



**DIRECT DRIVE
COMPRESSOR 2.5HP
40L**



TSC240D



www.thetoolshed.co.nz



OPERATION MANUAL

PRODUCT DETAILS

PRODUCT

Compressor Direct Drive 2.5hp 40L

MODEL NO.

TSC240D

DISTRIBUTED BY



NOTE:

This manual is only for your reference. Due to the continuous improvement of the ToolShed products, changes may be made at any time without obligation or notice.

WARRANTY

This product may be covered under the ToolShed warranty. For more information see our Terms & Conditions at www.thetoolshed.co.nz



OPERATION MANUAL

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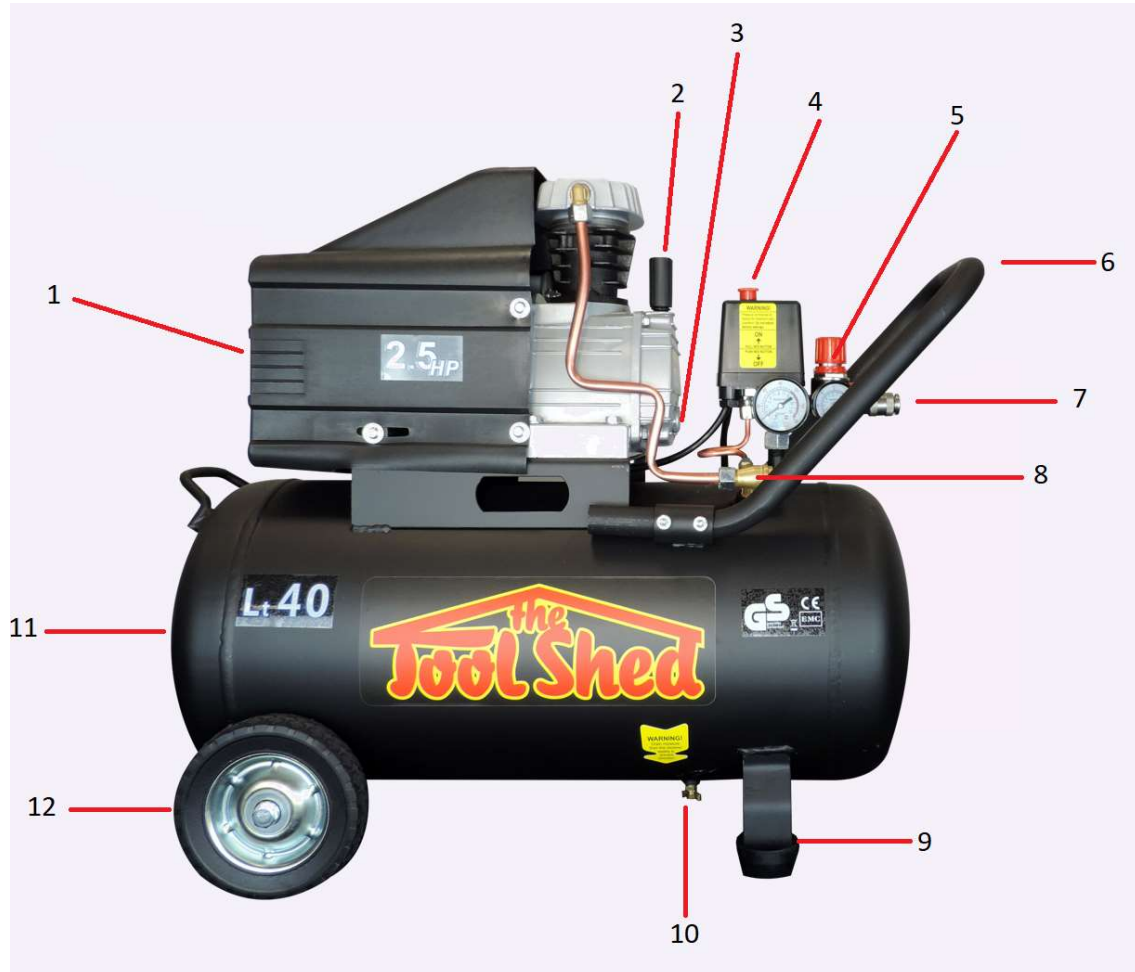
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SPECIFICATIONS

Motor Size	2.5HP
Cylinders	1
RPM	2800
Tank Size	40L
Pump Displacement	6.85CFM 194L/Min
Free Air Delivery at 90PSI	4.45CFM 126L/Min
Net Weight	32.5kg
Voltage	230 (single phase)
Dimensions (over handles)	700mm H x 800mm L x 360mm D

IDENTIFICATION



1	Cooling Fan	7	Air Coupling
2	Oil Filter	8	Non-Return Valve
3	Sight Glass	9	Feet
4	Pressure Switch	10	Drain
5	Regulator	11	Tank
6	Handle	12	Wheel

IMPORTANT INFORMATION

GENERAL SAFETY GUIDELINES



WARNING READ ALL SAFETY WARNINGS AND ALL INSTRUCTIONS. Failure to follow instructions and warnings could lead to serious injury, electric shock, or fire. Save ALL warnings and instructions for future reference.

WORK AREA SAFETY

- **Ensure that your work area is kept well-lit and clean.** Lack of visibility and clutter greatly increase the risk of accident.
- **Keep bystanders and children clear when operating a power tool or machine.** They can cause distraction or risk injury themselves.
- **Ensure you are not operating the power tool or machinery in the presence of flammable gases, dust, liquids, or anything that creates an explosive atmosphere.** Power tools and machinery can create sparks which can lead to ignition in these environments.

PERSONAL SAFETY

- **Always wear personal protective equipment.** Eye protection, ear protection, dust masks and other protective equipment will help to reduce the risk of personal injury.
- **Dress appropriately. Do NOT wear jewellery or loose clothing that can get caught in moving parts.** Keep hair, loose clothing, jewellery, and anything else that could be of risk away from moving parts or they could be caught.
- **Always remain alert and do NOT operate the power tool or machinery under the influences of any substances (drugs, medication, alcohol).** Losing focus could lead to injury while operating power tools and machinery.
- **Always keep proper footing and balance.** Overreaching can lead to slipping and falling which can result in injury.
- **Ensure the power switch is in the off position before connecting any battery or power source to the power tool or machinery.** This can lead to accidents as tools and machinery can fire suddenly when it is not expected and lead to accident.
- **Use all provided dust collection and extraction attachments if included.** This with the use of dust masks can help keep you safe from dust and keep your work site clear while working.
- **Ensure loose parts such as a wrench or adjusting key are removed before starting the power tool or machinery.** Failure to remove these can result in serious injury.

ELECTRICAL SAFETY

- **Do NOT use the power tool or machinery in raining conditions or wet areas where the power tool or machinery could get wet.** Water in the power tool or machinery can lead to electric shock.
- **Only use the power tool or machinery when the plug correctly matches the power outlet.** Modifying plugs greatly increases the risk of electric shock.
- **Keep the power cord away from anything that could damage it such as sharp edges, moving parts or heat.** A damaged power cord increases the risk of electric shock.
- **Avoid body contact with grounded or earthed surfaces.** Surfaces such as radiators, ranges, pipes, and refrigerators can increase risk of electric shock due to your body being earthed or grounded.



SERVICE

- **Have your tools and machinery with ToolShed replacement parts.** This will ensure that the safety of the power tool or machine is maintained.

ADDITIONAL SAFETY FOR BELT DRIVEN COMPRESSOR

- Should you intend to use an air tool for long durations, ensure that the output of the compressor (known as the FAD or Free Air Delivery), exceeds the air consumption of the tool being used.
- Do not use extension cords. **Using an extension lead on a compressor can cause voltage drop, overheating the motor and leading to appliance damage or even fire.**
- As your compressor has an air-cooled motor as well as an air-cooled pump which draws in atmospheric air, it is important not to run the compressor in confined areas with poor ventilation or on loose surfaces such as dirt, dust, or sand. Otherwise, abrasive particles will be sucked into the air stream and cause the premature wear of components.
- Your air compressor is not waterproof. Do not attempt to use or store it in the rain, snow, or any other environment with extreme conditions. It has been designed for use and storage indoors.
- Never point any nozzle or sprayer toward any part of the body or at other people or animals.
- Do not operate the compressor if any guards or covers are missing, damaged or not installed correctly.
- Compressed air can contain carbon monoxide, hydrocarbons and/or other poisonous contaminants that can cause death or serious injury. The air compressor is not designed, intended, or approved for breathing air. Do not use the compressor for any gas other than air.
- DISCONNECT POWER SUPPLY BEFORE SERVICING.
- Do not stand on the compressor or use it as a handheld.
- High pressure air can cause serious injury or death. Do not bypass, modify, or remove the safety valve. Do not operate the compressor with a faulty safety valve or pressure gauge.
- Release air slowly when draining condensation or depressurizing the compressor. Do not connect the compressor to air handling equipment that cannot withstand the compressor's maximum design pressure.
- Rusted, cracked, or damaged air receiver tanks can explode and cause death or serious injury and must be replaced. Drain tank daily or after each use through the release valve.
- Release compressed air from the tank before servicing. Do not weld, drill, or otherwise modify the air receiver tank.
- Do not spray flammable liquids in a confined area. Do not smoke while spraying where sparks, flames, or other ignition sources (including the compressor) are present.
- Do not direct paint or any other sprayed material at the compressor. Locate the compressor as far away from the spraying area as possible to minimize overspray accumulating on the compressor and/or clogging its filters.
- Motors and electrical equipment can cause electrical arcs that may ignite a flammable gas or vapor. Do not operate or repair the compressor in or near flammable gas or vapor. Do not store flammable liquids or gasses in the vicinity of the compressor.

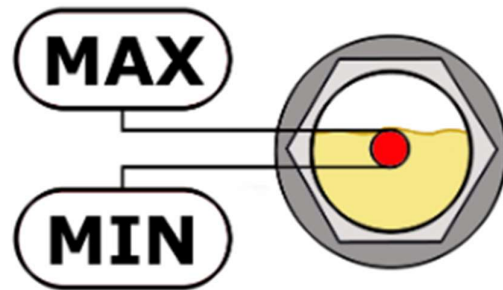
- Before attempting to install, maintain, repair, store, or transport the compressor, switch off and disconnect the unit from power supply, and carefully release all air pressure from receiver tank, air hoses and/or piping.



**CHECK OIL LEVEL BEFORE STARTING COMPRESSOR
SIGHT GLASS – CHECK DAILY**

The compressor oil level can be viewed through the sight glass – the compressor must be on a level surface.

The top of the red dot indicates the full mark and the bottom of the red dot indicates the low mark. Always ensure the oil level is correct before operating the compressor.



**SHUT TANK DRAIN IF PRESSURE WON'T BUILD UP
DRAIN AIR TANK – DAILY**

A drain valve is fitted to the air receiver tank to permit the release of water condensation that would otherwise corrode the tank and damage pneumatic devices.

Loosen the drain nut and allow any condensed water to escape, once all the air and moisture has been released, finger tighten only, the drain valve.

DON'T TURN THE COMPRESSOR ON/OFF AT THE WALL

The pressure switch automatically controls the power to the motor and operates the pressure relief valve. It also allows for manual operation via the push/pull on/off switch on top of the pressure switch.

Failure to vent the pressurized air between the pump and the tank will cause excessive current draw on startup which may lead to motor failure. For this reason, always turn the compressor on and off via the pressure switch.

ONLY OPERATE THE COMPRESSOR ON A FLAT SURFACE

Do not operate the compressor on inclines or on a rooftop or elevated position that could allow the unit to fall or be tipped over. Always disconnect the power before moving.

ADEQUATE POWER SUPPLY IS ESSENTIAL

The compressor must be connected to a properly grounded circuit of adequate capacity.

OPERATION

- Before operating the air compressor, always check first to ensure that there is no damage or missing parts. If so, rectify these issues before proceeding further.



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- Check the compressors pump oil level by looking at the sight glass. The oil level should be at the top of the red circle on the oil sight glass. Add oil, if required, through the oil fill cap and only when the unit is not operating. Do not overfill with oil.
- Check that the outlet valve, if fitted, is closed.
- Any connected air hose(s) and/or distribution pipe(s) should not be open to the atmosphere. This is to prevent any injuries from 'hose whip' and/or high-pressure air discharge. In the event that an air line is cut or broken, the air supply must be immediately closed off at the compressor. Do not attempt to "catch" the loose end of a discharging air hose.
- Check the tank drain air valve is closed.
- Any unusual noise or vibration likely indicates a problem with the compressor. Do not continue to operate the unit until the source of the problem has been identified and corrected.

RUN IN PROCEDURE

When starting for the first time, leave the air compressor to run for 10 minutes without load. Leave the air cock completely open. After 10 minutes, check the drain cock is closed and shut the main air cock. As tank pressure increases, check that the compressor stops automatically once maximum pressure is reached.

MAINTENANCE

Before performing any maintenance or repair work on the compressor, switch off, disconnect from power supply, and release all air pressure from the receiver tank, air hoses and/or air piping. Use only ToolShed spare parts for maintenance and repair of the compressor to ensure its safe and reliable operation. The maintenance schedule shown has been developed for typical industrial applications in clean indoor environments. The service intervals should be shortened in harsher working conditions. Regular preventative maintenance is essential for the safety, reliability, and performance of the compressor.

REGULAR MAINTENANCE SCHEDULE

ITEM	SERVICE PERIOD				
	Daily	After 10 Hours	Monthly	Every 6 Months	Yearly
Check the oil level					
Drain tank condensation					
Test safety valve					
Clean air intake filter	Service more frequently when used in dusty conditions				 Replace filter element
Change pump oil		 1 st Time			
General cleaning of the compressor & check for air and oil leaks					

Cleaning

Switch off the air compressor and use light air pressure to blow dust and foreign matter off the compressor pump, motor piping and air receiver tank. Oil and grease marks should be cleaned off using mild household surface cleaner and a soft rag. Do not use abrasive cleaners or strong solvents that can damage the compressors paint finish.

Air Receiver Tank

To drain condensation from the air receiver tank, slowly open the drain valve and allow the condensation to discharge. Do not pollute the environment by improper or illegal disposal of the condensation that may contain lubricating oil and/or other contaminants.



Air Tightness

While the air receiver tank is pressurized to at least 120 PSI and the compressor is switched off, listen for any audible air leaks. Squirt soapy water around any suspect joint and watch for bubbles, indicating a leak. De-pressurize the air receiver tank carefully and all connected air hoses and/or piping before commencing any repairs.

TROUBLESHOOTING

Before performing any inspection, test, or repair work on the compressor, switch off the unit, disconnect it from the power supply, and release all air pressure from the receiver tank, air hoses, and/or piping.

Please refer to the table below for assistance and with diagnosing and repairing any problem that might occur with your air compressor. Whilst many of the tasks can be undertaken by a mechanically proficient person with access to proper tools, all electrical work must be undertaken by a licensed electrician.

Use only genuine spare parts from The ToolShed for maintenance and repair of the compressor to ensure its safe and reliable operation.

Symptom	Possible Cause	Corrective Action
Motor will not start, runs slowly or repeatedly trips out overload protection.	1. Pressure switch not turned on. 2. Air receiver tank pressure above cut-in pressure. 3. No voltage at the pressure switch. 4. No voltage at the electric motor. 5. No voltage on one or two phases of power supply. 6. Low supply voltage. 7. Nil or restricted discharge air flow through non-return valve. 8. Damaged motor cowl and/or fan, other motor faults. 9. Compressor pump partially or totally seized.	1. Turn on pressure switch. 2. Nil (no fault). Unit will start when pressure drops. 3. Check electricity supply including all fuses, circuit breakers, switches, and wiring. 4. Repair or replace pressure switch. 5. Check voltage on all 3 phases of power supply. 6. Check no load and full load supply voltage. Upgrade power supply circuit if required. Disconnect any other appliances on the same supply circuit. 7. Repair or replace non-return valve. 8. Replace cowl and/or fan, replace motor. 9. Repair or replace compressor pump.
Compressor pump does not come up to speed.	1. Low supply voltage. 2. Damaged or worn. 3. Compressor pump partially seized.	1. Check no load and full load supply voltage. Upgrade power supply circuit if required. Disconnect any appliances on the same supply circuit. 2. Replace compressor pump valves and or blown head gaskets. 3. Repair or replace

		compressor pump.
Excessive noise (including knocking and rattling) or vibration.	1. Low oil level. 2. Pistons hitting cylinder heads. 3. Damaged or worn crankshaft bearings, crankshaft, con-rods, piston pins, pistons, cylinders and/or valves. 4. Faulty non-return valve. 5. Loose fasteners.	1. Add oil. 2. Remove cylinder heads and check for foreign matter on top of pistons. 3. Replace components or entire pump. 4. Repair or replace non-return valve. 5. Check and tighten fasteners.
Slow pressure rise or unable to reach cut-out pressure.	1. Air demand exceeds compressor pump capacity. 2. Air leaks. 3. Blocked or dirty inlet air filters. 4. Head unloaders not fully retracting (usually indicated by air blowing out from air filter inlets). 5. Damaged or worn compressor pump valves and/or blown cylinder head gaskets. 6. Damaged or worn piston rings and/or cylinders. 7. Faulty non-return valve.	1. Reduce air demand or use larger or additional compressor(s). 2. Tighten, refit, or replace leaking connections or components. 3. Clean or replace air filter elements. 4. Repair or replace head unloaders. 5. Replace compressor pump valves and/or cylinder head gaskets. 6. Replace components or entire compressor pump. 7. Repair or replace non-return valve.
Compressor pump runs excessively hot (possibly melts air filter enclosures).	1. Incorrect direction of rotation. 2. Ambient temperatures too high or insufficient ventilation. 3. Low oil level. 4. Excessive cycle duty. 5. Damaged or worn compressor pump valves and/or blown cylinder head gaskets.	1. Check compressor pulley turns in correct direction. Change electric motor wiring connections if incorrect. 2. Reduce ambient and/or improve ventilation. 3. Add oil. 4. Reduce air demand. 5. Replace compressor pump valves and/or cylinder head gaskets.
Excessive cycling between pumping mode and off mode.	1. Excessive duty cycle. 2. Air leaks. 3. Excessive condensation in air receiver tank.	1. Reduce air demand. 2. Tighten, refit, or replace leaking connections or components. 3. Drain air receiver tank

		more regularly.
Excessive oil in discharge air.	1. Blocked or dirty air inlet filters. 2. Overfilled with oil. 3. Low oil viscosity. 4. Excessive duty cycle. 5. Blocked or damaged crankcase breather. 6. Damaged or worn intake valves, piston rings, pistons, and/or cylinders.	1. Clean or replace air filter elements. 2. Drain oil down to high level mark. 3. Replace with correct oil. 4. Reduce air demand. 5. Clean or replace crankcase breather. 6. Replace components or entire compressor pump.
Water discharge in air.	1. No fault, this is normal operation. Condensation quantity will increase with duty cycle and humidity.	1. Install automatic drain tank valve or manually drain tank more often.
Compressor does not switch off and safety valve discharges.	1. Faulty pressure switch. 2. Faulty safety valve (use tank pressure gauge to help diagnose fault).	1. Replace pressure switch. 2. Replace pressure valve.
Low suction or air blowing out at air filter inlets during pumping mode.	1. Damaged or worn compressor pump inlet valves and/or blown cylinder head gaskets.	1. Replace compressor pump inlet valves and/or cylinder head gaskets.
No short discharge of air from the pressure switch after reaching cut out pressure or being manually switched off.	1. Faulty unloader valve in pressure switch. 2. Blocked or damaged unloading line. 3. Blocked or faulty non-return valve.	1. Replace unloader valve or complete pressure switch. 2. Clean or replace unloading line. 3. Clean, repair or replace non-return valve.
Continuous discharge of air from the pressure switch after reaching cut-out pressure or being manually switched off.	1. Faulty non-return valve.	1. Repair or replace non-return valve.
Air receiver tank does not hold pressure when compressor is off and discharge outlet valve is closed.	1. Faulty non-return valve. 2. Air leaks.	1. Repair or replace non-return valve. 2. Tighten, refit, or replace leaking connections or components.
Oil appears 'milky' in sight glass.	1. Water contamination in oil.	1. Replace oil and move compressor to less damp or humid location.
External oil discharge from compressor pump.	1. Oil leaks.	1. Tighten, refit, or replace leaking connections or components.



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Oil appears black in sight glass.	1. Graphite carry-over from cast iron material (initial oil fill only). 2. Oil dirty and/or overheated (initial or subsequent oil fill).	1. Replace oil. 2. Replace oil and check for compressor pump overheating.
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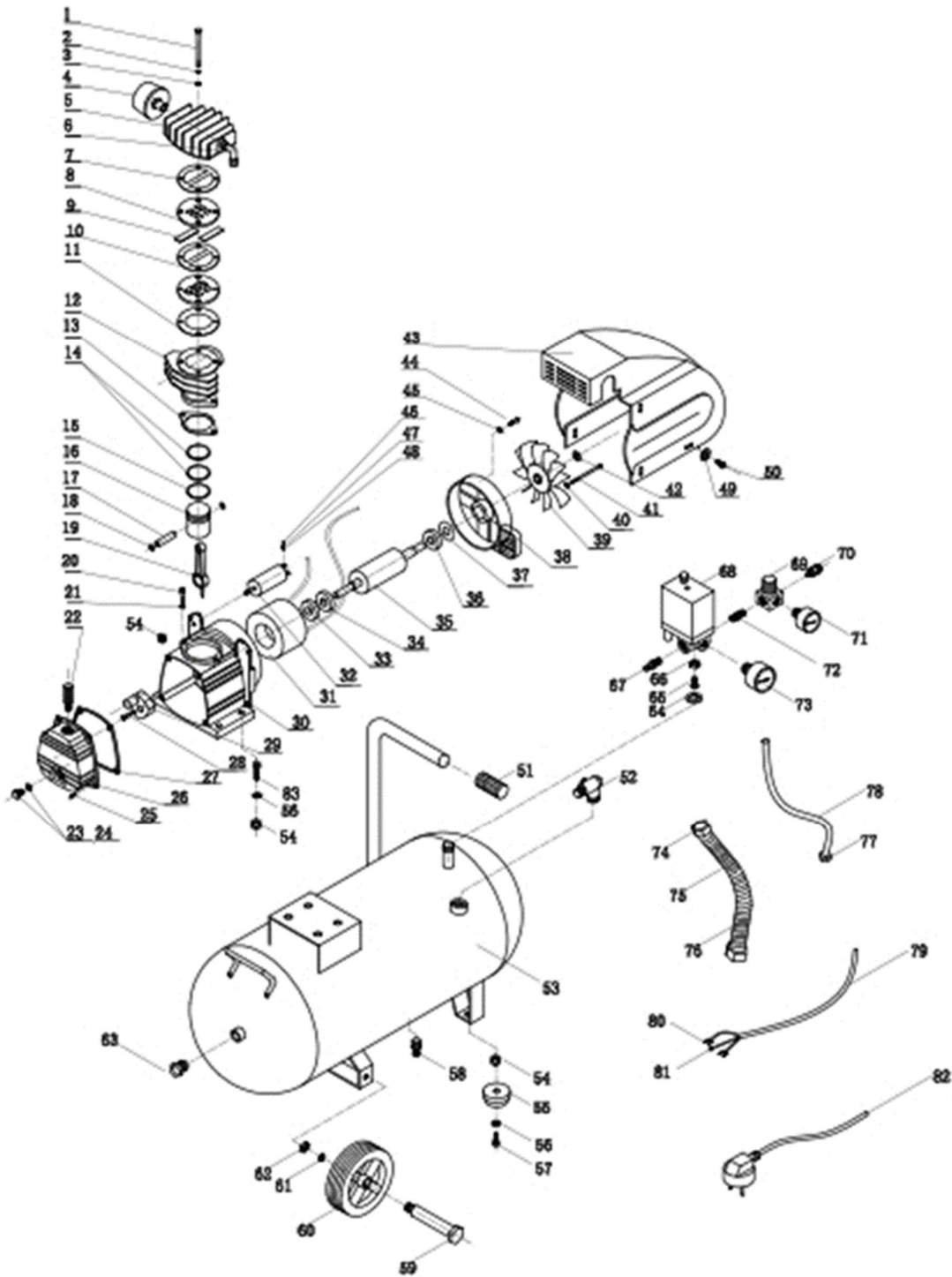
TRANSPORT

Always de-pressurize the air receiver tank before transporting the air compressor. Always keep the compressor level to prevent oil spillage. Ensure that adequate lifting equipment is available for moving and loading the compressor. Lifting equipment must be properly rated for the weight of the compressor. Take care when attaching load restraining devices to ensure that the compressor does not tip over during transport.

STORAGE

Always de-pressurize and drain the air receiver tank before storing the air compressor. Always keep the compressor level to prevent oil spillage. Store the compressor in a cool, dry, and shaded place and keep it covered to prevent the ingress of rust and debris.

PARTS LIST



Part No.	Part	Part No.	Part
1	Bolt M6x55	41	Bolt M5x105
2	Spring Washer	42	Spring Washer
3	Washer	43	Motor Cover
4	Air Filter	44	Bolt M4x6
5	Cylinder Head	45	Washer
6	Elbow Exhaust	46	Bolt M3x6
7	Cylinder Gasket	47	Spring Washer
8	Valve Plate	48	Spring Washer
9	Valve Clack Pin	49	Washer
10	Valve Plate Gasket	50	Bolt M6x15
11	Gasket	51	Handle
12	Cylinder	52	Check Valve
13	Cylinder Gasket	53	Tank
14	Piston Ring	54	Bolt M8
15	Oil Ring	55	Cushion Foot
16	Piston Ø47	56	Washer
17	Piston Pin	57	Bolt M8x20
18	Spring Washer 12	58	Drain Cock
19	Connecting Rod	59	Bolt
20	Bolt M8x22	60	Wheel
21	Spring Washer	61	Spring Washer
22	Breather	62	Bolt M10
23	Oil Sight Glass	63	Plug G1/2
24	Washer	64	Gasket
25	Bolt M6x16	65	Pressure Switch Connector
26	Crankcase Cover	66	Screw Nut
27	Crankcase Gasket	67	Safety Valve
28	Bolt M8x22	68	Pressure Switch
29	Crank Shaft	69	Regulator Valve
30	Crank Case	70	Breather
31	Stator	71	Pressure Gauge Y40
32	Capacitance	72	Connector
33	Seal	73	Pressure Gauge Y50
34	Bearing 6204	74	Nut
35	Rotor	75	Pipe
36	Bearing 6202	76	Cooler
37	Washer 202	77	Unloading
38	Rear Cap	78	Unloading Pipe
39	Fan	79	Plug
40	Spring Washer		