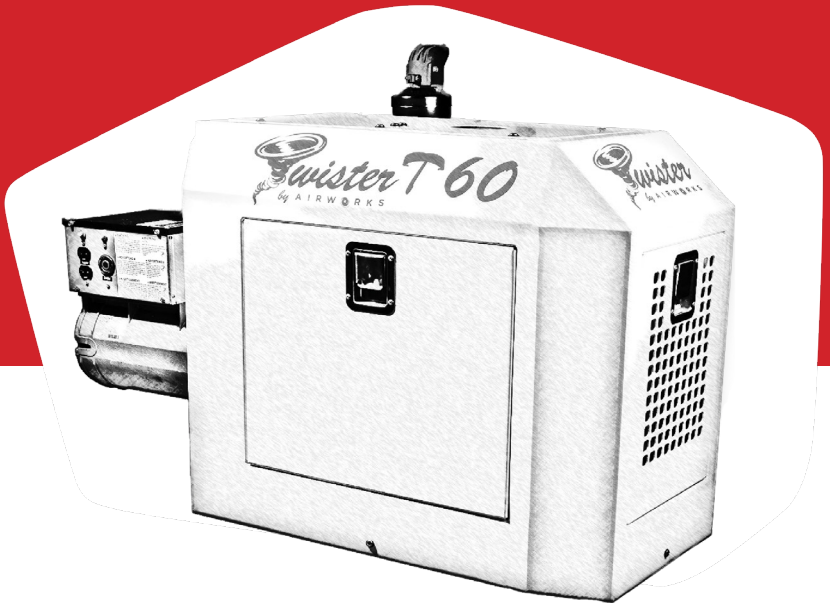


Operation Manual

Twister T40 / T60



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.

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Important Notes

Diesel Fuel

The engine selected for the T40 and T60 utilizes a combination of advanced piston geometry, high-pressure common rail fuel injection, and exhaust gas recirculation technology that reduces combustion temperature. This combination reduces particulate emissions by 98%, and gives our compressors best-in-class fuel efficiency in the process.

Air Output

Your Twister T40/T60 is rated for 40 or 60 CFM, respectively, at 100 PSI. The maximum PSI can be adjusted between 135 and 165 PSI (see page 10), but come pre-configured for 160 PSI.

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 actually helps to lubricate air tools, this compressor is unsuitable for generating breathing air.

Duty Cycle

Like every Twister, your T40/T60 can operate at a 100% duty cycle.

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.

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 T40/T60, cool air enters through the grille on the front of the unit for both the engine and compressor air intakes, while the engine exhaust is routed through the exhaust pipe on top of the unit, and warm air is pushed out the rear of the unit. Consult with drawing #4214 for a detailed guide on our website at: <https://www.airworkscompressors.com/manuals>.

Fuel Line Installation

Run supply and return fuel lines to the truck diesel fuel tank using the auxiliary pickup provisions on the tank. Do not cut into the truck engine lines. Consult the vehicle manufacturer for the proper procedure and use kit (ATA013).

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

Manual Start (Standard)

- 1) Ensure that 'COMPRESSOR' button is turned off.
- 2) Turn key to the right to crank the engine.
- 4) Allow the engine to get to a smooth idle.
- 5) Press the 'COMPRESSOR' button to begin building air.
- 6) The unit will idle down once maximum pressure is reached. The unit is now ready to use.

Shutting Down the Unit

- 1) Ensure the unit is not building air.
- 2) Press the 'Compressor' button to disarm the compressor.
- 3) Allow the unit to idle down for a few moments to allow it to cool.
- 4) Turn the key switch to the off position to turn off the engine. Your Twister is now turned off.

Autostart (Option)

- 1) Ensure that 'COMPRESSOR' button is turned off.
- 2) Turn key to the start position to power on the unit.
- 3) Press 'RUN' to start your Twister's engine.
- 4) Allow the engine to get to a smooth idle.
- 5) Press the 'COMPRESSOR' button to begin building air.
- 6) The unit will idle down once maximum pressure is reached. The unit is now ready to use.

Shutting Down the Unit

- 1) The unit will idle down once maximum pressure is reached. The unit is now ready to use.
- 2) Press 'OFF' to turn off the Twister's engine.
- 3) Turn the key to the center position. Your Twister is now turned off

Auto Start

Activate this feature by pressing 'AUTO'. This will automatically shut off the engine when max air pressure is reached, and turn on again when more air is needed.

Aux Button

By default, the aux button is left available for the installer to integrate as a control for other systems.

ENTER/Up/Down

The screen will cycle through a variety of system parameters, such as PSI, temperature, oil pressure. Use the arrows to navigate through this list. To prevent the screen from cycling, you can lock the current view by holding 'ENTER'.

Status Light

Green: Everything is working correctly.
Red: The engine has thrown an error code. This code will be visible on the screen.

IMPORTANT: Avoid shutting the engine off or disarming the compressor button while the unit is building pressure. This may cause oil loss and/or damage to 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 fan belt (ATB402).
- Check fuel filter condition

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 T40/T60 Service Kit (ATS425S)*

250 Hour T40/T60 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 Fuel Filter (ATE007)*
- *1x Engine Oil – 1 Liter (17-106)*

Every 500 Hours / Every 12 Months

Perform 250-hour checks plus:

- Change compressor coalescing filter.
- Replace fan belt (#26).
- Check radiator hoses and clamps.
- Check air intake lines.
- Replace the fuel filter element.
- Clean the radiator external fins.
- Check valve lash (Located under tappet cover on top of engine #7).

Requires:

- 500 Hour T40/T60 Service Kit (ATS450S)

500 Hour T40/T60 Service Kit Includes:

- 1x Compressor Air Filter (ATC002)
- 1x Compressor Oil Filter (ATC003)
- 3x 1 Liter Compressor Oil (ATC005-1L)
- 1x Engine Air Filter (ATE027)
- 1x Engine Oil – 1 Liter (17-106)
- 1x Coalescing Filter (ATC004)
- 1x Fan Belt (ATB035)
- 1x Coupler Insert (ATC020)
- 1x Fuel Filter (ATE007)

Adjusting The System

Your Twister has been designed 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 Switch (#19 on the Parts Guide sheet) can be adjusted to anywhere within 130-165 PSI. This component determines the cut-in and cut-out pressure of your compressor. If you would like to go beyond this range, please contact us at 780-454-2263.

Adjusting Engine Speed

The engine's throttle can be adjusted by loosening the nuts on the idle control solenoid (#8), and repositioning it.

Troubleshooting Guide

Compressor Does Not Produce Adequate Air

Check and correct the following:

- Ensure the compressor oil level is correct.
- Confirm the pressure relief valve (#21) is operational.
- Confirm the unloader valve (#8) is operational.
- Ensure air filters (#4, and #16 on the Parts Guide) are clean.
- Check for any blockages downstream of the compressor (e.g., kinked hose or compromised plumbing).
- Verify the engine RPM is set to spec; adjust as required.

Frequent Over-Temperature Shutdowns

Check and correct the following:

- Verify engine and compressor oil levels are correct.
- Check the engine coolant level (#1) while the unit is cool.
- 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.
- Verify the fan belt (#26) is properly adjusted.
- Clean the radiator core (#15) with caution using compressed air, ensuring not to damage the fins.
- Check for a faulty over-temperature switch on the engine (240°F) or compressor (270°F).
- Look for rapid compressor cycling which might indicate air volume exceeds usage

Excessive Air Pressure

Check and correct the following:

- Ensure the pressure relief valve (#21) is operating correctly.
- Confirm the inlet valve (Inside #16) is sealed properly and there is no oil in the compressor air filter inside of it.
- Ensure the pressure switch (#19) is operating correctly.
- Inspect the system pressure line for leaks (from compressor to pressure switch).

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.
- Ensure the engine fuel filter (#13) or air filter (Located with in part #4) is not plugged; replace if necessary.
- Check if the fuel pump (#12) is functioning).
- Verify the compressor switch is off during startup.
- Inspect the positive air shut-off valve (#5 on the Parts Guide) (optional - not on all units).

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 pressure relief (#21) is operating properly – adjust or replace as required.
- Check for restricted flow due to kinked or collapsed air lines or ice blockages.
- Inspect air lines and fittings for leaks.

Excessive Oil in the Air Produced

Check and correct the following:

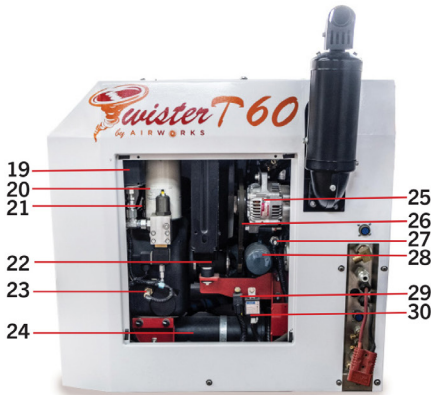
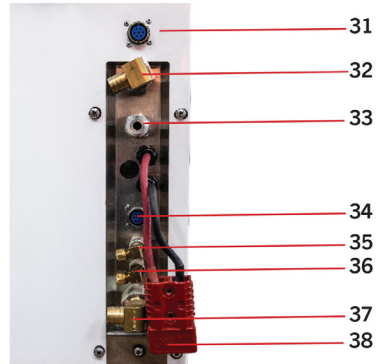
- Verify the compressor oil level is correct.
- Ensure the oil scavenging line (#3) is clear.
- Inspect the coalescing filter (#20) and replace it if necessary.
- Ensure the shutdown procedure is proper; avoid shutting down under load.

Diesel 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.
- Test the intake heater (#8).
- Check if the fuel filter (#13) is restricted; bleed air from the filter housing
- Inspect the positive air shut-off valve (#5) (optional - not on all units)
- Verify the fuel pump (#12) operation and check flow.
- Bleed air from the fuel system through the screw at the top of the filter.

Parts Guide



Parts Guide

- 1 - Coolant Reservoir
- 2 - Compressor Oil Filter
- 3 - Oil Scavenging Return Line
- 4 - Engine Air Filter (Obscured)
- 5 - Positive Air Shutoff (Obscured, Optional Feature)
- 6 - Fuel Stop Solenoid
- 7 - Valve Lash Cover
- 8 - Intake Heater
- 9 - Idle Solenoid
- 10 - Engine Oil Drain Hose (Obscured)
- 11 - Hour Meter
- 12 - Electric Fuel Pump
- 13 - Fuel/Water Separator Filter
- 14 - Engine Oil Drain Hose (Obscured)
- 15 - Radiator
- 16 - Compressor Air Intake
- 17 - Compressor Oil Fill
- 18 - Compressor Oil Drain Hose
- 19 - Pressure Switch
- 20 - Coalescing Filter
- 21 - Pressure Relief Valve
- 22 - Drive Coupler (Obscured)
- 23 - Compressor Temperature Probe
- 24 - Heat Exchanger
- 25 - Alternator
- 26 - Fan Belt
- 27 - Engine Temperature Probe
- 28 - Engine Oil Filter
- 29 - Fuel Stop Shutdown Relay
- 30 - Fuel Stop Timer
- 31 - Autostart Connector (Optional Feature)
- 32 - Coolant Tie-In Supply Line (Optional Feature)
- 33. Compressed Air Output
- 34. Control Panel Connector
- 35. Fuel Supply
- 36. Fuel Return
- 37. Coolant Tie-In Return Line (Optional Feature)
- 38. Battery Quick Connect

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.

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