

Air Compressor Maintenance (Guide, Tips, Checklist & PDF)

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Whether your air compressor is a crucial part of your business or simply a handy tool in your garage or workshop, you'll want to make sure it continues to work properly for the long haul. The best way to ensure that is to give it the maintenance it needs. But many people don't realize just how much maintenance their air compressors require – let alone how to go about performing it.

Read the User's Manual Before Getting Started!

Before you attempt to perform any kind of maintenance task on your air compressor, it's imperative to consult your compressor's user manual first. This guide will offer generic instructions for performing basic tasks, but only your manual can provide the instructions specific to your compressor.

This will ensure that you perform each task safely and without causing any damage to the unit. Further, failing to follow the manufacturer's instructions may even void your warranty. Your owner's manual is also likely to contain additional tips and important safety information unique to your model of compressor.

Preventive Maintenance

Like any machine, air compressors can get worn out over time, particularly with frequent use. The key to maintenance is minimizing the amount of wear and tear they experience and preventing issues that can result in costly repairs or an all-out replacement down the road. So in this section, I'll provide a list of the key preventive maintenance tasks as well as basic instructions for performing them.

1. Drain Liquid from the Tank

When ambient air is compressed, the water vapor it contains will be condensed into liquid form. This condensate will [collect inside the compressor's tank](#). If it's allowed to remain inside, it can contaminate the air supply or cause the tank to rust. This is why manufacturers generally recommend draining the tank after each use. Here's how it's done.

- **Step 1** – Turn off the compressor.
- **Step 2** – Open the tank relief valve until the tank is drained to 30 PSI or less (this will help force out liquid).
- **Step 3** – Place a [drain pan](#) under the drain plug at the bottom of the tank.
- **Step 4** – Slowly unscrew the drain plug and let the moisture drain out. You may need to tilt it slightly to get all the liquid out – but be careful not to tilt it too far.
- **Step 5** – Once the tank is empty, re-tighten the drain plug (do not overtighten).

2. Check and Tighten Fasteners

As you're probably aware, air compressors tend to vibrate quite a bit when they're running. All that vibration can cause nuts, bolts, and screws to loosen up over time. This can result in excessive vibration, leaks, or other issues, so it's a good idea to periodically check all fasteners for tightness.

- **Step 1** – Test all nuts, bolts, and screws by hand with a wrench, nut driver, or screwdriver.
- **Step 2** – If loose, tighten them by hand until they are snug and no longer move – do not overtighten, as this may damage the thread or strip the hardware.

3. Check and Tighten Electrical Connections

Vibration may also cause electrical connections to come loose over time. This can lead to short-circuits or unit failure, so it's a good idea to make sure all wires are secure. Your user manual should have more detailed instructions and diagrams for this, or it may simply instruct you to have it done professionally.

- **Step 1** – Turn off and unplug the compressor.
- **Step 2** – Inspect accessible electrical connections and wiring for looseness and damage.
- **Step 3** – Gently tighten connections (typically done with a screw or bolt) – avoid over-tightening.

4. Inspect Hoses and Connectors

No air compressor component is as susceptible to everyday wear and tear as the air hose. After being stretched out, coiled up, bent, twisted, exposed to the elements, and repeatedly expanded and contracted, an air hose can get pretty beat up. If it springs a leak, it will not only affect efficiency but may also put undue strain on the pump motor. If your hose is cracked, split, or otherwise damaged, simply replace it with a new one.

Make sure to check your hose connectors for leaks while you're at it – they're typically fairly noticeable, as they may produce a hissing sound or cause the pump to cycle on frequently.

5. Clean External Components

Workspaces tend to be fairly dirty places – there's no getting around that. Dust, dirt, sawdust, metal shavings, cobwebs... the list of particulates and debris in a typical workspace goes on and on. These things can accumulate on certain components of your air compressor and hinder its function. Keeping your compressor free of this gunk buildup is essential for prolonging its life and preventing issues.

- **Step 1** – Unplug the compressor and inspect for gunk buildup. The key places to check are the air intake vents (located on the air filter components), compressor fan grate, and cooling fins, or any other air pathways on the pump housing.
- **Step 2** – Use compressed air (in a can) to blow away dust and debris. Scrub gently with a soft brush if necessary, then wipe clean with a microfiber cloth.

6. Check/Change Air Filters

With dust and debris being inevitable, air compressors have air filters to capture particulate matter as they pull in ambient air to be compressed. These filters will eventually become saturated, which can allow dirt and dust to enter the pump, where it can damage valves, gaskets, or other internal components and contaminate the air supply. The filters will need to be changed periodically to prevent this from happening.

- **Step 1** – Unplug the compressor.
- **Step 2** – Remove the filter cover.
- **Step 3** – Remove the filter element and replace it with a new one. (Some models may be cleaned rather than replaced, or require that the entire filter assembly be replaced. Consult your user manual to determine the correct course of action.)

In some cases, you may be able to clean your filter element a few times before you need to replace it. To do this, simply blow it off thoroughly with compressed air. Some filter elements can be rinsed out with water and dried before being put back in – check with your user manual/filter package to determine how to clean it properly.

7. Check Oil Level

If your compressor uses oil, you'll want to keep an eye on the oil level. It's best to check this before every use. Some models feature a sight glass that allows you to see the oil level easily, while others may use a dipstick or other method. The oil should come to the middle of the sight glass or within the marked range on a dipstick.

8. Change the Oil

For oil-lubricated compressors, few things are as important as changing the oil regularly. It can eventually become dirty, get contaminated with moisture, or develop tannins – all of which can lead to damage or overheating of the pump motor. Your user manual should state the recommended oil change schedule as well as the oil type and capacity of your unit.

- **Step 1** – Run the compressor for a minute or two to warm up the oil (it should be warm, but not hot).
- **Step 2** – Turn off and unplug the unit.
- **Step 3** – Place a drain pan under the oil drain plug.
- **Step 4** – Remove the drain plug and allow all of the oil to drain into the pan.
- **Step 5** – Replace the drain plug.
- **Step 6** – Remove the fill plug and pour in the new oil until it's at the appropriate level. (Do not overfill.)

- **Step 7** – Replace the fill plug.

9. Change Oil Filter and Air/Oil Separator

Some oil-lubed compressors feature filters to help keep the oil clean and prevent oil vapor from getting into the air tank. Routinely replacing these filters is key to ensuring the longevity and proper function of your compressor. The process of replacing them can be complicated and may differ widely among models, so refer to your user manual for detailed instructions on how to change these. In some cases, they may need to be replaced by a professional service technician.

10. Test Safety Mechanisms

Air compressors typically have several mechanisms designed to prevent damage to the unit and/or injury to the user in the event of a malfunction – overheating, excessive pressure. Some of these may be electrical, while others may be mechanical. In either case, it's a good idea to test them periodically to ensure that they're functioning properly. Again, since each model is different, you'll have to check your user manual for instructions on how to perform these tests.

11. Inspect Belts (If Applicable)

If your unit features a belt drive system, you'll want to simply inspect the belts regularly for wear, damage, and correct tensioning. Belts are some of the first things to wear out on an air compressor. They often let you know when they're getting worn by producing unusual sounds, but you shouldn't rely solely on that. If your belt requires replacing, your user manual should include instructions on how to install a new one and tension it properly.

12. Clean Fuel Tank

If your air compressor uses fuel for power (such as gas or diesel), you'll want to clean out the fuel tank periodically to prevent fuel particulates from building up inside. At the risk of sounding like a broken record, you'll want to check your user manual for instructions on this task, since they are likely to be specific to your model – and since many manufacturers prefer that this be performed by a professional.

How Often Should You Service an Air Compressor?

How often you service your air compressor ultimately depends on how much use it gets. **If the unit sees occasional use, annual maintenance should suffice, but if it's used often, quarterly service may be necessary.** However, some tasks should be performed more often than others – some even daily.

Other than the daily tasks, air compressor service frequency is based primarily on hours of usage rather than a fixed calendar schedule. For instance, it's generally recommended that the **oil be changed after every 1,000 hours of use, at minimum.** Air filters, oil filters, and air/oil separators should typically be changed after every 1,000 to 2,000 hours of use.

Each model is different, however – your user manual will outline the manufacturer's recommended maintenance schedule for your specific unit.

Maintenance Schedule/Checklist

While every model is different and the manual for your particular air compressor should include a recommended maintenance schedule, here is a general breakdown of how often certain tasks should be performed. Again, this is just a guideline.

Daily

- Drain condensate from the air tank (after use).
- Check for obvious oil leaks.
- Inspect the air hose(s) for cracks, corrosion, or damage.

Weekly

- Check oil level.

Monthly

- Check and tighten all fasteners.
- Check and tighten all electrical connections.
- Clean external components & air pathways (do more frequently if your area is particularly dirty or you can see accumulated gunk).
- Inspect belt(s) for wear and damage – replace if necessary.

Quarterly/Semi-Annually

- Change the oil.
- Change the oil filter.
- Change the air intake filter(s).
- Check belt tension.
- Test safety mechanisms.

Yearly

- Change oil/air separator element.
- Clean fuel tank.

Depending on what type of compressor you have (piston, rotary screw, oil-free, etc.), you may need to perform some tasks more often. Consult your user manual for your specific maintenance requirements and schedule.

General Maintenance Tips

Now that you have your maintenance checklist and an idea of when to perform each task, here are a few extra tips to help you keep your air compressor healthy and functional longer.

1. Keep the Area Clean

One key thing that will help prevent issues and stretch the intervals between certain maintenance tasks is to keep your workspace as clean as possible. This may not be possible if you're transporting your compressor around to different job sites, but if you primarily use it in your garage or workshop, you can exercise at least some level of control.

This simply means cleaning up sawdust, dirt, and any other kinds of dust or debris as soon as you're done working. All of this junk can get kicked up and make its way to your air compressor, where it will build up on air pathways and filters, meaning you'll have to clean and/or change them more frequently. So if you want your filters to last (and spend less time performing maintenance), a little bit of general cleanup goes a long way.

2. Don't Use Extension Cords (If You Can Help It)

Air compressors don't like extension cords. This is because they typically reduce the flow of power to the compressor motor, degrading the motor and increasing the likelihood of a motor failure over time. Instead, it's best to use a [longer air hose](#), as this won't put any undue strain on the motor.

If you absolutely need to use an extension cord, it's best to use one that's fairly short and is rated to handle the power consumption of your compressor. Likewise, try to avoid plugging your compressor into power strips – most power strips are designed for fairly low-amperage appliances, so a compressor may overload them. This will not only stress your compressor motor but also creates a fire hazard.

3. Avoid Tipping Your Compressor Over

You can also save yourself a lot of trouble by keeping your compressor on level ground and not turning it on its side during transport. This is especially important with oil-lubricated compressors, as the oil can seep into places it's not supposed to and cause problems. But even tipping an oil-free compressor [can be problematic](#), as any moisture or gunk in the air tank can interfere with internal valves.