members must not assist in any way with obtaining air fills for individuals who are not certified to scuba dive by an agency that meets or exceeds the ISO 24801-2 standard for autonomous divers.

Members may not be involved in providing air fills for use by non-members unless by prior agreement of a committee member.

Appendices cover general procedures, safety and training considerations. They are not a substitute for hands on training, are highly generalised and do not cover all situations.

5 Portable Compressors

A member wishing to use the portable compressors must have had induction training specifically for portable compressors, not just for the main compressor.

Members operating a club portable compressor must also consider the following when doing so:

- Placing the compressor:
 - On a on a flat surface that is free of debris and obstructions.
 - Away from sources of air contamination such as smoke and engine exhausts.
 - In a cool area away from direct sunlight wherever possible.
 - Where the noise is minimised to members and neighbours.
- Operating the compressor during hours appropriate to the location and council by-laws.
- The duty cycle of the compressors and allowing time for the compressors to cool down.
- Physical security of the compressors and locking the compressors away after use.
- Filter life (refer the fill timer) and ensuring the filter life is not exceeded.

Portable compressors are principally for use on club-organised trips. Members may, having received approval from the club Exec and having paid the required fee, use the compressors for privately arranged trips if fills are provided only to members. Any damage to the compressors is at the personal risk and liability of the member who sought club Exec approval.

6 Tanks not to be filled

The following tanks cannot be filled using AUSC compressors or fill infrastructure under any circumstances even if there is a current hydro stamp, either due to the risks and required control measures associated with them or, in the case of composite tanks, the specific filling requirements that the club is not equipped to handle.

1 Tanks Using the 6351–T6 Alloy

Sustained Load Cracking (SLC) is a specific risk that affects tanks made from alloy 6351–T6. The below tanks have been identified to be made of 6351–T6 Alloy and cannot be filled:

- Luxfer cylinders marked with a special permit or exemption number: 6498
- Luxfer cylinders originating in the UK marked with a special permit or exemption number: 8364
- Wallter Kidde cylinders marked with a special permit or exemption number: 7042
- Other cylinder manufacturers marked with a special permit or exemption number: 6576 or 6688 or 8107 or 8422
- Aluminium composite cylinders (hoop wrapped) marked with exemption number: 7235 or 8023 or 8115

- Luxfer cylinders marked as DOT 3AL with a hydrostatic test date before 1989
- Walter Kidde cylinders marked as DOT 3AL with a hydrostatic test date before 1990
- CIG (Australia) cylinders marked as AS 1777 with a hydrostatic test date before 1991
- Luxfer cylinders originating in the UK marked with a hydrostatic test date before 1996

2 Tanks Made of Carbon Fibre or other composite materials

Carbon fibre and other types of composite tanks are relatively uncommon in SCUBA diving but are widely used in the fire service and have been experimented with in cave diving. These tanks have specific requirements for filling and generally have a shorter lifespan than metal tanks, without exhibiting the same visible signs of wear. Filling these types of tanks requires specialized equipment designed to control both the pressure and fill rate to protect the cylinder's integrity.

AUSC currently lacks the expertise and appropriate filling system with the necessary flow rate limiters to safely handle carbon fibre and other composite tanks.

7 Document control

Revision (Date)	Person	Comments
0 (13/10/2015)	Author: David Warren Reviewed: Committee (via Meeting 13/10/2015) Approved: David Warren	Document released to club membership. Note: Split section from training chapter. Incorporated SOP 9 <i>Operation for Tank Refill Compressors</i> (developed by Tim Brown) within policy.
2 9 September 2024	Author: Jade Bruggeling and Tim Brown Reviewed: 22 nd September via committee chat Approved: Committee vote 2 nd October	Amended letterhead to refer to AU Sport & Fitness Enhanced language around inspecting tanks for damage Added considerations for portable compressors Added list of tanks to never fill 6351–T6 alloy and composite tanks Complete rewrite of all appendices for current compressor systems Incorporation of existing training outline into appendix Incorporation of existing safety poster into appendix

Appendix A Start-up / Shutdown main club compressor

The following is to occur when the club's main compressor system is under normal operations:

A.1 System Start Up

1. **Turn on Room Aircon:** Press the "On" button on the air conditioner remote while aimed at the air conditioner. Compressors generate a lot of heat! Always ensure the aircon is on when operating the compressor.
2. **Inspect the B-SECURUS System:** Verify that the B-SECURUS filter moisture monitoring system shows normal operation indicated by a green control light.
3. **Ensure Clean Air Intake:** Confirm that the compressor room is free from debris, the compressor air intake area is unobstructed, and no obvious contamination is present.
4. **Turn On the Compressor:**
 - Ensure the main power switches are set to the "ON" position.
 - Ensure bank tanks and master air valves fully open and in the "ON" position.
 - Ensure pressure is below 300 bar. The system will not start by design above 300 bar.
 - Press the green power on button to start the compressor.
 - Allow the compressor to start and gradually build pressure.
 - Watch the pressure gauge and listen for potential leaks to ensure the compressor is operating properly. Do not leave the compressor unattended during startup.
5. **Set Pressure Control:** Verify that the pressure control valve on the fill panel is set according to the required tank pressure for the 200-bar system side before filling tanks. Pressure can be set higher for 230 bar tanks or lower for 207 bar alloy tanks as required. Do not exceed 240 bars otherwise the overpressure valve will be triggered and continually bleed air.

A.2 Monitoring During Operation:

- **Monitor Pressure:** Keep an eye on the fill panel pressure gauges to ensure the compressor is operating as expected and not overfilling tanks or leaking air unexpectedly.
- **Check B-SECURUS System:** During operation, the B-SECURUS system will monitor moisture levels. The system should show normal conditions by a green indicator.
 - If the indicator turns yellow it means the filter is nearly due for replacement with around 12 hours remaining.
 - If the indicator turns red, it means the filter is saturated and needs replacement and the compressor will not run.
 - If blinking red. it means that the compressor cannot communicate with the filter, there is an issue with the monitoring system and the compressor will not run.
- **Auto Condensate Drain:** Every 15 minutes the system will automatically drain condensate. No manual intervention is required beyond ensuring the condensate tank situated at the lower front of the compressor is not full.
- **Maximum Pressure:** During operation, the compressor will intelligently switch in the bank tanks as required automatically. Should the system become full at approx. 330 bar the compressor will automatically turn off. The compressor cannot be turned back on by design until the pressure has reduced below 300 bar.

A.3 Manual Shutdown

1. **Remove scuba tanks from whips:** Finish filling all tanks connected to the system and remove them from the fill whips.
2. **Turn Off the Compressor:** Use the red button on the compressor to turn off the compressor. There will be some air discharge from the compressor while this occurs which is normal.
3. **Turn Off the Air Conditioner:** Press the "Off" button on the air conditioner remote while aimed at the air conditioner.
4. **Drain Condensate:** If condensate tank is full or nearly full, drain tank into an appropriate container and reattach to compressor. Ensure the hose is not kinked when reattached.

A.4 Automatic Shutdown

1. **Remove scuba tanks from whips:** Finish filling all tanks connected to the system and remove them from the fill whips.
2. **Switch the Room Air Conditioner to "Timer Mode":** Use the aircon remote to enter an "off" time for the air conditioner. If the system is nearly full this can be a shorter period. If the system is nearly empty a much longer time will be required. Always be cautious and double your estimated time. If in doubt, set the timer for 20 hours which will allow time for the banks to completely fill up plus a margin of error.
3. **Automatic Shutdown:** The compressor will turn off automatically when the bank tanks are full which occurs around 330 bars. No further action is needed beyond locking up the shed.

A.5 Emergency Shutdown

1. **Contact Emergency Services:** If there is imminent danger or injuries immediately contact emergency services on 000 and evacuate all non-injured members from the surrounding area. Do not move injured people unless it's safe to do so and absolutely necessary as it could cause further trauma or in the cases of spinal injury lead to permanent disability.
2. **Turn Off the Compressor:** If safe, use the red button on the compressor to turn off the compressor. If the compressor area is not approachable power can be isolated on the main power distribution board next to the compressor. It is labelled "compressor".
3. **Isolate air distribution system:** If safe, turn off the master air valve located left of the bank tanks as looking at them. Turn off the fill panel valve located to the right of the compressor under the auto selector.
4. **Electrical Fire:** There is 9kg CO₂ (Carbon Dioxide) fire extinguisher located in the compressor room next to the door. These are different from traditional dry power extinguishers in that they operate by displacing the oxygen while cooling the area. If the decision has been made to discharge the CO₂ fire extinguisher always start extinguishing the fire at the back of the room and work towards the door taking care to not inhale CO₂. Only attempt if you are comfortable doing so and you have assessed the situation as to the appropriateness to do so.
5. **Notify Committee:** Notify the committee so emergency procedures can be implemented.

Appendix B Main Compressor Filling Procedure

This procedure relates only to the normal operation (i.e. not maintenance or fault correction) of the main compressor fill panel.

Pre-checks:

- Check the bank fill pressure gauge on the right side of the panel. If it is lower than the desired tank fill pressure or becomes so during filling, the fill process will slow as the tanks become filled directly from the compressor instead of from the banks.
- Check that the tanks to be filled are in good condition, have a current hydro test stamp and are not of a type that may not be filled using the fill panel (refer the Compressor Use Policy).
- Note whether the tank to be filled is DIN or yoke.
- Identify the Working Pressure (WP) of the tanks.
 - Tanks with WP of 232bar are filled with the black-hose whips.
 - Tanks with WP of 300bar are filled with the red-hose whips.
 - Tanks of WP less than 232bar are filled using the black-hose whips but the fill pressure must be reduced using the black knob on the fill panel. On no account is the fill pressure to be set above 240bar, or over-pressure off-gassing will occur, and the compressor will continue filling indefinitely.

Filling the tanks:

- If the tank valve is DIN, remove the yoke/DIN adaptor from the whip.
- Attach the appropriate fill whip (red or black) to the tank valve in the same way and to the same tightness that you would a first stage.
- Ensure tank valve is closed.
- Lift the black lever at the whip/panel interface into the vertical position.
- Listen to the tank valve. If air is escaping from the valve, then remove the tank.
- Open the tank valve until you hear gas passing into the tank.
 - A tank valve that is only slightly open will fill slowly but not become unduly warm. This ensures a 'good fill' at close to working pressure.
 - A tank valve that is wide open will cause the tank and its gas to become quite hot. Once the gas cools during storage, the gas pressure may drop to an unacceptably low level and a top-up may be required.
- Tanks may be left unattended while filling, but it is good practice to not leave them for more than an hour in case a leak develops, and the fill continues indefinitely. Leaving tanks filling for longer periods of time also means the flexible hose whips remain pressurised for extended periods; this is to be avoided where possible.

Removing the tanks:

- Listen to the tank being filled. If you can no longer hear air entering the tank, then it is either full or filling from the compressor (i.e. not the banks).
- Close the tank valve being filled.
- Return the black lever at the base of the whip to the rear position. This will close the whip and discharge residual air in the hose to ambient pressure. This is the same as purging your second stage regulator before removing the first stage from the tank valve.
- Remove the whip from the tank valve.

- If the tank is a club tank and does not have a yoke adaptor plug fitted, insert and tighten such a plug as all our tanks are yoke valve by default.
- If the tank is full and the tank is fitted with a 'Full' cap, place the cap on the tank valve.
- If the tank is not full, put the tank aside for later top-up. If it is a member's tank, advise the member that the tank is not full.

Completion:

- Identify the bank pressure as displayed on the fill panel gauge.
- If the final bank pressure is less than 300 bar, leave the compressor on and place the air-conditioner on timer mode and lock up the shed like normal.

Additional Considerations:

- If during filling the bank pressure becomes lower than 280 bar, turn the compressor and air conditioner on and continue filling like normal.
- If bank pressure becomes lower than desired tank pressure you may also consider continuing to fill tanks and put them aside (without the black 'Full' cap on the valve) for later top-up. Alternatively, accept the slower fill rate and fill tanks to full WP.
- If filling more than approx. 12 tanks the bank tanks may fall below 230 bars which is normal and expected. In this mode the auto selector will automatically switch the bank tanks off as required and divert all air from the compressor directly to the tanks being filled. No manual intervention is required, filling operations can continue as normal but will be slower. If there are no tanks being filled the auto selector will automatically turn the bank tanks back on.

Appendix C Start-up / Shutdown portable compressors

The following is to occur when the club's portable compressors are operated:

C.1 Start Up

1. **Location:** Ensure the compressor is setup on a flat surface, the area is free of debris and obstructions, and the compressor is located away from sources of air contamination such as wood fires, gas appliances, car or engine exhaust fumes.
2. **Electrical:** Connect compressor to an electrical circuit with sufficient capacity. Do not use two compressors on a single power circuit as it will likely trip. If using an extension cable use Heavy Duty 1.5mm extension cables of the shortest length possible and do not coil them up.
3. **Check Filter:** Ensure filter enclosure, over pressure valve are in good condition. Ensure the B Timer is showing sufficient filter capacity remaining.
4. **Check Oil Level:** Ensure the compressor has sufficient oil by checking the oil dip stick. Refill if necessary, using the spare fully synthetic compressor oil.
5. **Open Drain Valves:** Open all three condensate drain valves to release moisture.
6. **Close Drain Valves:** After draining, close all three condensate valves.
7. **Connect Fill Hose to Tank:** Attach the fill hose to the scuba tank's valve and ensure the tank that is being filled has its valve open
8. **Turn On the Compressor:**
 - Flip the main power switch to the "ON" position.
 - Allow the compressor to start up and pressurize gradually.
9. **Monitor Pressure Gauge:** Keep an eye on the pressure gauge as the tank fills. Do not leave the compressor unattended while filling. The compressor will not automatically shut off when the tank is full, instead it will vent the excess air out the Over Pressure Valve.
10. **Cycle Condensate Valves:** Open and close all three condensate valves every 15 minutes while filling tanks.
11. **Duty Cycle:** Allow the compressor to rest after every two or three fills to cool down. Unlike the club compressor, the portables do not have a 100% duty cycle.

C.2 Shut down

1. **Close the Tank Valve:** Once the scuba tank reaches the desired pressure, close the tank valve, release the pressure from the fill hose and disconnect the scuba tank.
2. **Turn Off the Compressor:** Switch off the compressor using the main power switch.
3. **Drain Condensate:** Open all three condensate drain valves to remove condensate after use.
4. **Inspect the Compressor:** Check for any unusual sounds, leaks, or issues. Address them as needed.
5. **Store the Compressor Properly:** If not being used, store it in a secure clean dry area which is covered to protect it from dust, moisture, and frost.

Appendix D Filter Replacements

Filter replacements can only be completed by club members with the required training and skills to perform the tasks. Significant damage can occur if the procedures are done incorrectly. For new compressor operators training can be done on the portable compressors under the supervision of a committee member with the required skills and knowledge. The main compressor filters have additional complexities and must only be changed by those authorised.

P21 filters will typically fill around 32 12 litre tanks at 20°C and around 15 to 19 12 litre tanks at 30°C. Follow the filter percentage on the B Timer which will automatically calculate remaining filter life.

P61S filters will fill hundreds of tanks with the lifespan being longer the cooler the compressor room is kept. These will last an average of a year, but this will vary based on compressor usage.

D.1 Procedure for Portable Compressors with P21 Filters

1. **Remove Scuba Tank:** Disconnect the scuba tank from the fill whip.
2. **Turn Off the Compressor:** Ensure the compressor is completely turned off and unplugged.
3. **Drain Condensate:** Open all 3 valves to remove condensate and close when empty.
4. **Release Pressure:** Slowly crack open the OPV bleed valve on top of the filter housing to release any remaining pressure in the system.
5. **Unscrew the Filter Housing:** Place the Bauer filter remover tool into the circular hole on the filter tower below the OPV valve. Unscrew the filter housing by turning it counterclockwise.
6. **Remove the Old Filter:** Once opened, place the lid carefully on down without contaminating the threads. Take out the old P21 filter cartridge using the handle on the top of the filter.
7. **Inspect the Housing:** Check the filter housing for any signs of dirt, moisture, or oil. Clean the housing if necessary before inserting the new filter.
8. **Insert the New P21 Filter:** Carefully lower the new filter cartridge into the housing, ensuring it is seated properly and aligned as per the manufacturer's instructions. Do not drop it in, it must be carefully lowered.
9. **Reassemble the Housing:** Screw the filter housing back into place by turning it clockwise. Ensure it is tightened to prevent air leaks but not over tightened. Close the OPV bleed valve on top of the filter tower.
10. **Test for Leaks:** Plug the compressor back in, turn on, and check for leaks around the filter housing and OPV valve. Listen for hissing sounds and re-tighten or reinsert filter if necessary.
11. **Return to Operation:** Once everything is secure, test the compressor is operating properly by filling a tank. Return to normal operations if everything is working as expected.

D.2 Procedure for Main Compressor with P61S Filter and B-SECURUS

1. **Remove all Scuba Tanks:** Disconnect all scuba tanks from the fill whips on the fill panel.
2. **Turn Off the Compressor:** Ensure the compressor is completely turned off.
3. **Isolate Bank Tanks:** Ensure the bank tank isolator valve is turned off.
4. **Access the Filter Housing:** Locate the filter housing and mechanical separator behind the front panel of the compressor. This is removed using four toolless screws, two on each side.
5. **Release Pressure:** Slowly crack open the OPV bleed valve on top of the mechanical moisture separator located next to the filter housing to release any remaining pressure in the system.
6. **Disconnect the B-SECURUS cable:** Carefully disconnect the B-SECURUS cable. This is a coax BNC connector and will not pull straight off without disengaging it. Be gentle and do not damage the connector or cable.
7. **Unscrew the Filter Housing:** Assemble the Bauer filter wrench attached to the front of the compressor. Carefully place it on the filter lid taking care to ensure B-SECURUS filter socket is not damaged by lining up the cutout in the filter wrench with the coax socket. Unscrew the filter housing by turning it counterclockwise.
8. **Remove the Old Filter:** Once opened, place the lid carefully on down without contaminating the threads. Take out the old P61S filter cartridge using the handle on the top of the filter.
9. **Inspect the Housing:** Check the filter housing for any signs of dirt, moisture, or oil. Clean the housing if necessary before inserting the new filter.
10. **Insert the New P61S Filter:** Carefully lower the new filter cartridge into the housing, ensuring it is seated properly and aligned as per the manufacturer's instructions. Do not drop it in, it must be carefully lowered.
11. **Reassemble the Housing:** Screw the filter housing back into place by turning it clockwise. Ensure it is tightened to prevent air leaks but not over tightened. Close the OPV bleed valve on top of the mechanical moisture separator located next to the filter housing.
12. **Reconnect the B-SECURUS cable:** Carefully reconnect the B-SECURUS cable.
13. **Reconnect Bank Tanks:** Ensure the bank tanks have been turned back on.
14. **Test for Leaks:** Turn the compressor back on and check for any leaks around the filter housing and OPV valve. Listen for hissing sounds and re-tighten or reinsert filter if necessary.
12. **Check the B-SECURUS Indicator:** The B-SECURUS system monitors the moisture level in the filter. After changing the filter, ensure the system is showing a green indicator.
13. **Reattach front panel:** Disassemble Bauer filter tool and place back on the compressor and reinstall the front panel.
14. **Continue to Monitor the System:** Keep an eye on compressor pressure gauges and the B-SECURUS indicator for a few minutes while the compressor is operating to ensure the system is operating properly and building pressure normally.
15. **Return to Operation:** Once everything is secure and tested, the compressor can be returned to normal operation.

Appendix E Suggested Training Outline

Training should be adapted for the level of knowledge of the new operator. Some operators will require more time to grasp the training than others. Below is an outline of topics for consideration.

E.1 Dangers of Compressed Air

- Compressed air can cause serious injuries, including ruptured eardrums, lung damage, and air embolisms if used improperly.
- Air not properly filtered can contain harmful contaminants like oil, carbon monoxide and carbon dioxide which can be harmful or deadly if inhaled in sufficient concentration.
- Compressed air can propel debris at speed causing severe eye injuries and skin abrasions.

E.2 Dangers of Tank filling

- Rapid depressurisation events (Burst disc in tanks, and general compressor system failure)
- Defective, degraded, or over-pressurized tanks can explode, causing severe injury or death.
- Valve detachment under pressure if wrong type (United Kingdom Vs Australia valves and thread differences) causing severe injury or death.
- Not filling tanks in poor condition, looking suspicious, or out of hydro test.

E.3 System Component Introduction

- Explain components of a compressor system including fill panels, auto selectors, compressors and basic theory of operation, bank tanks and how they are used.

E.4 System Safety Introduction

- Electrical safety, isolation, and power requirements when operating compressors.
- OPV (Over Pressure Valve) and how they work, safety systems on the main compressor.
- Main Compressor: Maximum operational pressure 330 bar before auto shutdown.
- Portable compressors: Maximum operational pressure 240 bar before OPV opens.

E.5 Tank fill panel induction

- 200 + 300 bar dual fill panel design and adjustable N200 side of the fill panel main system.
- Fill whips with a Black handle are N200, Fill whips with a Red handle are N300.
- Never connect 200 bar tanks to the 300-bar side on the main system.
- How to connect tanks and fill with demonstration and practise by the new operators.

E.6 Filter management system and filters

- Bauer B-SECURUS traffic light colour system on main compressor and Bauer B Timer on portable compressors.
- Changing filters on portable compressors and main compressors for those authorised.

E.7 Air conditioner system

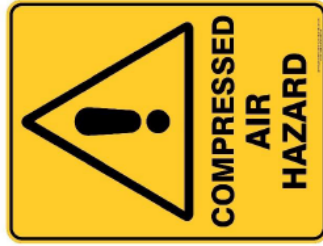
- Optimal temperature and heat output considerations when running compressors.
- Using timer mode on the air conditioner when the main compressor is left running to ensure room temperature remains stable when unattended.

Appendix F Safety Poster

AUSC New Compressor System Overview

This is a new system as of April 2022. If you have not been trained on this system, you are required to complete an induction prior to filling tanks – no exceptions.

- Eight 50 litre 350 bar bank tanks are installed to significantly improve system fill capacity. They are automatically controlled through a Bauer Auto Selector. This is in essence a very fancy air-controlled pressure switch. There are no more valve operations needed and the banks are automatically controlled for optimal operations.
- The compressor has a stop and start button on it like before and auto shutoff when max pressure is reached. We do not have auto start enabled due to the amount of time the system sits unattended. The Filters are approx. 6x the capacity of the old system and must only be changed by those authorised. Filter monitoring is now done through a traffic light system on the top of the compressor - Green = good, Yellow = replacement due within 12 hours, and Red = spent filter or filter management fault. It is important to note the compressor will not run if there is a red light - this is by design to ensure the safety and integrity of our fills.
- The nominal system pressure is 320 bar with a max pressure certification of 350 bar on all components. To maintain safety the system has an emergency air shutoff by the bank tanks, two over pressure valves (one in the compressor at 350 bar and one on the fill panels 200 bar side at 250 bar) and two pressure switches (one on the auto selector, one in the compressor). The over pressure valves and pressure switches are not to be tampered with under any circumstances.
- The fill panel has 3 x 200 bar standard pressure whips on the left of the panel with black handles and 3 x 300 bar whips on the right with red handles for high pressure fills. All whips can be used simultaneously but a 200-bar tank or tank valve must never be connected to the 300 bar red whips. The 200-bar side can be adjusted from the big black knob on top of the fill panel from 200 to 240 bar to accommodate both 207 and 230 bar tanks. When a lower pressure tank is connected, ensure the pressure reducer is correctly adjusted to ensure the lowest pressure tank connected to the black handled whips is not filled above the tanks working pressure.



Compressor Best Practise Tips:

- Use the air-conditioner on warm days to keep the room at the temperature of 23 to 24 °C. This is the optimal temperature - any cooler will cause condensation any warmer reduces filter lifespan.
- Always run the compressor for at least 30 minutes. If you are doing one or two fills, don't turn the compressor on – this reduces premature wear.
- Be proactive and report any issues or concerns.
- Never do anything on the system you are unsure of. Never fill tanks in poor condition or more than one year since their last hydro test.

200 BAR TANKS

300 BAR TANKS