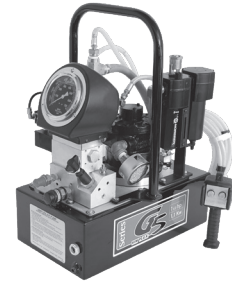




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**G5 AIR TORQUE
 POWER PUMPS**
 Reference # - TD061
 Rev. - A
 Date - 0810

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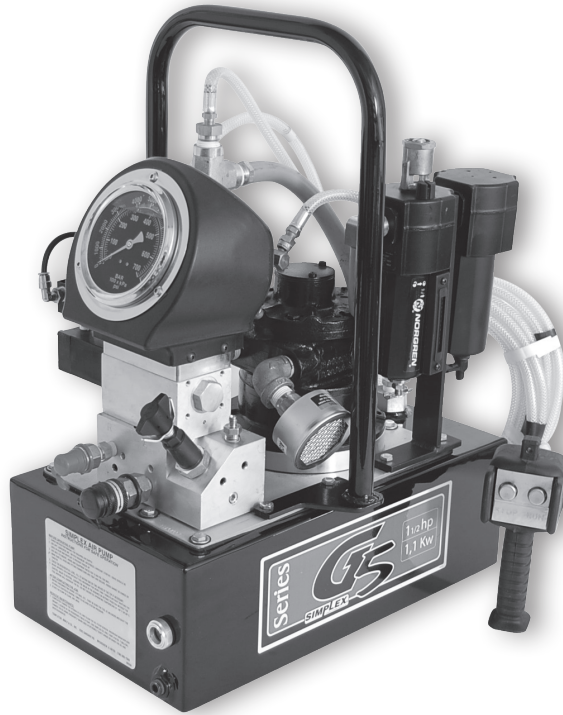
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TO RETRIEVE TECHNICAL PART SHEET DOCUMENTATION, GO TO: WWW.TKSIMPLEX.COM

- Note -

SIMPLEX has taken every care in preparing this Operational Manual that is intended as a technical guideline only. SIMPLEX accepts no liability in relation to any use or reliance made of any information in this Operational Manual. All information, illustrations and specifications in this Operational Manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice. Equipment operators and installers shall be responsible for ensuring that a safe working environment and safe systems of work are in place before operating the equipment.

G Series Air Power Pumps



IMPORTANT - READ CAREFULLY

This manual contains important information for the correct installation, operation and maintenance of this equipment. All persons involved in the installation, operation and maintenance of this equipment must be thoroughly familiar with the contents of this manual. To safeguard against the possibility of personal injury or property damage, follow the recommendations and instructions of this manual. Keep this manual for reference.

WARRANTY STATEMENT

SIMPLEX products are warranted to be free of defects in materials and workmanship under normal use for as long as the original purchaser owns them, subject to the guidelines and limitations listed. This warranty does not cover: *normal wear & tear, cosmetic items, abuse, overloading, alterations, improper fluid, or use in a manner for which they are not intended*. If the customer believes a product is defective, the product must be delivered, or shipped freight prepaid, to the nearest SIMPLEX Authorized Service Center for evaluation and repair.

1.0 RECEIVING INSTRUCTIONS

Important! Make sure to inspect all of the components for shipping damage. If damage is found, notify carrier at once. Shipping damage will not be covered by warranty. The carrier is responsible for all loss associated with shipping damage.

2.0 SAFETY

Make sure to read the instructions, warnings and precautions carefully. Follow any recommended safety precautions to avoid personal injury or damage to the unit. Simplex cannot be responsible for any damage or injury from unsafe use, lack of maintenance or incorrect operation. In the event any questions or concerns arise, contact SIMPLEX or a local Distributor for clarification.

The pump's maximum working pressure is 10,000 PSI (700kg/cm²). Make sure that all tools used with this pump are rated at 10,000 PSI (700kg/cm²) operating pressure.



If you have never been trained on high-pressure hydraulic safety, consult your distributor or service center for a free Simplex Hydraulic Safety Course.

Failure to comply with the following cautions and warnings could cause equipment damage, property damage or personal injury.

DANGER is only used when your action or lack of action may cause serious injury or even death.

WARNING indicates a potential danger that requires correct procedures or practices to avoid personal injury.

CAUTION is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment, or other property.

WARNING: Wear proper personal protective gear when operating hydraulic equipment.

DANGER: To avoid personal injury, keep hands and feet away from tool and work-piece during operation.

WARNING: Do not exceed equipment ratings. Overloading causes equipment failure and possible personal injury. The tools are designed for a maximum pressure of 10,000 PSI (700kg/cm²). Do not connect a tool to a pump with a higher pressure rating. Never set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/or personal injury.

WARNING: The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system.

CAUTION: Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose, leading to premature hose failure.

Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.

IMPORTANT: Do not lift hydraulic equipment by the hose or swivel couplers. Use the carrying handle or other means of safe transport.

CAUTION: Keep hydraulic equipment away from flames and heat. Excessive heat will soften seals, resulting in fluid leaks. Heat also weakens hose materials. For optimum performance do not expose equipment to temperatures of 65° C (170° F) or higher. Protect hoses and cylinders from weld spatter.

DANGER: Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.

DANGER: Only use hydraulic tools in a coupled system. Never use a tool with unconnected couplers. If the cylinder becomes severely overloaded, components can fail catastrophically causing severe personal injury or death.

3.0 TECHNICAL SPECIFICATIONS

G5 Air Torque Series	
Operating Pressure	10,000 PSI (700kg/cm ²)
Motor Rating	Rotary Air Valve, 3 hp Motor (3,000 rpm) 90 psi / 50 cfm
Flow Rate	700 cu.in./ min. @ 1,100 psi, 55 cu. in / min. @ 10,000 psi
Maximum Operating Temperature	170 F - (65 C)

4.0 WORKING PRESSURE

The pump's maximum working pressure is 10,000 PSI (700kg/cm²). Make sure that all hydraulic equipment such as rams, hoses, etc. used with this pump are rated at 10,000 PSI (700kg/cm²) operating pressure.

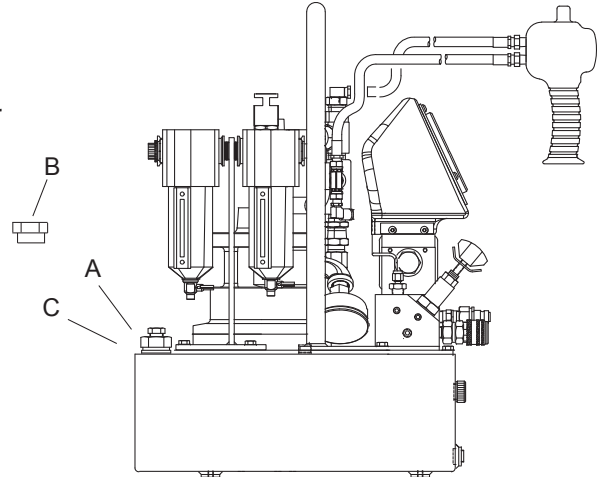
4.1 INSTALL VENT PLUG

Remove SHIPPING PLUG (A) and install VENT PLUG (B) into cover plate.

4.2 ADDING OIL

Remove OIL FILLER CAP (C) and add SIMPLEX Hydraulic Oil into reservoir. Oil level should not exceed 1" from the reservoir cover.

As a "rule of thumb" oil should be visual in site window when the unit is powered down and all connected tools or cylinders are retracted.



VENT PLUG OIL FILL LOCATION IS APPLICABLE TO THE 1.5, 2.5, GALLON RESERVOIRS

4.3 CONNECTING HYDRAULIC TOOLS

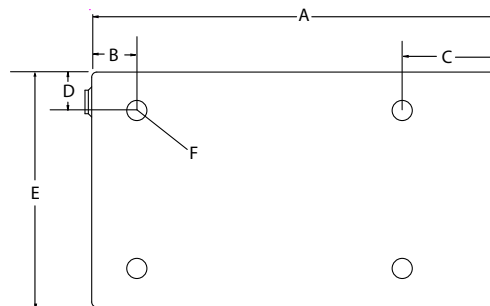
Use only tools, hoses and accessories rated at 10,000 PSI (700kg/cm²). When making connections with quick disconnect couplings, make sure the couplings are fully engaged. Threaded connections such as fittings, gauges, etc. must be securely tightened and leak free. Use 1.5 wraps of Teflon tape (or suitable thread sealant) on all threads, leaving the first complete thread free of tape to ensure no foreign matter enters the hydraulic circuit.

WARNING: Loose or improperly threaded fittings can be potentially dangerous if pressurized; however, severe over tightening can cause premature thread failure. Fittings need to be tightened secure & leak free. Never hold or stand directly in line with any hydraulic connections while pressurizing. Never grab, touch or in any way come in contact with a hydraulic pressure leak. Escaping oil can penetrate the skin and a serious injury can result.

CAUTION: Do not subject the hose to potential hazards such as sharp surfaces, extreme heat or heavy impact. Do not allow the hose to kink or twist. Inspect each hose for wear before it is used.

4.4 PUMP MOUNTING Refer to the chart for mounting dimensions to secure the pump to a fixed surface.

	1.5 gal.(6L)	2.5 gal.(10L)
A	15.13	17
B	3.68	4.75
C	1.57	2.37
D	1.43	1.93
E	8.75	9.75
F	1/4-20unc (4 places)	1/4-20unc (4 places)

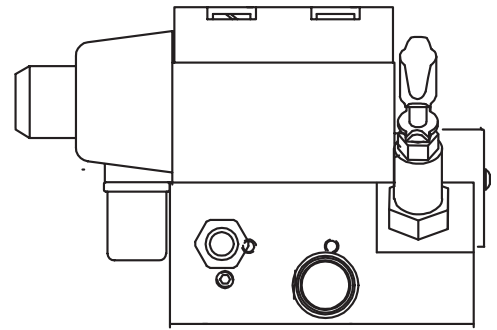


5.0 CONTROL VALVES & PENDANT

2-Position – 4 Way Solenoid Valve for Hydraulic Torque Wrenches.

- **To Advance**.....depress the Advance Switch
- **To Retract**.....release advance switch to Retract Tool.

2 Position - 4 Way Solenoid

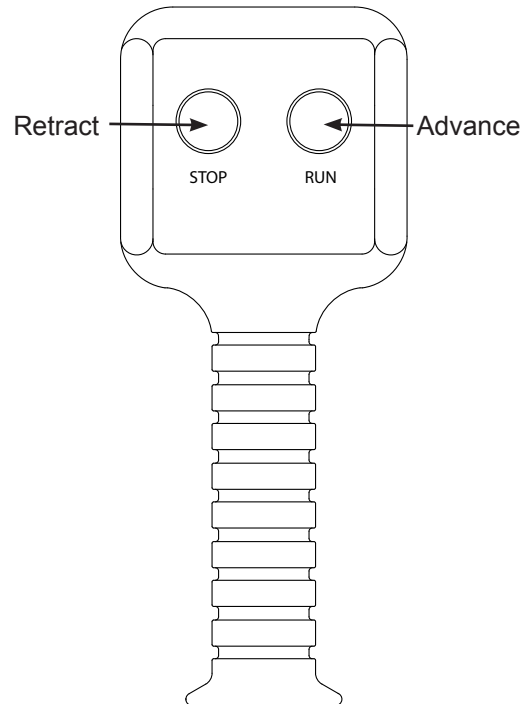


Remote pendant switch control as follows:

Configured with motor/valve control pendant:

ADVANCE = Press and hold switch to activate advance coil and turn motor on.

RETRACT = Release “run” button, press “stop” button to turn off motor.

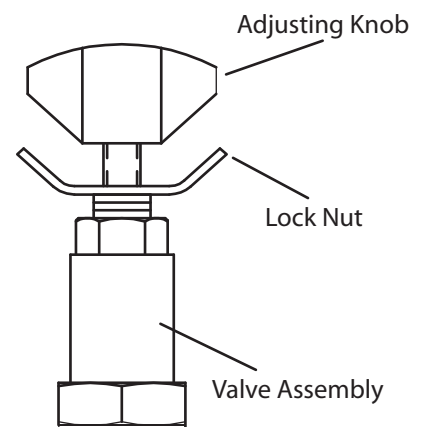


5.1 PRESSURE TORQUE SETTING

WARNING: Make these adjustments **BEFORE** putting torque wrench on nut or bolt head. The pump pressure setting may be above the pressure needed to provide the required torque for your application.

Exceeding required torque will cause equipment damage and may lead to serious personal injury.

1. See torque wrench instructions for amount of pressure required to produce desired torque.
2. Loosen lock nut and back out relief valve to prevent unintended pressure build up.
3. Turn pump on. Press and the “ADVANCE” switch, and read pressure gauge.
4. While holding the switch, turn relief valve in (clockwise) to increase pressure or out (counter-clockwise) to decrease maximum pressure. Repeat until correct pressure is obtained.
5. Tighten lock nut on the relief valve to maintain setting.
6. Run pump several times to test this setting before setting tool on the nut.



5.2 AIR MOTOR AND FILTER LUBRICATOR

The air motor is a precision built rotary motor. The top clearance (between rotor and bore) is .0015". The total end clearance (between the sides of the rotor and the end plates) is .002". The vanes take up their own wear and will last 5,000-12,000 hours, depending upon speed, method of oiling, operating pressure, and lend itself to operating pressure above 100PSI (6.89 Bar-Metric). Allowing excess moisture or foreign particles from the air line to enter the motor will nullify the guarantee.

A moisture trap and filter has been installed in the air line ahead of motor. For efficiency of output and control of speed, use air line of not less than 1/2" pipe size. When coupling or connecting the motor to a drive member, avoid any end or side thrust on the output shaft and especially **DO NOT HAMMER ON SHAFT.**

The starting torque is more than the running torque and could vary depending on the position at which the vanes stop in relation to the air intake port. The speed and torque can be regulated by using a pressure regulator or a simple shut-off valve. Lubrication is necessary for the shaft seal, and rust prevention. Each air powered jack is equipped with an automatic air line oiler set to feed 1-3 drops per minute. Use simplex #18243 antifreeze oil. Excessive moisture in the line can cause rust formation in the motor and might also cause ice to form in muffler due to expansion of air through the motor.

NOTE: To adjust oiler drops, turn dial counter clockwise to "raise", and clockwise to "lower".

If the motor is sluggish or inefficient, try flushing with solvent in well ventilated area. Disconnect the air line and muffler and add several teaspoons of solvent. Rotate the shaft by hand in both directions for a few minutes, again connect the air line and apply pressure slowly until there is no trace of solvent in exhaust air. (Keep face away from exhaust air). Check the muffler felts for grease, dirt, etc. If dirty, wash them in solvent. Replace the felts and connect the muffler. Relubricate the motor with a squirt of oil in the chamber. If the vanes need replacing, or foreign particles are present in motor chamber, an experienced mechanic may remove the end plate apposite the drive shaft end.

DANGER: To prevent explosive hazard, do not pump combustible liquids or vapors through these units.

5.3 AFTER COMPLETING THE JOB

Before disconnecting hoses, fittings, etc., first be sure the tool is unloaded and retracted, then unplug the power cord and shift the hydraulic controls several times to release system pressure. Store the pump in a clean, dry area.

6.0 PERIODIC MAINTENANCE

Completely change the hydraulic oil and clean the intake screen and magnet (located in the reservoir) twice a year. If equipped, change the external oil filter twice a year (**Use Simplex oil only, Model # AO1, 1 gallon**). Change the oil more frequently when used in extremely dusty areas or when the oil has been overheated. **Using oil other than Simplex Brand may void the pump's warranty.**

The following conditions require more frequent oil changes.

- Rigorous duty, where oil temperature may reach 150°F.
- High humidity environment and extreme changes in temperature that can result in condensation inside the reservoir.
- Dirty or dusty environments that may contaminate the oil.
- Frequent connection and disconnection of hydraulic hoses and components.

6.1 MAINTAIN OIL LEVEL

Check hydraulic oil level every 30 hours of operation (sight gauge should be completely covered in oil when all tools are retracted. Add **Simplex oil (Model # AO1 – 1 gallon)** when necessary. Oil level should be no more than 1" from top of reservoir plate – with cylinders retracted and motor off.

6.2 CLEAN OIL INTAKE SCREEN ONCE A YEAR

Loosen and remove reservoir plate bolts. Lift pump unit off the reservoir, being careful not to damage the gasket.

Applies to 1.5, 2.5 gallon reservoirs:

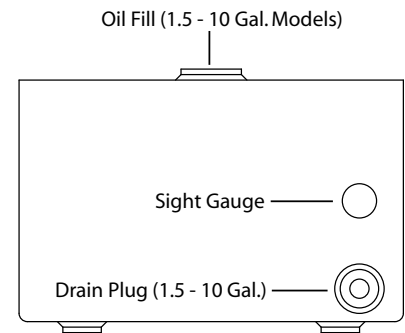
Remove the 5 Allen socket head cap screws securing the screen to the 1st stage gear pump. Care should be taken not to remove the center plate and gears. Remove and clean with nonflammable solvent, blow dry clean. Reinstall in reverse order and torque bolts to 75 inch pounds. Keep the motor and pump as clean as possible.

Applies to the 5 and 10 gallon reservoirs:

Unscrew screen from bottom of pump unit and clean with nonflammable solvent. Blow dry and reassemble. Keep areas around pump unobstructed to provide good air flow around the motor and pump. Keep the motor and pump as clean as possible.

6.3 FLUSH THE PUMP

If you suspect your pump has been contaminated or discover sludge or other deposits on internal components, you should thoroughly flush the pump. Remove the old oil from the reservoir, then thoroughly clean the reservoir and refill with a clean, nonflammable flushing oil. Reassemble the pump and motor to the reservoir. Now run the pump in no load condition for 1 or 2 minutes maximum. Unplug the pump and remove the motor and pump assembly again. Now drain the flushing oil and re-clean the inside of the reservoir. (Make sure flushing fluid is also drained from pump assembly). Refill the reservoir with Simplex hydraulic oil and reassemble the pump.



7.0 TROUBLESHOOTING

PROBLEM

CAUSE - SOLUTION

Sporadic Cylinder Action:

- Air in the hydraulic system. Bleed the hydraulic circuit.
- Check reservoir oil level.

Motor Will Not Start:

- Have motor checked for proper operation.
- Have qualified electrician inspect for loose or faulty switch.

Noisy Operation:

- Air in system.
- Be sure the oil reservoir is filled to normal level.
- Check all points where air might leak into system.
- Clogged or blocked intake screen.

Pump Oil is Over Heating:

- Inspect for high pressure leakage at the pump (leaking at plug or relief valve).
- Oil level is low. Fill reservoir to normal level, or retrofit the pump with larger reservoir or heat exchanger.

Pump Runs But Will Not Pump Oil:

- Pump is not primed. Run pump a few minutes tipping from side to side.
- Inspect to make sure that external adjustable relief valve is set properly.
- Defective control valve, take to nearest Simplex Authorized Service Center for repair.
- Incorrect motor rotation, take to nearest Simplex Authorized Service Center for repair.
- Check to make sure the intake screen is not clogged. Clean if needed.
- Check oil reservoir is low. Fill as needed.
- Oil viscosity is too high. Replace with SIMPLEX oil.

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