OMEGA
COMPRESSORS

For us, it's not just business. It's personal.

AIR COMPRESSOR – OIL LUBRICATED OPERATING INSTRUCTIONS

PLEASE READ THIS MANUAL BEFORE INSTALLING OR USING YOUR AIR COMPRESSOR UNIT. IT CONTAINS VALUABLE INFORMATION THAT WILL HELP YOU IN THE RECEIVING, INSTALLATION, USE, AND MAINTENANCE OF THE UNIT. KEEP THIS BOOKLET IN A SAFE PLACE FOR FUTURE REFERENCE.

COMPRESSOR IDENTIFICATION

Please fill in the appropriate information in the spaces provided below. These numbers will allow us to correctly identify your compressor in the event you need service or parts.

UNIT MODEL NUMBER: _____ (i.e. TK-5080V)
(Located on Base of Air Receiver or Air Receiver – White Label)

UNIT SERIAL (MFG.) NUMBER: _____ (i.e. OC-4963)
(Located on Base of Air Receiver or Air Receiver – White Label)

PUMP MODEL NUMBER: _____ (i.e. TK-50)
(Located on Front or Side of Compressor Pump)

PUMP SERIAL NUMBER: _____ (i.e. 23045)
(Located on Front or Side of Compressor Pump – Professional Series Compressor Pumps do not have Serial Numbers)

ELECTRICS: _____ (i.e. 230V/60Hz/1PH)
(Located on Nameplate of Motor)

COMPRESSOR DISTRIBUTOR _____
(Who You Bought the Air Compressor From)

63 Morrow Road, Barrie, Ontario, Canada L4N 3V7 Phone: 1-800-668-8448 Fax: (705) 721-8646 www.omegacompressors.com

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SAFETY PRECAUTIONS

Please familiarize yourself with the following information for preventing damage to your air compressor unit and injury to the operator and/or property damage.

ELECTRICAL HAZARD

Never use the air compressor without connection to a properly grounded outlet with the specified voltage and fuse protection. Do not use the compressor in a wet or explosive environment, as the electrical components on the compressor are general purpose and the motors are open drip proof. The compressor must be located a minimum of 20 feet (6.1 metres) from any source of potentially explosive vapours. Never attempt maintenance or adjustment with power connected or while the equipment is in operation.

TANK SAFETY VALVE

The safety valve is factory installed to prevent the air receiver from damage should malfunction occur in the pressure switch. It is factory set at a specific limit for your particular model, and should never be tampered with. Adjustment by user will automatically void warranty.

PRESSURE SWITCH

The air compressor switch is set at the factory for optimum performance of your particular model. Never bypass or remove this switch as serious damage to equipment or personal injury could result from too high of pressure.

MOTOR AND COMPRESSOR PUMP

Air compressors become hot while in operation. Never touch the motor, compressor pump, and/or discharge tubing while in operation or immediately after operation. Touching these areas may cause severe burns. The compressor automatically operates while the power is on. Do not come into contact with moving parts. Shut off all power to the unit before attempting to repair or maintain the compressor. Never operate the compressor with the belt guard removed.

COMPRESSED AIR CAUTION

Compressed air from the unit may contain poisonous vapours which are not suitable for inhaling and could be harmful to your health. Never directly inhale compressed air produced by the compressor. Always use proper filtration, carbon monoxide monitor and quality tested air for breathing applications from a compressor. Ensure your breathing apparatus meets NIOSH and OSHA requirements. Always wear proper safety equipment while using compressed air.

AIR RECEIVER

Over pressurizing the air receiver could cause an explosion or rupture. To protect from over pressurizing a factory preset safety valve is included. Do not remove, make adjustments or substitutions for this valve. Occasionally pull the ring on the valve to make sure that the valve operates freely. If the valve does not operate freely, it must be replaced.

Never weld to, drill, or change the air receiver in any way. If any of the above conditions are changed or tampered with this may result in voiding of the manufacturer's warranty.

GENERAL DESCRIPTION OF AIR COMPRESSOR

To compress air, the piston moves up and down in the cylinder. During the downstroke, air is drawn in through the inlet valve. The discharge valve remains closed. During the upstroke of the piston, air is compressed. The inlet valve closes and compressed air is forced out through the discharge valve, through the discharge tube, through the check valve and into the air receiver. Working air is not available until the compressor has raised the air receiver pressure above the requirement at the air service connection. The air inlet filter openings must be kept clear of obstructions.

INSPECTION OF AIR COMPRESSOR

Each Omega Air Compressor is factory tested and inspected before shipment. Every attempt is made to ensure safe and complete shipment of our products. Freight damage or misplacement of goods may occur. Shipments of Omega products are the property of the consignee when the products leave our facility. Omega Compressors is not responsible for any damages or shortages caused to the products after it has left our facility.

It is the responsibility of the receiver of the goods to ensure the product has been received in full and has arrived in suitable condition. Damage may not be visible at the time of off-loading, but may only become apparent upon unpacking or start-up.

Should there be shortages or damages in shipment to the product, A Loss or Damage Claim should be submitted to the carrier and supported by copies of the bill of lading, invoice, estimate to repair and a damage report. Do not discard any of the products or packaging as they may be required by the carrier for inspection.

GENERAL REQUIREMENTS

As the owner of a new Omega Air Compressor Unit, it is your responsibility to ensure it is installed correctly, as well as maintained and serviced on a regular basis. Information has been included in this booklet outlining the suggested air compressor maintenance schedules and a trouble shooting guide. It is important that you read this information and keep it in a safe place for future reference.

INSTALLATION - MECHANICAL

Locate the air compressor in a clean, dry and well ventilated sized area that allows for room temperature under 38 degress Celsius (Ideal temperature range would be between 15 to 25 degrees Celsius). The air compressor should be located 12 to 18 inches away from walls or any other obstruction that would interfere with the air fl ow through the pump flywheel. If possible, the air compressor should be located in a separate room or area with an air intake or fan positioned on an outside wall for maximum air fl ow and cooling. The air compressor is designed with heat dissipation fi ns that allow for proper cooling. Keep the fins and other components clean. A clean compressor runs cooler and provides longer service. Allow room for easy access to the air compressor for maintenance and service work.

For permanent installation, the compressor may be bolted to the floor through holes provided in the compressor feet. Shims and vibration isolators or vibration pads must be used to level the compressor before bolting it to the floor. Severe vibration will result when the compressor is bolted down tightly and the feet are not level. This can lead to welds cracking or fatigue failure of the air receiver.

Omega Compressors offers vibration isolators or vibration pads, flex hoses, electronic auto drains or pneumatic auto drains along with a host of other accessories such as filters and refrigerated air dryers etc. to provide reliable clean dry compressed air. Ask your local Omega distributor for details on all our accessories.

INSTALLATION - ELECTRICAL

It is your responsibility to ensure that the Air Compressor Unit is electrically connected in a safe and correct manner. Any electrical work should be carried out by a competent electrician and installed in a way which meets all applicable codes and regulations. A magnetic starter must be an integral part of the air compressor except on contractor and professional series units. A magnetic starter may be supplied with your unit from the factory.

Failure to connect the air compressor correctly to your buildings electrical services may result in serious personal injury or damage to the equipment.

Please note that under normal conditions, the air compressor will operate intermittently. Should it be necessary to service the air compressor ensure the power source has been shut down. This must be done to prevent personal injury or damage to the unit.

Do not attempt to operate the air compressor unit without first checking the oil level in the pump. Add oil as required. Serious damage may result from use without oil.

MOTORS

Wiring must be done in a manner that full voltage nameplate +/- 10% is available at the motor terminals during startup. Use of an incorrect electric motor for your particular building service will result in premature motor failure and is not covered by Omega Compressors or Motor manufacturer's warranty. The warranty that exists on the electric motor is that of the original manufacturer. In the event of a motor failure contact your Omega Distributor or Service Centre for the location of the nearest authorized motor service centre.

PRESSURE SWITCHES

The pressure switch located on the compressor unit acts as a pilot device activating the coil on the magnetic starter except on contractor and professional units where the pressure switch would act as a pilot device activating the motor. The pressure switch cut in/cut out has been preset at the factory. Do not tamper with the settings. Consult your local distributor or service centre should the switch not be operating properly.

PUMP ROTATION

The compressor is to be wired in a manner that the rotation of the flywheel causes the air to be blown over the pump. This allows the pump to cool properly. When facing the nameplate side of the unit the flywheel must rotate clockwise unless otherwise noted on the unit with an arrow on the belt guard or motor.

COMPRESSOR LUBRICATION

Check the oil quantity and quality before operating the compressor. Do not add or change oil while the compressor is in operation. Use only Omega 30wt. Non-Detergent Compressor Oil.

FILLING THE OIL

1.) Disconnect Electrical Power
2.) Remove the oil filler plug.
3.) Slowly pour the proper oil into the pump crankcase.
4.) Always keep oil level between the marks "H" and "L" on the oil stick or on the red circle on the sight glass.
5.) Refer to Gas Engine Owner's Manual for filling of oil for gas engines.

CHANGING THE OIL

CHANGE OIL AFTER THE FIRST 100 HOURS OF COMPRESSOR OPERATION. THEN CHANGE OIL AFTER EVERY 300 WORKING HOURS OR EVERY 3 MONTHS WHICHEVER COMES FIRST.

1.) Disconnect Electrical Power.
2.) Remove the oil drain plug. Allow oil to drain completely.
3.) Replace the oil drain plug. The use of a sealing compound or Teflon tape to avoid leakage is recommended.
4.) Refill with Omega 30wt. Non-Detergent Compressor Oil to the proper level.

INITIAL START-UP PROCEDURE

Do not attempt to operate the unit without first checking whether there is oil in the pump. Add oil as required. Serious damage may result from use without oil. See page for proper compressor lubrication.

1.) Check to see that nuts and bolts are all snug. This must be done, as some fasteners may become loose in transit.
2.) Check to see if the belt is installed properly, with proper tension.
3.) Check belt tightness so that when pressure is applied at the centre, there is ½" slack.
4.) Check that proper type and oil level is correct. See page 3 for proper compressor lubrication.
5.) Check that compressor is fixed on a strong, stable level base.
6.) Check that oil breather is clean.
7.) Check that air filter is clean.
8.) Do not place any materials on or against the belt guard, or the compressor unit itself. Placing materials there will limit the cooling of the compressor and could lead to premature failure.
9.) Turn the compressor "on" momentarily by positioning the fused disconnect in the "on" position. Ensure that the flywheel is turning in the correct position. See "PUMP ROTATION" (page 3). On compressors with three phase power, adjust the wiring at the motor terminals if the rotation is incorrect. Refer to the wiring diagram on or in the motor terminal box.
10.) Open the air receiver outlet ball valve and start the unit. Ensure air is escaping to atmosphere. Allow the unit to operate for a minimum of twenty minutes in this no-load condition to lubricate bearings and pistons.
11.) After running the compressor unit for twenty minutes, close the ball valve, and allow the unit to reach maximum operating pressure. Ensure that the compressor shuts down at the pre-set maximum pressure, and the head pressure is released through either the pressure switch or the CPR on the front of the pump.
12.) Check the air compressor and piping systems for air leaks, and correct as required.
13.) Shut off all power to the air compressor before attempting any repair or maintenance.
14.) Stop the compressor, and check the oil level in the crankcase. Add oil as required.
15.) Your compressor is ready for use.

PREVENTATIVE MAINTENANCE

Before doing any maintenance or adjustments to your air compressor, the following safety precautions should be taken.

1.) DISCONNECT ELECTRICAL POWER.
2.) DRAIN AIR RECEIVER OF AIR PRESSURE.

DAILY CHECK LIST

1.) Check Oil Level.
2.) Drain Condensation from Air Receiver.
3.) Check for Any Unusual Noise or Vibration.
4.) Be Sure All Nuts and Bolts are Tight.

WEEKLY CHECK LIST

1.) Clean Air Filter by Opening Air Filter Cap. Replace Filter if Necessary.
2.) Check Oil Level and Top Up if Necessary.

QUARTERLY OR 300 HOUR CHECK LIST

1.) Change Oil and Filter Element.
2.) Check Condition and Alignment of Belt, Flywheel and Motor Pulley. Adjust Belt Tension if Necessary or Replace Belt if Worn.
3.) Check Safety Valve.
4.) Check Pressure Switch Unloader to Ensure Compressor Head Unloads Whenever Motor Shuts Down.
5.) Clean and Blow Off Pump Fins and Motor.
6.) Inspect Air System for Leaks, by Applying Soapy Water to All Joints. Tighten Joints if Leakages are observed.

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TROUBLE SHOOTING GUIDE

CONDITION	CAUSE	CORRECTIVE ACTION
Compressor Will Not Start	1. Fuse blown or circuit breaker tripped. 2. Loose electrical connections. 3. Overheated motor.	1. Check for cause of blown fuse or breaker and replace or reset. 2. Check wiring connections. 3. Press reset button or wait for automatic reset. Check belt tension.
Low Pressure	1. Air leak in safety valve. 2. Loose tube of fittings. 3. Restricted air filter. 4. V-Belt loose. 5. Defective check valve	1. Check valve manually by pulling upward on ring. If condition persists replace valve. 2. Tighten fittings. 3. Clean or replace. 4. Adjust belt tension. 5. Replace check valve.
Safety Valve Releasing On Air Receiver	1. Defective pressure switch or improper adjustment. 2. Defective safety valve.	1. Check for proper adjustment and if problem persists replace pressure switch. 2. Replace safety valve.
Intercooler Safety Valve Releasing On Air Compressor Pump	1. Dirty or defective high pressure intake or exhaust valves. 2. Intercooler clogged with carbon. 3. Defective safety valve.	1. Clean, repair or replace valves as required. 2. Clean or replace. 3. Replace safety valve.
Excessive Oil Discharge and Carbon Formation	1. Improper oil viscosity. 2. Overfilling the crankcase with oil. 3. Restricted air intake filter. 4. Carbon exhaust valves. 5. Worn Valves. 6. Worn piston rings. 7. High ambient temperature and/or humidity. 8. High percentage of running time. (80% to 100%)	1. Replace oil with 30wt. non-detergent compressor oil. 2. Drain oil and fill to proper level. 3. Clean or replace filter. 4. Clean or replace as required. 5. Replace valve assemblies. 6. Replace piston rings. 7. Install a moisture separator and/or dryer followed by and oil filter. 8. Check for air leaks. If no leaks are found you may require an additional compressor unit as your air demand is too much for existing unit.

CONDITION	CAUSE	CORRECTIVE ACTION
Excessive Noise	1. Loose flywheel or motor pulley. 2. Loose valve. 3. Noisy only during start-up, check for loose belts. 4. Vibrating belt guard, piping or loose belts. 5. Unit not installed level. 6. Improper grade of oil in crankcase. 7. Carbon or foreign material on piston. 8. Worn Bearings.	1. Tighten as required. 2. Inspect valve for damage. Replace as required. 3. Adjust for proper tension. 4. Tighten as required. 5. Ensure that unit is mounted level. 6. Replace oil with 30wt. non-detergent compressor oil. 7. Clean piston. Check cylinder walls for scoring. 8. Replace main bearings.
Reduced Air Delivery or Insufficient Air	1. Restricted air filter. 2. Loose V-belt. 3. Pump valves or tank check valve leaking, sticking or carbon build up 4. Air leaks in the system. 5. Undersized unit for air requirements.	1. Clean or replace filter. 2. Adjust to proper tension. 3. Clean, repair or replace. 4. Fix leaks. 5. Contact Omega Compressor distributor.
Compressor Over-Heating	1. Undersized unit for air requirements. 2. Compressor location 3. Pump rotating the wrong way. 4. Air leaks in the system. 5. Restricted air filter. 6. Improper grade or level of oil. 7. Worn, damaged, or carbon build up on valves. 8. Carbon build up at aftercooler tube or check valve.	1. Contact Omega Compressor distributor. 2. See Installation – Mechanical Section. (pg.2) 3. See Pump Rotation Section. (pg.3) 4. Fix leaks. 5. Clean or replace filter. 6. Replace with 30wt. non-detergent compressor oil. 7. Clean, repair or replace valves. 8. Clean or replace.

CONDITION	CAUSE	CORRECTIVE ACTION
V-Belts Roll Off the Flywheel or Motor Pulley	1. Flywheel and motor pulley not aligned properly. 2. Belts do not match flywheel groove. 3. A nick or tear on the edge of the belt. 4. Not a matched set. (If two or more belts are used.)	1. Align using a straight edge. 2. Purchase new set of matched belts. 3. Purchase new set of matched belts. 4. Purchase new set of matched belts.
Flywheel or Motor Pulley Wobbles or Comes Loose	1. Bolt not tight enough on flywheel. 2. Set screw on motor pulley not tight enough.	1. Tighten as required. 2. Replace set screw with lock-tite coating or replace motor pulley.
Pressure Switch Unloader Does Not Function or Leaks Air When Unit is Operating.	1. Pressure Switch unloader may be dirty or faulty.	1. Clean, repair or replace Pressure Switch.
Pressure Switch Unloader Leaks Air When Unit Is Not Operating.	1. Check valve may be dirty or faulty.	1. Clean, repair or replace Check Valve.
Water in Air Receiver	1. Condensation in the air receiver.	1. Drain daily or install an automatic drain
Seized Compressor Pump. Flywheel Will Not Turn Freely.	1. Started without oil. 2. Ran low on oil. 3. Worn rod bearing inserts. 4. Piston and pin assembly seized. 5. Worn crankshaft bearings.	Pump will require an overhaul. Contact Omega Compressor Service Centre.
Oil Leaks or Appearance of Oil on the Compressor	1. Spillage of oil when filling. 2. Overfilling the crankcase. 3. Improper grade of oil. 4. Leak at oil filler plug. 5. Oil leak at gaskets, cap screws, head, cylinder or crankcase. 6. Loose valve plugs. 7. Loose side or end plates. 8. Oil seal leak. 9. Scratch or burr on the crankshaft.	1. Wipe unit clean. 2. Drain oil and fill to proper level. 3. Replace with proper 30wt. non-detergent compressor oil. 4. Tighten or replace oil filler plug and/or "O" ring. 5. Replace gaskets as required. Use pipe dope or gasket compound on all cap screw threads. 6. Tighten valve plugs. 7. Tighten plates. 8. Replace oil seal. 9. File or sand with emery cloth.

MAINTENANCE LOG CHART

Maintenance carried out must be registered here below.
Please refer to page 4 for proper Preventative Maintenance Procedures

DATE	OIL			DRAIN	NUTS AND BOLTS		AIR FILTER	
	CHECK	TOP UP	REPLACE	AIR RECEIVER	CHECK	TIGHTEN	CLEAN	REPLACE

MAINTENANCE LOG CHART

BELT TENSION			SAFETY VALVE	PRESSURE SWITCH	PUMP FINS	MOTOR	SIGNATURE
CHECK	ADJUST	REPLACE	CHECK	CHECK	CLEAN	CLEAN	

Compressed Air Accessories

- Aluminum Air Piping
- Ball Valves
- Check Valves
- Compressed Air Filters
- Compressor Oil
- Compressor Pumps
- Desiccant Air Dryers
- Electric Motors
- Electronic Auto Drains
- Filter Elements
- Filter - Regulators - Lubricators
- Flex Hose Connectors
- Gauges
- Magnetic Starters
- Oil Monitors
- Oil/Water Separators
- Pilot Valves
- Pneumatic Auto Drains
- Pressure Switches
- Refrigerated Air Dryers
- Remote Air Receivers
- Safety Valves
- Service Parts
- Throttle Controls
- Vibration Isolators
- Water Separators

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