

Operation Manual

Twister G40/G60

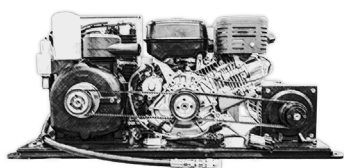


At Airworks Compressors Corp, we built our company by listening to customers' needs for air compressors that are efficient, cost-effective, and environmentally responsible. Since our founding in 2007, we've pioneered several world firsts, including the compact diesel-powered rotary screw air compressor and the propane-powered air compressor.

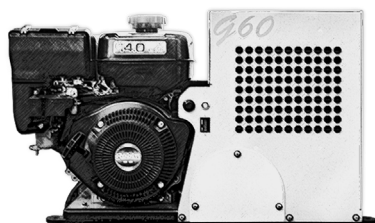
Our compressors are trusted in some of the most demanding environments on Earth, from rock blasting deep within the Earth, to the deserts of the South West, to the harsh conditions of Mount Erebus in Antarctica. With a commitment to sustainability and backed by patented technologies like our Aurora instrument air system, we provide innovative, reliable solutions for industrial applications.

Table Of Contents

- 1 - About Airworks
- 2 - Unit Diagram
- 2 - Important Notes
- 3 - Service Notes
- 5 - Safety Precautions
- 7 - Installation
- 8 - Startup/Shutdown Procedure
- 9 - Maintenance Guide
- 10- Adjusting The System
- 11- Troubleshooting Guide
- 13- Parts Guide
- 14- Product Support



Above shown with optional generator



Unit Diagram

- 1 - Fuel Fill Cap
- 2 - Air Filter
- 3 - Choke
- 4 - Fuel Petcock
- 5 - Pull Start (Optional)
- 6 - Key Start
- 7 - Compressor Button
- 8 - Hour Meter
- 9 - Oil Cooler
- 10 - Compressor Oil Filter + Drain Hose Access
- 11 - Mounting Points



Important Notes

91 Octane Fuel

The high-performance engine within your Twister requires a minimum of 91 octane premium unleaded gasoline to operate correctly.

Air Output

Your Twister G40/G60 is rated for 40 or 60 CFM, respectively, at up to 150 PSI. The maximum PSI can be adjusted between 135 and 150 PSI (see page 10).

Air Quality

We use flooded lobe rotary screw air ends to maximize reliability, which introduces trace amounts of oil into the air as a byproduct. While this amount is negligible and won't affect the vast majority of use cases, this compressor is unsuitable for generating breathing air without the use of additional filtration.

Duty Cycle

Like every Twister, your G40/G60 can operate at a 100% duty cycle.

Cleaning Your Twister

Your Twister's enclosure is made from powder coated aerospace grade aluminum, and is highly resistant to corrosion. While this combination can be safely cleaned with most degreasers, we recommend Spray Nine for the enclosure itself.

Service Log

[illegible]

[illegible]

Safety Precautions

Before Operating the Compressor

Ensure you read and comprehend the operation manual and all related safety materials before operating the air compressor. The installer must ensure that the manual and all safety decals are delivered with the unit upon completion of product installation.

Personal Protective Equipment and Practices

Use Appropriate Safety Gear

Follow safe work practices and wear the appropriate safety equipment when operating air-powered equipment.

Noise Hazard

Wear appropriate hearing protection, such as earplugs or earmuffs, to prevent hearing damage from high noise levels.

Chemical Exposure

Use appropriate personal protective equipment (PPE) when handling lubricants, coolants, or other chemicals. Ensure proper ventilation in the work area.

Operating Precautions

Hot Components

Use caution when handling components during and after operation, as they may be hot.

Avoid Drive System Contact

Do not operate the compressor with panels removed. Avoid contact with the drive system.

Avoid Pressurized Air Contact

Avoid skin contact with pressurized air, as it may cause injury or death.

Ensure Air Quality

Make sure the air entering the compressor is free of flammable vapors to prevent explosions.

Vaporized Oil Hazard

Be aware that vaporized oil propelled by high-pressure air is a potentially flammable mixture and a respiratory hazard.

Electrical Safety

Ensure all electrical connections are properly insulated and grounded. Do not operate the compressor with wet hands or in wet conditions.

Safety Precautions

Refueling and Fire Safety

Refueling Precautions

Never refuel the unit while it is running or hot. Avoid sparks and flames when refueling. Only refuel in well-ventilated areas.

Combustion Engine

Keep flammable materials away from the unit's engine and exhaust at all times while the unit is running.

Preventing Accidents

Falling Objects

Secure all components and tools properly to prevent them from falling. Wear a hard hat in areas where overhead work is being done.

Slips, Trips, and Falls

Keep the work area clean and free of obstructions. Ensure that hoses and cables are routed safely to avoid tripping hazards.

Moving Parts

Keep hands and clothing away from moving parts. Ensure all guards and covers are in place during operation.

Proper Lifting Techniques

Use proper lifting techniques or mechanical lifting devices when moving heavy components to prevent back injuries.

Depressurizing and Servicing

Do not attempt to service the compressor while it is under pressure. Remove fill caps and filters slowly. Observe that there is no pressure in the system.

Installation

Preparation

Trace the base size and mount hole locations onto cardboard to create a template. Use this template to drill holes for mounting the compressor in a suitable location. Exercise caution when drilling to avoid obstacles beneath the surface.

Allow for proper fitting and hose/wire routing. Ensure there is adequate space for ventilation and service access.

Mounting the Compressor

Securely fasten the compressor to the service body using locking fasteners. Mount the Twister control panel in an accessible location when applicable.

Air Line Restrictions

Limit the use of 45-degree and 90-degree fittings to prevent loss of air flow. Use at least 3/4" hose/plumbing throughout the system.

Airflow Considerations

When installing the Twister in a confined space, ensure proper airflow direction through the unit. Provide a source of fresh air intake and a vent for warm air exit. On the G60, cool air enters through the oil cooler grille on the side (#9 on the unit diagram), and exits on both ends.

Battery Connection

Use a minimum of 4-gauge welding wire with a 150-amp breaker in line when connecting the battery cables to the Twister. Due to the rubber mounting bases, ground the unit using the supplied ground lead from the Twister to the chassis battery.

Run the battery cable from the Twister quick connector to the truck battery. Install a 150-amp circuit breaker near the battery and size the cable appropriately for the length of the run. Protect the cable from rubbing and damage.

For installation at a distance greater than 12' from battery, heavier cable is recommended.

Startup/Shutdown Procedures

Turning On the Unit

- 1) Turn on fuel petcock (#4 on the Unit Diagram) to enable to flow of fuel to the engine.
- 2) Apply choke (#3).
- 3) Ensure compressor button (#7) is turned off.
- 4) Turn key (#6) to the right to crank the engine. Release key when engine has started.
Adjust choke (#3) to smooth idle.
- 5) Allow engine to warm up for at least 30 seconds. Allow more time in colder weather.
Press compressor button (#7) to begin building air.
- 6) Unit will perform one cycle to the preset maximum pressure (130-150psi) and then idle down.
- 7) The G60 is now at pressure, and ready for use.

Shutting Down the Unit

- 1) Switch compressor button (#7) off.
- 2) Wait 60 seconds for compressor to bleed off pressure.
- 3) Turn key (#6) to off position to stop the engine.
- 4) Turn fuel petcock off (#4) to prevent the engine from flooding while moving the compressor.

IMPORTANT: Do not shut off the engine off while the unit is building pressure. This may damage your compressor.

Maintenance Guide

Your Twister is a finely-tuned machine, and requires routine maintenance in order to provide you with decades of reliable use, and maintain its warranty. Please adhere to these service intervals to get the most use out of your Twister.

Where Can I Service My Compressor?

Our products can typically be serviced or repaired by any reputable small engine repair shop. Small engine repair shops that are familiar with Kubota products are our first choice.

How Can I Purchase Replacement Parts?

While our dealers are able to source replacement parts, you are also able to contact our parts department directly. If you would like to place an order, please send us an email to parts@airworkscompressors.com.

Every 25 Hours

Check compressor oil (appropriate level is at the bottom of the threads inside of the compressor oil fill), and engine oil levels.

Check for loose or rubbing components, leaks, air, and fluid.

Every 100 Hours

Perform 25-hour checks plus:

- Check engine and compressor air filters condition.
- Check tension and condition of drive belt (ATB402).

Every 250 Hours / Every 6 Months

Perform 100-hour checks plus:

- Change engine oil (1 liter) and oil filter.
- Change compressor oil (3 liters), oil filter, and air filter.
- Service engine and compressor air filters.
- Check drive belt (ATB402) (replace if required)
- Check for leaks, loose fasteners, fittings, wire, and hose chafing.

Requires:

- *250 Hour G60 Service Kit (ATSG25S)*

250 Hour G60 Service Kit Includes:

- *1x Compressor Filter (ATC002)*
- *1x Compressor Oil Filter (ATC003)*
- *3x 1 Liter Compressor Oil (ATC005-1L)*
- *1x Engine Air Filter (ATE427)*
- *1x Engine Oil – 1 Liter (17-106)*

Every 500 Hours / Every 12 Months

Perform 250-hour checks plus:

- Change compressor coalescing filter.
- Change spark plug.
- Check radiator hoses and clamps.
- Check air intake lines.
- Replace the fuel filter element.
- Check valve lash and ensure that it is set to 0.14mm.
- Check air pressure and engine speed settings.

Requires:

- *500 Hour G60 Service Kit (ATSG50S)*

500 Hour G60 Service Kit Includes:

- *1x Compressor Filter (ATC002)*
- *1x Compressor Oil Filter (ATC003)*
- *3x 1 Liter Compressor Oil (ATC005-1L)*
- *1x Engine Air Filter (ATE427)*
- *1x Engine Oil – 1 Liter (17-106)*
- *1x Coalescing Filter (ATC004)*
- *1x Spark Plug (ATB409)*

Adjusting The System

Your Twister has been designed to output a maximum of 60 CFM at up to 150 PSI, which is enough air to continuously run tools requiring roughly 90 PSI. In the event that either of these values have drifted, they can be brought back to our spec with some simple adjustments.

Adjusting PSI

The Pressure Unloader Valve (#8 on the Parts Guide sheet) can be adjusted to anywhere within 135-150 PSI. If a pressure below 135 PSI is desired, we suggest installing a filter regulator lubricator (Part # 02-760), which is available from our parts department. They can be contacted at 780-454-2263 Ext. 226.

Adjusting Engine Speed

The throttle linkage can be adjusted via the Throttle Control Wire (#7 on the Parts Guide sheet) to speed up or slow down the engine to produce the desired volume of air.

Troubleshooting Guide

Compressor Does Not Produce Adequate Air

Check and correct the following:

- Ensure the compressor oil level is correct.
- Verify the drive belt is intact and has adequate tension.
- Confirm the unloader valve (#8 on the Parts Guide) is operational.
- Ensure air filters are clean (Filters are contained within #11 and #16 on the Parts Guide).
- Check for any blockages downstream of the compressor (e.g., kinked hose or compromised plumbing).

Frequent Over-Temperature Shutdowns

Check and correct the following:

- Verify engine and compressor oil levels are correct.
- Inspect engine and compressor hoses for kinks.
- Check the over-temperature shutdown temperature probes for both the engine and compressor.
- Ensure adequate air circulation around the unit, and confirm that hot air is not being recirculated into the air intakes.
- Make sure oil filters are not plugged.
- Check that the cooler fan is operating.

Excessive Air Pressure

Check and correct the following:

- Ensure the unloader valve (#8 on the Parts Guide) is operating correctly.
- Check for leaks between the air end (#10) and the unloader valve (#8).
- Confirm the inlet valve (#11) is sealed properly and there is no oil in the compressor air filter inside of it.

Engine Stalls When Compressor Starts

Check and correct the following:

- Ensure the air compressor is not under pressure – allow it to unload.
- Verify the engine speed is adequate. Refer to the 'Adjusting the System' section of the manual.
- Confirm the blow-down valve is operating properly.

Low Air Pressure

Check and correct the following:

- The maximum air flow may be exceeded. Try running the compressor with a lighter load and observe its operation.
- Verify the engine speed is adequate. Refer to the 'Adjusting the System' section of the manual.
- Ensure the unloader valve (#8) is operating properly – adjust or replace as required.

Troubleshooting Guide

Excessive Oil in the Air Produced

Check and correct the following:

- Verify the compressor oil level is correct.
- Ensure the oil scavenging line is clear. This is a Teflon tube located between the compressor (#10) and the auxiliary cooler (#5).
- Inspect the coalescing filter (#1) and replace it if necessary.

Oil Blows Out of Compressor Air Filter on Shutdown

Check and correct the following:

- Ensure the compressor was not building air while shutting down, as this can cause oil to blow out of the air filter (located inside #11 on the Parts Guide).
- Verify the Compressor Air Filter Housing (#11) can seal adequately. Repair or replace as needed.

Gas Engine Turns But Will Not Start

Check and correct the following:

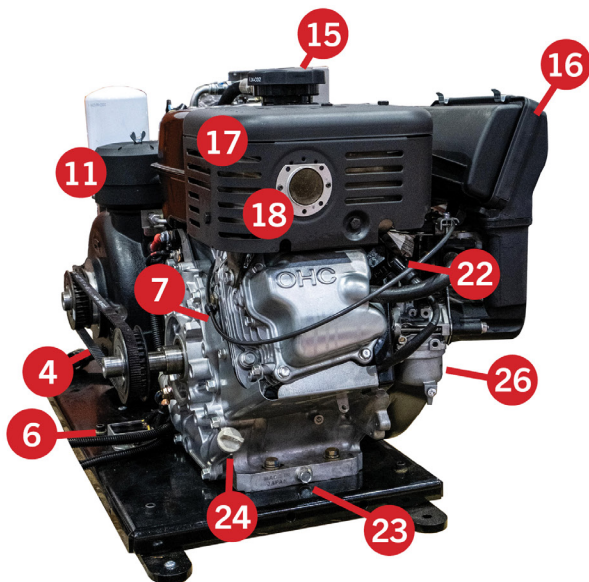
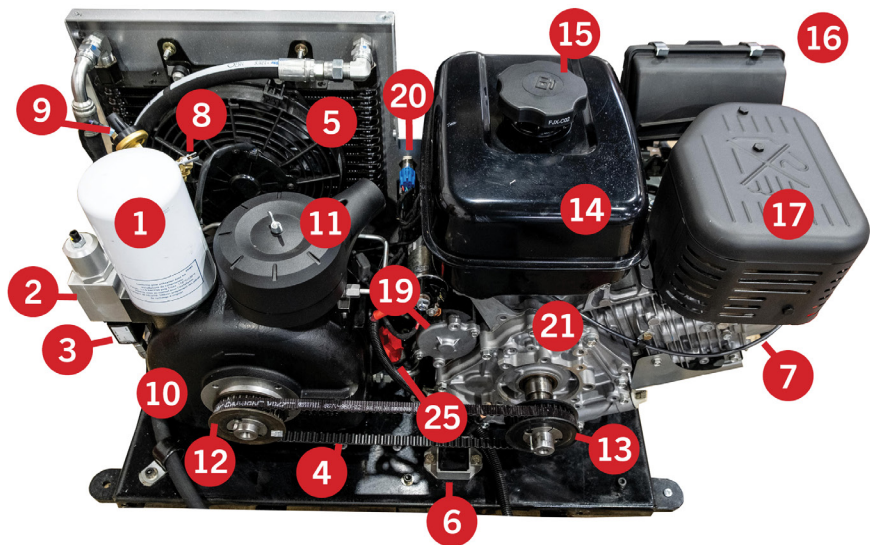
- Ensure there is an adequate fuel supply.
- Confirm the compressor switch is turned off.
- Ensure that fuel petcock is open (#4 on the Unit Diagram).

Engine Smoking/Lack of Power

Check and correct the following:

- Verify the fuel petcock (#4 on Unit Diagram) is open.
- Ensure the fuel flow is unrestricted.
- If operating in a hot environment, route the air intake to outside fresh air.
- Confirm that the engine RPM is correct.

Parts Guide



Parts Guide

- 1 - Coalescing Filter (ATC004)
- 2 - Minimum Pressure Valve (ATC026)
- 3 - 12v Control Solenoid (ATC027)
- 4 - Belt (ATB402)
- 5 - Auxiliary Cooler (ATB406)
- 6 - AC-DC Rectifier (ATB415)
- 7 - Throttle Control Wire (ATE404)
- 8 - 135-150 PSI Unloader Valve (ATC405)
- 9 - Pressure Switch N/C -10 PSI (13-344)
- 10 - G40/G60 Rotary Screw Air End (ATC001-C)
- 11 - Compressor Air Filter Housing (ATC002-02)
- 12 - Pulley With .28mm Bushing (ATC407)
- 13 - Pulley With 1" Bushing (ATE406)
- 14 - 3 Gallon Fuel Tank (AOFT403)
- 15 - Fuel Cap (ATE409)
- 16 - Engine Air Filter Housing (ATE428)
- 17 - Muffler (ATE477)
- 18 - Muffler Tip (ATE477-03)
- 19 - Starter (ATB430)
- 20 - Compressor Switch (ATB104)
- 21 - G40/G60 Engine (AG401)
- 22 - Spark Plug (ATB409)
- 23 - Engine Oil Drain Plug
- 24 - Engine Oil Fill Cap
- 25 - Compressor Oil Fill Cap

How To Purchase Parts:

We maintain stock of service kits, along with other replacement parts that you are able to purchase directly through us. To get in touch with our parts department, send us an email at parts@airworkscompressors.com, or give us a call at 780-454-2263, Ext. 226, to place an order.

Schematics & Drawings:

We maintain a comprehensive archive of our unit drawings and electrical schematics on our website at airworkscompressors.com/manuals. Simply enter your unit's serial number (located on both the control panel, and the metal placard on the compressor's frame).

Support:

If you require assistance beyond what is contained within this manual, our trained technicians offer exceptional product support for our customers all around the world. Please give us a call at 780.454.2263, or send us an email at customerservice@airworkscompressors.com.

Airworks Compressors Corp.
14503 115th Avenue NW
Edmonton, Alberta
T5M 3B8
780.454.2263



airworkscompressors.com