

How to Adjust an Air Compressor Pressure Switch

This guide explains how to adjust an air compressor pressure switch to lower its cut-off pressure, reduce strain on an aging unit, and extend the compressor's service life. It covers two common pressure switch designs: one with a separate top adjustment screw and balance screw, and another with a single screw marked with "+" and "-" symbols. Follow the steps below in order, and always confirm the adjustment by testing the compressor afterward.



Hand using a screwdriver to adjust the top screw on the pressure switch, with the pressure gauge and wiring visible

Purpose

Running an air compressor at high pressures (60–70 psi or more) can overwork an aging motor and increase the risk of failure. Lowering the maximum cut-off pressure — for example, to around 50 psi — reduces strain on the motor and helps extend the compressor's lifespan. This document walks through the process of locating, understanding, and adjusting the pressure switch safely.



Person standing in front of the compressor holding a tool, with the pressure switch exposed, the compressor unplugged, and the blue air hose and pressure gauge visible

Scope

This procedure applies to most air compressors, regardless of size, since pressure switch assemblies are generally similar across models. It covers two example units:

- A three-horsepower compressor, which is the largest size typically run on a standard garage power supply, and which uses a top cut-off screw with an optional side or bottom balance screw.
- A smaller 2.0 HP, 24-liter compressor with dual pressure gauges and a single adjustment screw marked with "+" and "-" symbols.

Required tools and PPE

- Phillips screwdriver
- Wrench (for spring-type adjustment screws)

- Personal protective equipment
- Your compressor's manual, for model-specific adjustment instructions and safety warnings

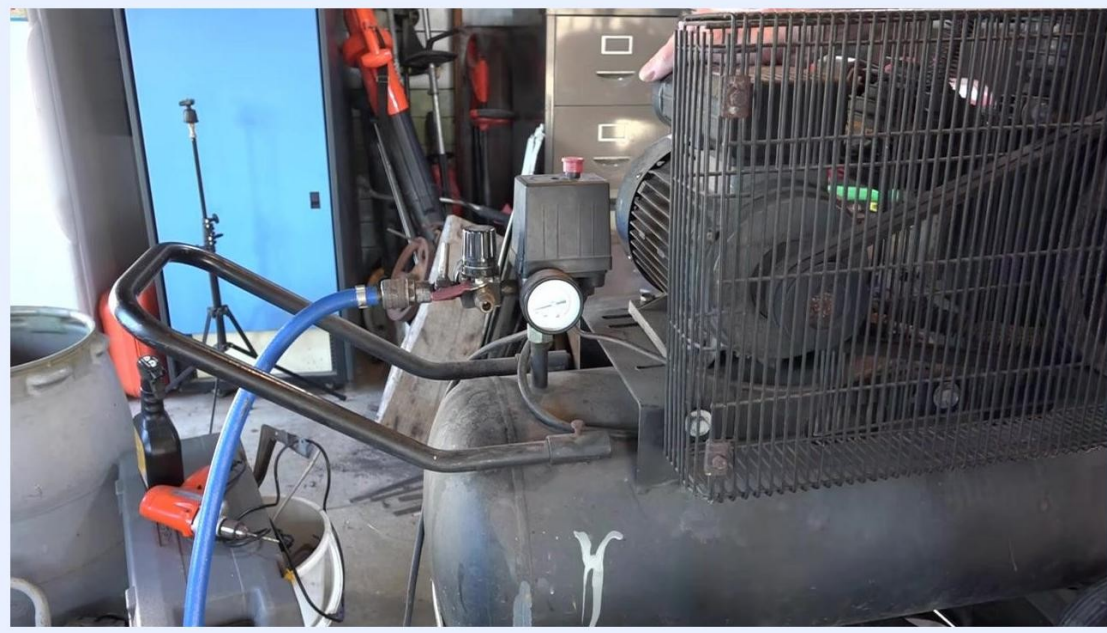


Operator in workshop, leaning on compressor, with a large red "SUBSCRIBE" button in the upper right, inviting viewers to comment and engage. Workshop tools and equipment visible.

Safety precautions

- Pressure switches are factory set for safe operation. Adjusting them can be dangerous and is not generally recommended unless you are experienced.
- Always unplug the compressor or switch off the circuit breaker before making any adjustment. Confirm there is no electrical current going to the pressure switch to avoid the risk of electric shock.
- Release air from the tank before adjusting to reduce internal pressure and strain on the compressor during restart.
- Make only small, incremental adjustments and monitor the pressure gauges closely after each change.
- Never exceed the pressure limits recommended by the manufacturer.

- Check your compressor for a factory warning label, which typically reads something like: "Pressure controls set at factory for maximum safe operation. Do not adjust factory settings."



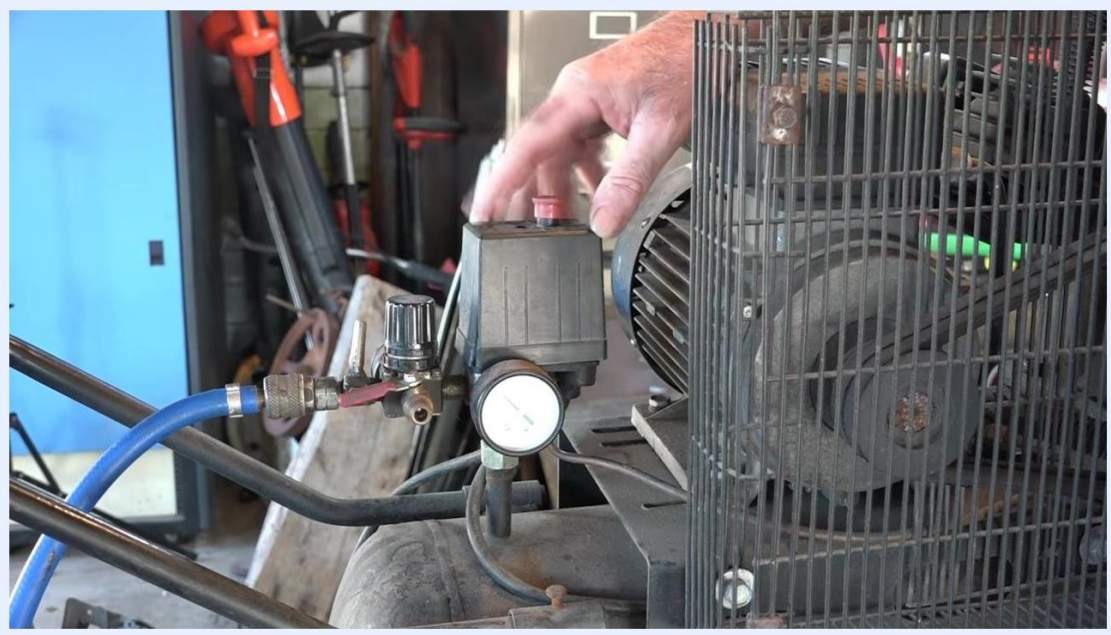
Close-up of the compressor pressure gauge with a finger pointing at the needle near 60–65 psi



Operator leaning on a small blue compressor, emphasizing safety warnings about pressure switch adjustments. Workshop environment with tools, a red compressor, and safety labels visible.

Procedure 1: Adjusting a pressure switch with a top screw and balance screw

1. Assess the compressor's current condition
Check the compressor for signs of aging, such as difficulty reaching previous pressure levels, hard starting, or unusual knocking noises. If the unit struggles to reach 60–70 psi or higher, this is a sign that the maximum pressure setting may need to be reduced.



Workshop view of an old air compressor with tools and equipment nearby, showing the pressure gauge and adjustment assembly

2. Decide on a new pressure setting
Plan to reduce the maximum pressure to approximately 50 psi. This helps prevent overworking the motor and lowers the risk of compressor failure.
3. Start the compressor and observe its operation
Turn on the compressor and let it build pressure. Listen for abnormal noises and watch the gauge to see the maximum pressure it currently reaches — in this example, around 60–65 psi. Confirm that the compressor struggles to exceed this level, which indicates that an adjustment is needed.

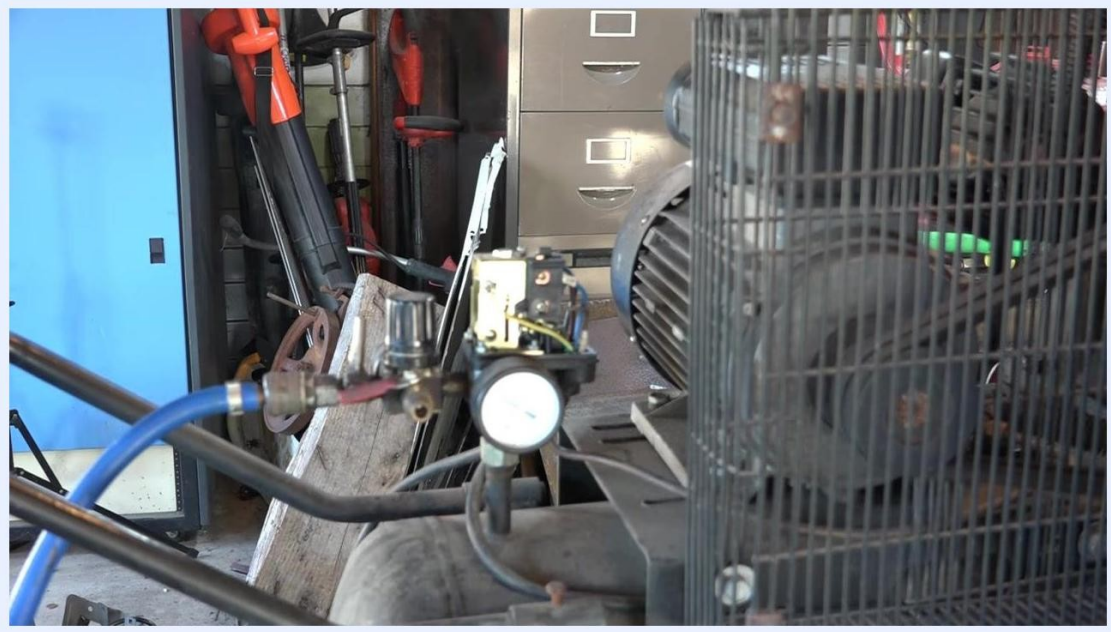
4. Locate the pressure switch assembly
Identify the pressure switch and its adjustment knob or screw, usually located on top of the black housing attached to the compressor tank. Before touching any component, switch off the compressor and unplug it from the power source.
5. Prepare to access the adjustment mechanism
Plan to remove the cover from the pressure switch assembly, and gather any tools you may need, such as a screwdriver.
6. Check the current pressure reading
Examine the pressure gauge closely to confirm the current maximum pressure, with the needle pointing to approximately 60–65 psi. Note the gauge markings in psi (Lb/in²) and bar (KPa), with the red zone marking higher pressures.
7. Remove the pressure switch cover
Carefully unscrew or unclip the cover from the pressure switch assembly and set it aside in a safe place.

Safety note: The pressure switch is factory set for safety reasons. Adjusting it can be dangerous and should only be attempted if you are experienced.

8. Examine the pressure switch mechanism
With the cover removed, observe the internal components: a metal plate, wiring, and one or more adjustment screws or bolts. Some models have a single adjustment bolt on top, while others include an additional screw or nut on the side or bottom.

9. Identify the function of each adjustment screw

The screw or bolt on top of the pressure switch controls the maximum pressure, or cut-off point, at which the compressor shuts off. Some models include a second screw — often called the "balance screw" — usually on the side or bottom, which sets the pressure at which the compressor restarts (the cut-in point). If your model has only one adjustment, it typically manages both cut-in and cut-off together, with a fixed differential of about 30 psi.



Hand using a screwdriver to remove the Phillips screw from the black pressure switch cover, with the pressure gauge, regulator, and motor visible

10. Adjust the maximum pressure (cut-off)

Turn the top adjustment screw or bolt counterclockwise to lower the maximum pressure. For example, setting the cut-off to 100 psi will typically cause the compressor to restart at 70 or 60 psi, depending on the fixed differential of your model.

11. Adjust the balance (cut-in) screw, if present

If your compressor has a balance screw, use it to set the pressure at which the compressor restarts. For example, setting the cut-in to 50 psi with a 100 psi cut-off produces a 50 psi differential.

12. Understand the spring mechanism

Inside the exposed pressure switch, a metal spring is compressed or released by the top adjustment screw. Tightening the screw increases spring tension and raises the cut-off pressure, while loosening it (turning counterclockwise) decreases spring tension and lowers the cut-off pressure. In this example, the gauge currently reads about 60 psi.



Hand using a wrench to adjust the top screw on the pressure switch, lowering the cut-off pressure, with the gauge and wiring visible

13. Turn the adjustment screw to set the new cut-off pressure

Use a wrench or screwdriver to turn the adjustment screw clockwise to increase the cut-off pressure, or counterclockwise to decrease it. In this example, the screw is turned to lower the cut-off pressure, targeting a shut-off point around 50 psi.

14. Confirm the compressor is unplugged before adjusting

Before turning the screw, verify the compressor is unplugged from the mains or that the circuit breaker is off, to ensure no electrical current is reaching the pressure switch.

15. Release air pressure from the tank

Before finalizing the adjustment, release air from the tank to reduce internal pressure. This makes it easier to set the desired cut-off point and

reduces strain on the compressor during restart. Continue releasing air to bring the pressure closer to the target of 50 psi.

16. Set the desired cut-off pressure

Continue adjusting the screw until the compressor stops at the desired pressure — in this example, just over 50 psi. The gauge should reflect the new cut-off point once the adjustment is complete.

17. Test the adjustment

Plug the compressor back in or switch the circuit breaker on. Let the compressor run and watch the gauge to confirm it shuts off at the new setting, around 50 psi. If further adjustment is needed, repeat the process: unplug, release pressure, adjust, and test again.

Safety note: Lowering the cut-off pressure reduces strain on the compressor during startup and may extend its lifespan. Always disconnect power before making any adjustment.



Pressure gauge on the compressor tank showing just over 50 psi, with the pressure switch exposed and the adjustment complete

Procedure 2: Adjusting a pressure switch with a single "+/-" screw

18. Inspect the main compressor and pressure switch assembly
Confirm the compressor is powered off and depressurized. Observe the exposed pressure switch, pressure gauge, regulator, and attached air hose before starting any adjustment.
19. Read the current pressure gauge value
Locate the pressure gauge on the compressor. It typically displays measurements in Kg/cm², KPa (bar), and Lb/in² (psi). In this example, the needle points just above 2 Kg/cm² (approximately 30 psi).
20. Continue monitoring the pressure gauge
Keep watching the gauge as the compressor operates, confirming that the pressure stays within a safe operating range.
21. Move to the smaller compressor for the second adjustment example
This unit is a 2.0 HP compressor with a 24-liter tank and dual pressure gauges, placed on a workbench with tools nearby.
22. Review the factory warning label
Locate the yellow warning label on the pressure switch housing. It typically reads: "Pressure controls set at factory for maximum safe operation. Do not adjust factory settings," along with operating instructions such as "ON: Pull red button. OFF: Push red button." Adjusting factory settings may compromise safety and void your warranty.



Air compressor with an exposed pressure switch, pressure gauge, regulator, and blue air hose in a workshop with tools in the background

23. Identify the pressure switch and regulator controls

Locate the pressure switch housing with its red ON/OFF button and the red pressure regulator knob, along with the dual gauges used to monitor tank and regulated output pressure.

Safety note: Increasing pressure beyond factory settings can damage the compressor or create safety hazards, including over-pressurization or premature motor burnout.

24. Review the controls before adjusting

Confirm you understand the warning label and the correct operation of the ON/OFF button and regulator before making any changes.

25. Locate the pressure switch adjustment screw

Identify the pressure switch assembly near the dual gauges and red regulator knob, and locate the screw head on top of the switch.

26. Examine the adjustment screw closely

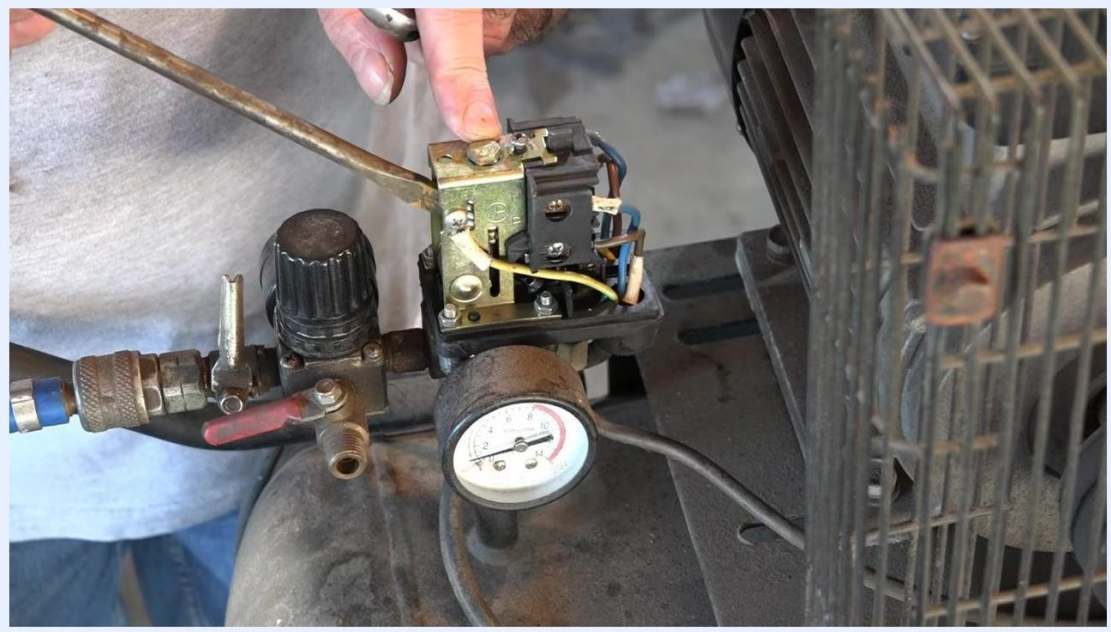
The screw is a Phillips head, and the surrounding metal plate is marked with symbols for reference.

27. Understand the "+" and "-" markings

Note the "+" and "-" symbols stamped on the metal plate around the adjustment screw. Turning the screw clockwise, toward "+", increases the pressure setting. Turning it counterclockwise, toward "-", decreases the pressure setting.

28. Turn the screw to lower the pressure setting

Use the screwdriver to turn the adjustment screw counterclockwise, which decreases the pressure setting. Turning the screw loosens the internal spring, reducing its tension.



Close-up of the pressure switch with the cover removed, showing a hand pointing at the adjustment screw and spring, with gauge, wiring, and regulator visible

29. Observe the reduced spring tension

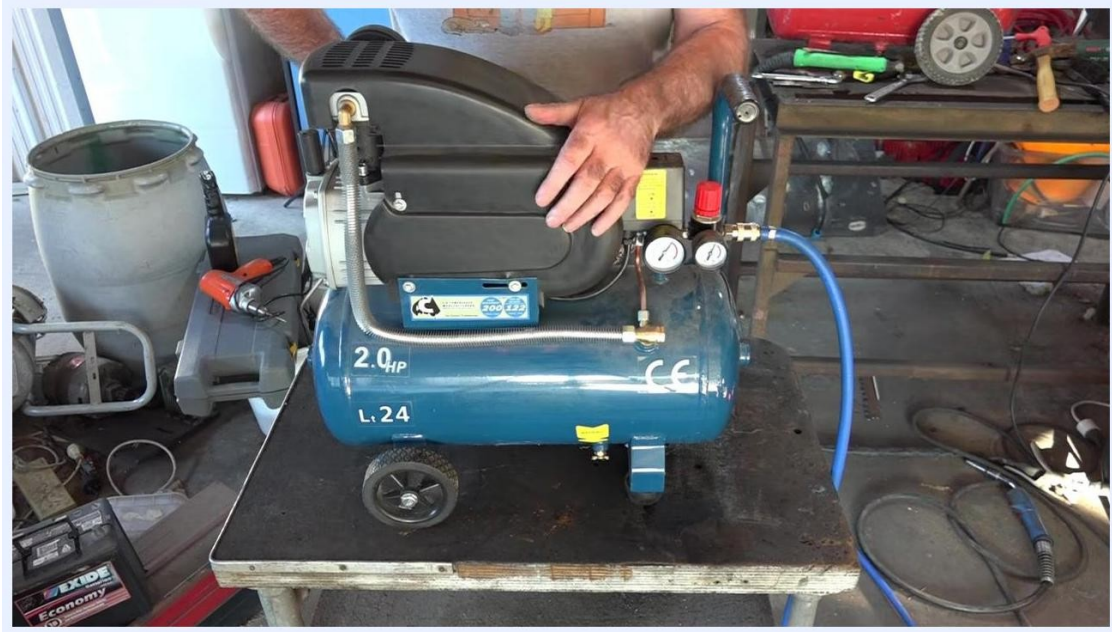
As the screw is turned, the spring inside the pressure switch comes under less tension, corresponding to a lower pressure cut-off setting.

30. Prepare to test the new setting

After adjusting the screw, step back and prepare to reconnect power to the compressor to test the new setting.

31. Prepare to drain air from the tank

Before testing, prepare to release air from the compressor tank to observe the effect of the new setting. Keep the gauges and regulator in view to monitor pressure changes.



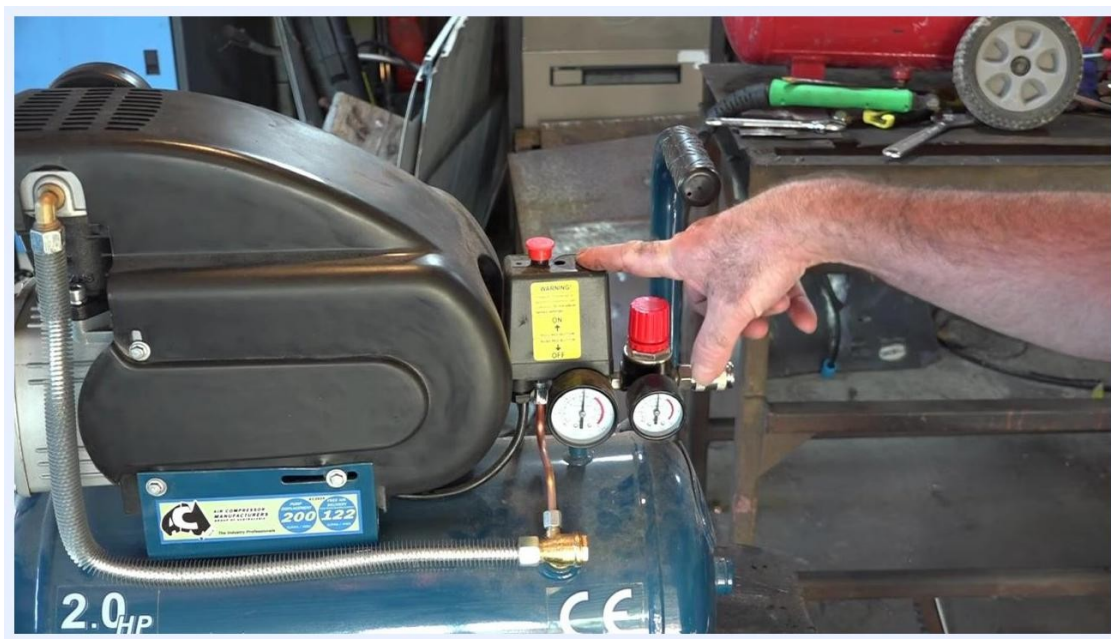
Close-up of a pressure gauge showing Kg/cm², KPa (bar), and Lb/in² (psi) scales, with a finger pointing to the current reading just above 2 Kg/cm²



Close-up of the same pressure gauge with a finger still pointing at the reading



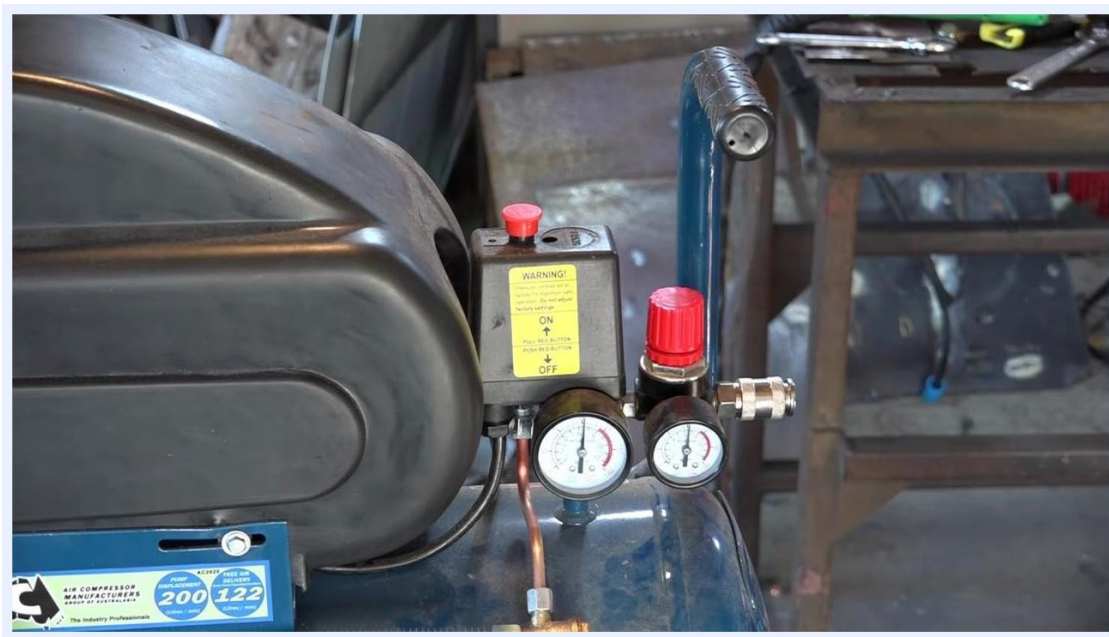
Small blue air compressor (2.0 HP, 24 L) on a workbench with dual gauges, a red regulator knob, and hands resting on the unit



Close-up of the yellow warning label on the pressure switch, reading the factory-set safety warning and ON/OFF instructions, with the red regulator knob visible



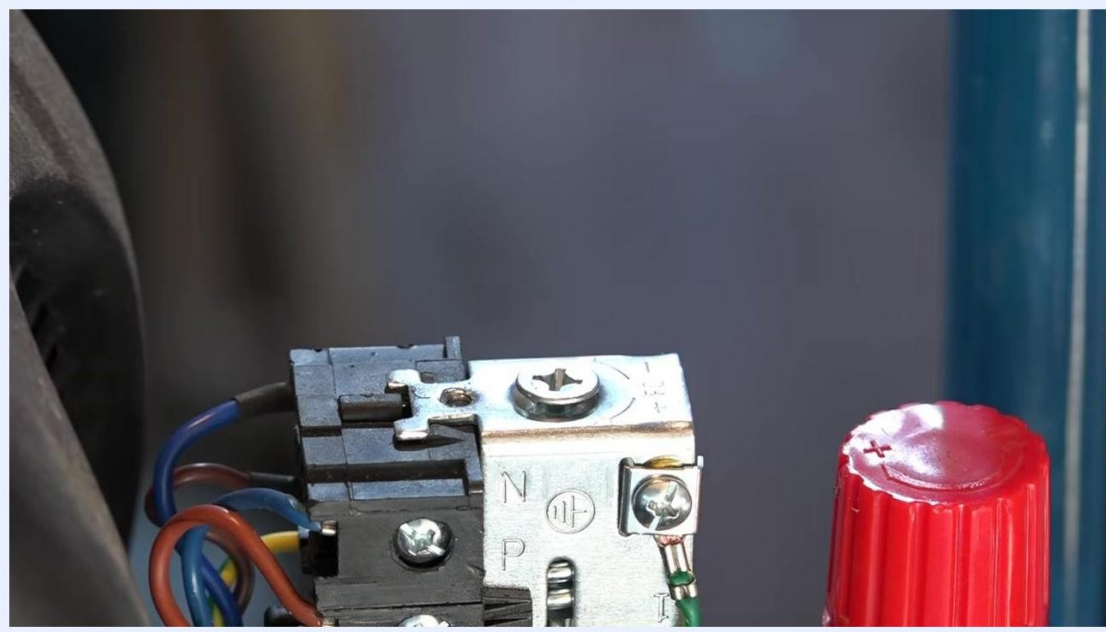
Pressure switch housing with warning label, red ON/OFF button, red regulator knob, and dual pressure gauges



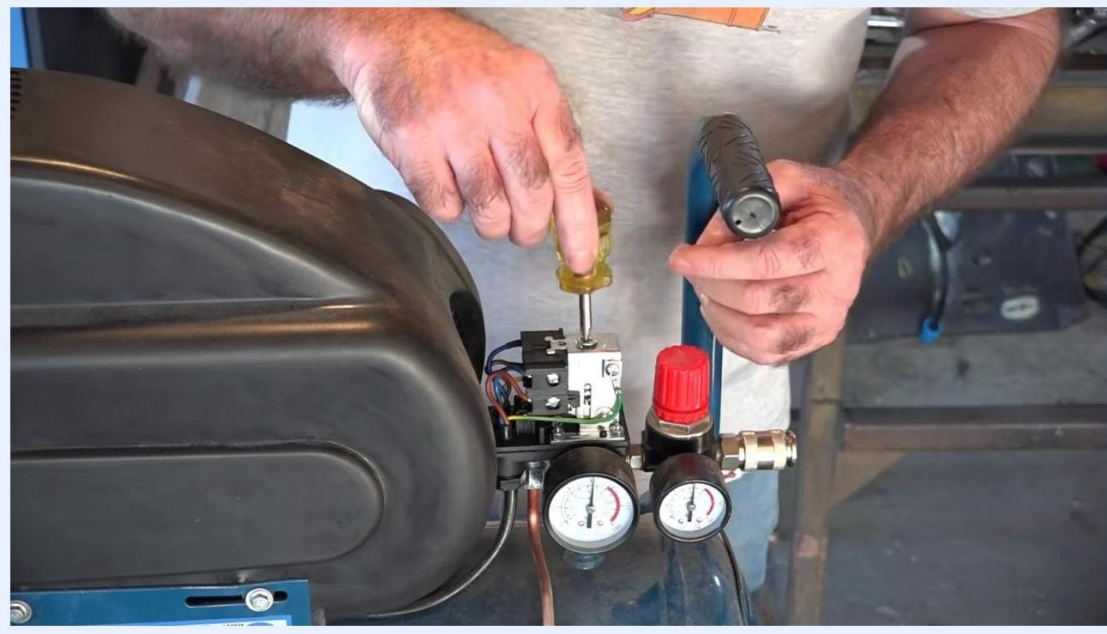
Compressor controls and gauges, including the warning label, red ON/OFF button, and red regulator knob, with a clear view of the full setup



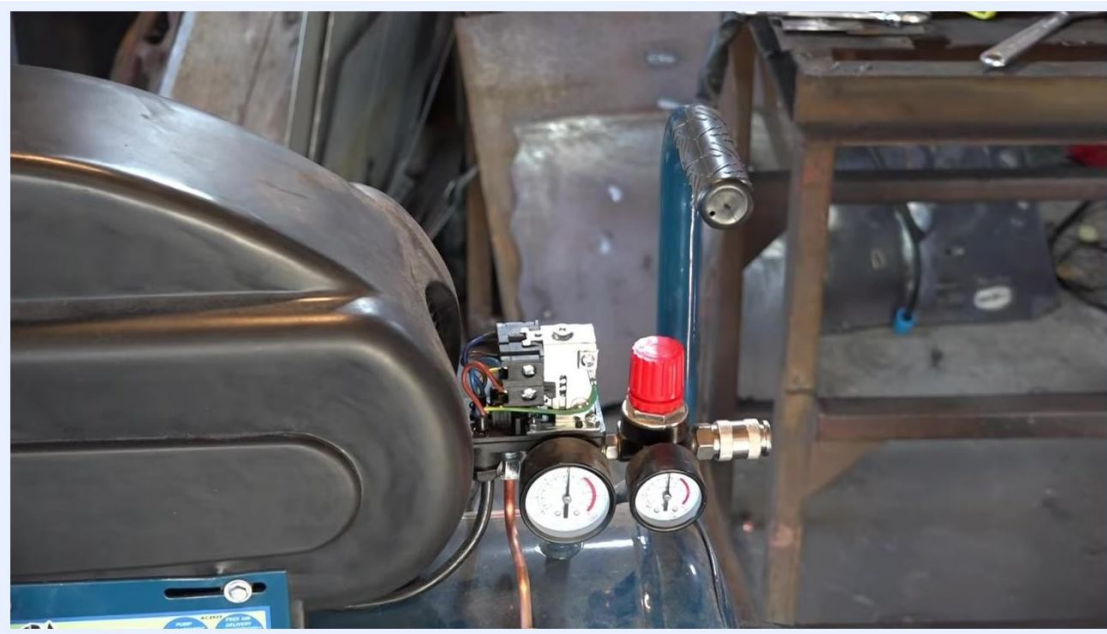
Phillips screwdriver pointing at the adjustment screw on top of the pressure switch, with dual gauges and the red regulator knob visible



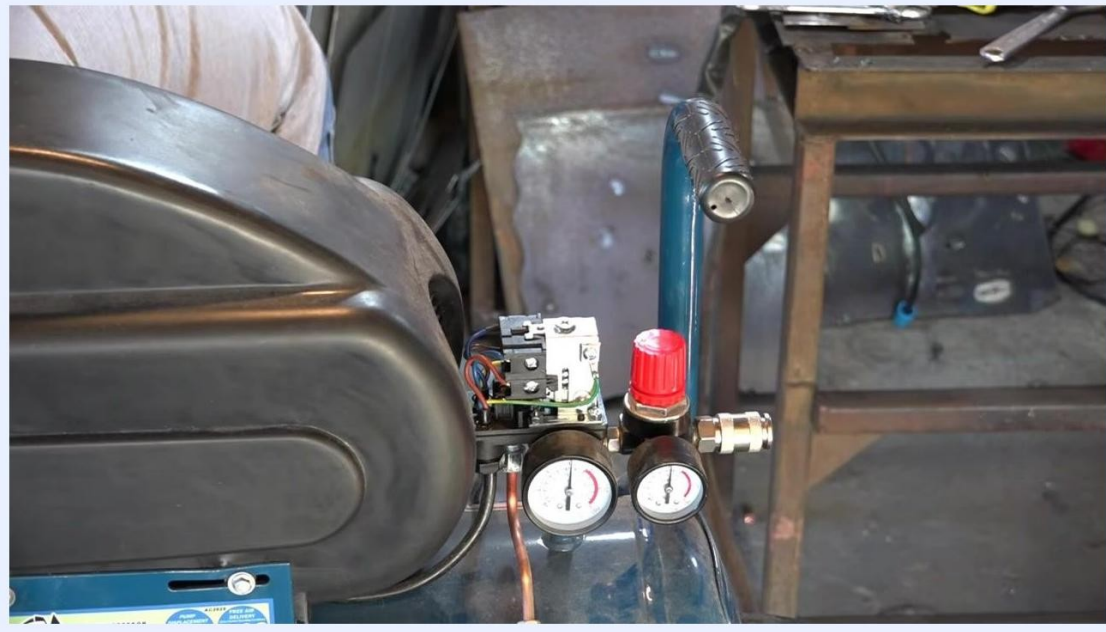
Close-up of the pressure switch adjustment screw, Phillips head, with visible markings and wiring, and the red regulator knob to the right



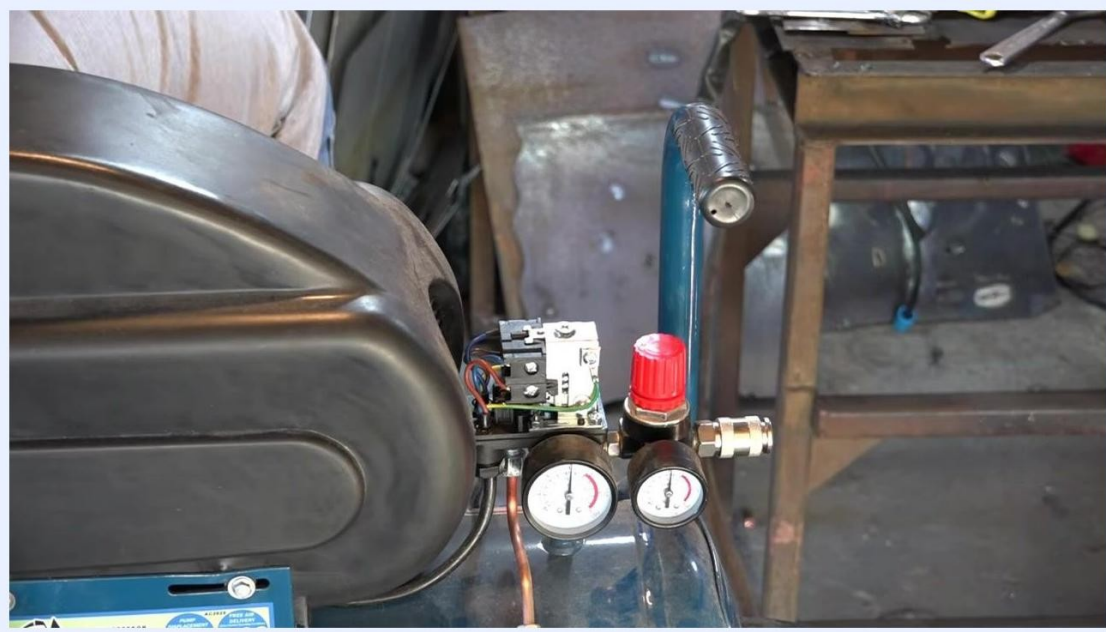
Close-up of the adjustment screw with "+" and "-" symbols marking the direction for increasing or decreasing pressure



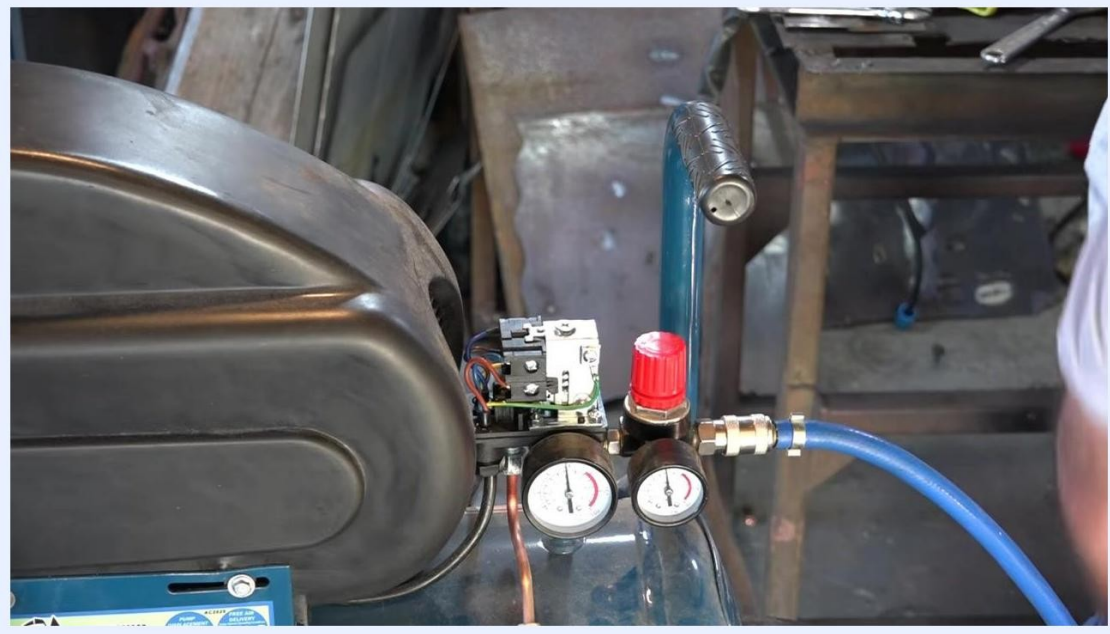
Hand turning the adjustment screw counterclockwise to decrease pressure, with the screw and markings in close-up



Hand and screwdriver turning the adjustment screw as spring tension is reduced



Compressor assembly on a workbench with the pressure switch exposed, dual gauges, and red regulator knob visible, ready for testing



Compressor with a blue air hose attached, positioned to drain air, with gauges and regulator visible

Testing and verifying the new pressure setting

32. Release air from the compressor tank

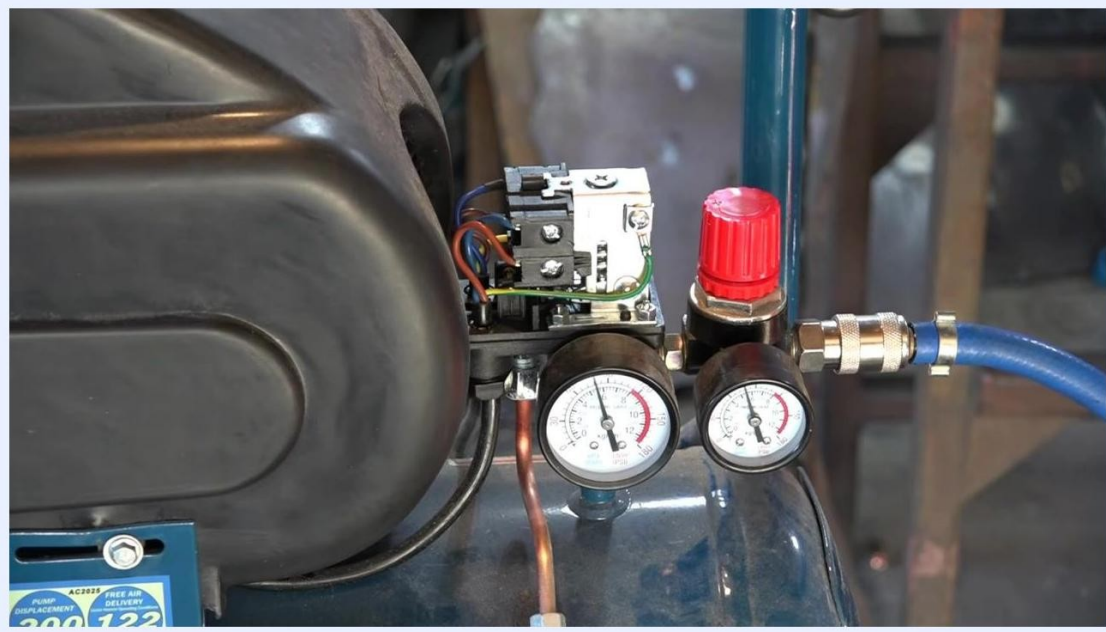
Hold the air hose with an attached blow gun, direct the nozzle away from yourself and others, and squeeze the trigger to release air from the tank while watching the pressure gauges.



Close-up of compressor gauges showing tank pressure just under 90 psi, with the red regulator knob and wiring visible

33. Monitor the pressure gauges

Watch the left gauge (tank pressure) and the right gauge (regulated output pressure) as air is released. Confirm that the tank pressure drops below 90 psi, verifying the effect of the adjustment.



Blow gun attached to the blue air hose releasing air from the compressor, with gauges, red regulator knob, and exposed pressure switch visible

34. Continue draining air if further reduction is needed

If you want to lower the pressure further, continue releasing air with the blow gun while maintaining a safe distance and monitoring the gauges.

35. Check for the lowest achievable setting

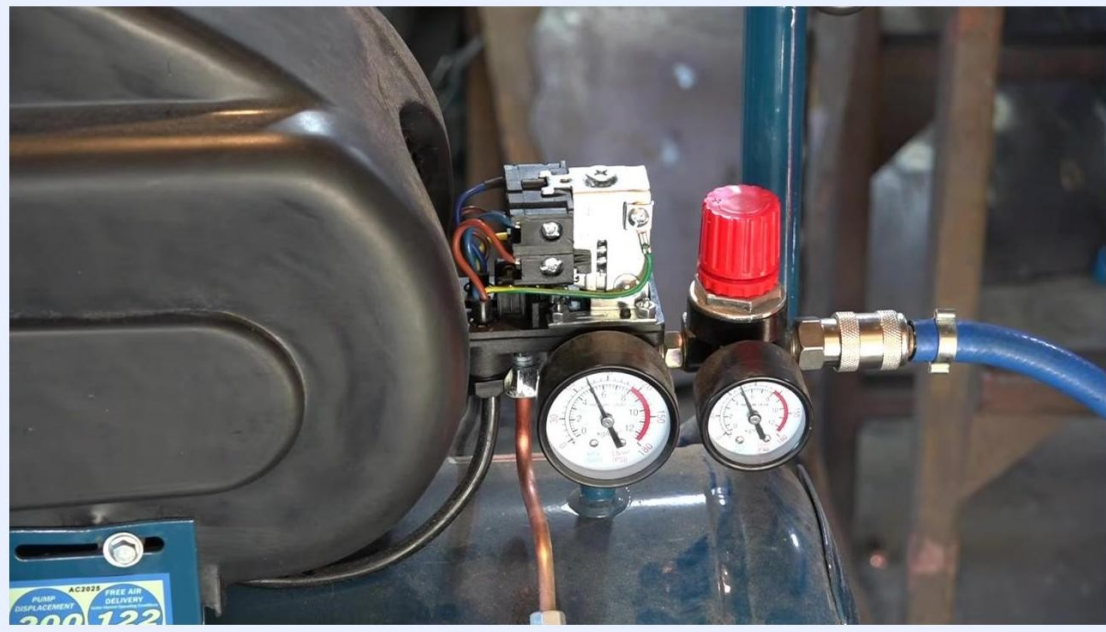
Continue watching the gauges as pressure drops. Ensure the pressure does not fall below the safe operational range specified by the manufacturer.

36. Bleed off additional air if necessary

If needed, repeat the air release process and continue monitoring the gauges until the pressure settles at the new cut-off point.

37. Confirm final pressure stabilization

Watch the gauge needle drop and settle to confirm the new cut-off pressure. In this example, the pressure stabilizes at around 70 psi, demonstrating that the adjustment took effect.



Compressor gauges showing a further pressure drop, with the red regulator knob and blue air hose attached



Compressor gauges showing the lowest pressure setting achieved after adjustment



Compressor gauges and assembly with pressure stabilizing after repeated air release



Compressor gauges showing stabilized pressure at around 70 psi after adjustment

Final safety guidance

- If your pressure switch responds inconsistently or with a delay, this may indicate a faulty switch. Consider replacing it rather than attempting risky adjustments.

- Pressure switches vary in appearance across compressor sizes and brands, but their function and adjustment principles are generally similar.
- Always check for factory warning labels on your compressor's pressure switch. Manufacturers set these controls for safety and equipment longevity, and factory settings should only be adjusted if absolutely necessary and you fully understand the risks.
- Adjusting a pressure switch carries real risk, including the potential for serious injury from over-pressurization, or accelerated wear and failure of the compressor. Only proceed if you are qualified and have taken all necessary safety precautions.

- If you decide to adjust a pressure switch, always unplug the compressor first, use the correct tool (typically a Phillips screwdriver), make only small incremental changes, and monitor results closely after each change.



Pressure switch cover removed, exposing internal components including adjustment screws, wiring, and a metal plate

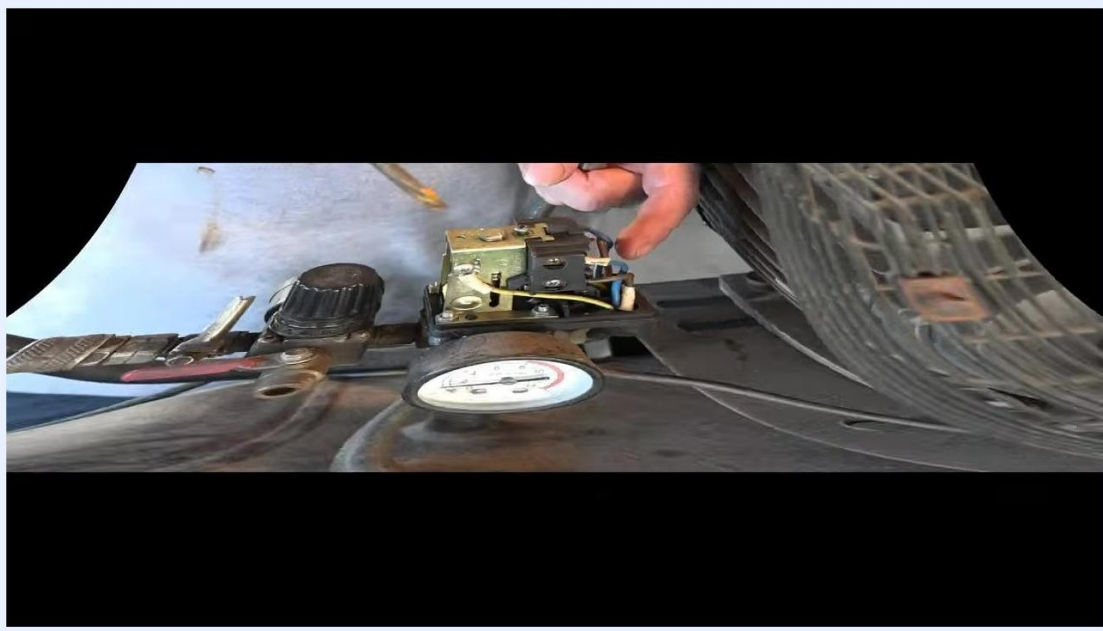


Operator leaning on compressor, workshop environment visible, emphasizing safety and manufacturer labels.

Verification and summary

- Confirm the compressor shuts off at the new cut-off pressure you set (for example, 50 psi in the older-unit example, or the stabilized reading in the $\pm$ screw example).
- Confirm the compressor restarts at the expected cut-in pressure, based on either the balance screw setting or the fixed differential of your model.
- Recheck the pressure switch cover is securely replaced after adjustment and before returning the compressor to normal use.
- Repeat the unplug–release–adjust–test cycle as many times as needed until the desired settings are achieved.
- Always keep the compressor's manual and manufacturer's safety labels on hand for reference, and never exceed recommended pressure limits.

- For further reference, official manufacturer documentation or trusted tool resources such as PETE'S-TOOLS.COM can provide additional guidance on safe pressure switch adjustment.



Close-up of the pressure switch with a hand pointing at the top adjustment screw, screwdriver in hand



Blue screen with bold red text: "PETE'S-TOOLS.COM" indicating the official website for more information.