

# Operating Manual



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## Models:

*EP07V080V1 – EP07H080V1*  
*EP07V120V1 – EP07H120V1*

*EP07V080V3 – EP07H080V3*  
*EP07V120V3 – EP07H120V3*



**DANGER!**

### ***Breathable Air Warning***

This compressor/pump is NOT equipped and should NOT be used “as is” to supply breathing quality air. For any application of air for human consumption, you must fit the air compressor/pump with suitable in-line safety and alarm equipment. This additional equipment is necessary to properly filter and purify the air to meet minimal specifications for Grade D breathing as described in Compressed Gas Association Commodity Specification G 7.1 – 1966, OSHA 29 CFR 1910. 134, and/or Canadian Standards Associations (CSA).

## **DISCLAIMER OF WARRANTIES**

In the event the compressor is used for the purpose of breathing air application and proper in-line safety and alarm equipment is not simultaneously used, existing warranties are void, and EMAX Air Force Technology disclaims any liability whatsoever for any loss, personal injury or damage.

### ***CALIFORNIA PROPOSITION 65***



**WARNING!**

**This product or its power cord may contain chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.**

- **READ INSTRUCTION MANUAL BEFORE OPERATING**
- **RISK OF FIRE OR EXPLOSION – DO NOT SPRAY COMBUSTIBLE/FLAMMABLE LIQUID IN A CONFINED AREA. SPRAY AREA MUST BE WELL VENTILATED. DO NOT SMOKE WHILE SPRAYING OR SPRAY WHERE SPARK OR FLAME IS PRESENT. ARCING PARTS – KEEP COMPRESSOR AT LEAST 20 FEET AWAY FROM SPRAYING AREA AND ALL EXPLOSIVE VAPORS.**
- **RISK OF INJURY – DO NOT DIRECT AIR STREAM AT BODY. USE EYE PROTECTION. COMPRESSOR STARTS AUTOMATICALLY. MOVING PARTS. DO NOT TOUCH. KEEP GUARDS IN PLACE. COMPRESSOR DOES NOT SUPPLY BREATHABLE AIR.**
- **RISK OF BURSTING – DO NOT ADJUST REGULATOR TO RESULT IN OUTPUT PRESSURE GREATER THAN MARKED MAXIMUM PRESSURE OF ATTACHMENT. IF A REGULATOR HAS NOT BEEN INSTALLED -**

USE ONLY ATTACHMENT RATED AT 200 PSI OR HIGHER. DO NOT WELD ON OR REPAIR TANK – REPLACE. DO NOT OPERATE WITHOUT PROPER ASME SAFETY VALVE IN PLACE.

- **RISK OF ELECTRICAL SHOCK – HAZARDOUS VOLTAGE: DISCONNECT FROM POWER SOURCE BEFORE SERVICING. COMPRESSOR MUST BE GROUNDED. DO NOT USE GROUNDING ADAPTORS. DO NOT EXPOSE TO RAIN. STORE INDOORS.**

**IF CONNECTED TO A CIRCUIT PROTECTED BY FUSES, USE TIME-DELAY FUSE MARKED “D”**

**COMPLIES WITH CCR462 (L)(2).**

**DO NOT USE BELOW GARAGE FLOOR OR GRADE LEVEL**

**DRAIN TANK EVERYDAY TO PREVENT CORROSION AND POSSIBLE INJURY DUE TO TANK DAMAGE**

## **Introduction**

In order to receive maximum performance and long life from your compressor, the following instructions should be read carefully and all points regarding installation and operation of the unit should be noted and observed. Carefully reading this manual before connecting anything to the motor or compressor is necessary for optimum trouble-free operation.

### **Inspection**

Check for possible damage from transit and test the pulley by turning it freely with your hand. **Report any damage to the delivery carrier immediately.**

### **Location**

Select a clean, dry, and well-lit location. In cold climates, the compressor should be installed in a heated building. Insulate cold water or other low temperature pipes that pass overhead to avoid possible collection and dripping of condensate onto the compressor and motor that could cause rusting and/or motor shorting. **Do not** install the compressor in a boiler room, paint spray room, or area where sandblasting occurs. If acid or dust is in the air where the compressor is operating the compressor intake should be piped to the outside. This intake pipe should be increased one pipe size for every twenty (20) feet of run and the intake filter should be installed at the end of the pipes with a hood to protect them from the elements. **Special size** filters are required for pipe away.

If the compressor has to be located where the motor will be exposed to appreciable quantities of water, oil, dirt, acid, or alkaline fumes, the motor must be of special construction to avoid rapid deterioration; i.e. TEFC

Unless the base is exactly level, shims will probably be required. Any space between base and foot should be shimmed rather than drawing the foot down thus placing strain on the unit. When unit is properly shimmed, vibration will be at a minimum.

Allow sufficient space around the compressor so that it is accessible from all sides for maintenance. Mount the unit with the pulley towards the wall at least 18 inches between pulley & wall.

## **POWER SUPPLY AND WIRING**

- **Installation should be executed by a licensed electrician**
- **All electrical connections must be tightened before starting. This includes connections at the motor junction as well as the Condor Switch or Magnetic starter. This shall include all factory connections. Repeat: Check All electrical connections before startup.**

Wiring should be installed by a licensed electrician who is familiar with requirements of the National Board of Fire Underwriters and of the local inspectors is recommended. Consult your local electrical contractor regarding electric codes and recommended wire sizes.

### **Single Phase Motors:**

Hook your hot leads to the wiring terminals opposite of the motors wires. Hook one hot lead to 1L1. Another hot lead to 3L2. Hook ground wire to our ground wire. Do not hook power to pressure switch.



### **Three Phase Motors:**

Hook one hot lead to 1L1 lug, hook another to the 3L2 lug and then hook the third to 5L3. Run ground wire to our ground lug. Start compressor and check for rotation. If rotation is reversed, shut off power and switch two of the hot leads. This will reverse the polarity and the motor will run the opposite direction.



\*\*Make sure that your power supply and internal wiring are adequate and that the available frequency and voltage correspond to the motor nameplate and starter. A 230 volt motor will not work sufficiently on a nominal 208 volt system. Even if the actual voltage is up to 208 volts, the 10-12 volt drop during start up (this is an average, but not a high figure for commercial buildings) may cause the motor to labor and blow fuses or heater elements. Do not accept the nominal figure for line voltage, but rather measure it with a voltmeter during a period of maximum power demand.

### **AIR INTAKE**

The compressors are equipped with an intake filter that requires no piping. If it is necessary to pipe the intake to the outdoors, see Paragraph 3, "Location".

### **PIPE CONNECTION**

A flexible connector should be used between the compressor tank and the building piping or connection to after cooler or other similar equipment in order to minimize noise, vibration, vibration damage, and wear and tear.

### **CAUTION**

- Never install a shut-off valve (e.g. glove or gate valve) between the compressor discharge opening and the receiver unless a safety valve is installed in the line between this valve and the compressor.
- Never operate the pump at a pressure or a speed in excess of those recommended by the factory.

### **TANK**

Tank feet should be placed on vibration isolator pads (1/4" thick or less) available through your dealer. Anchor bolts should be gently snug, but not tight, to allow for vibration. Remember, the bolt is only a guide to hold the compressor in place. Do not over tighten the legs of the tank against the pads...it will damage your tank. Caution: Do not store tank on dirt or on an uneven surface. Over time, the tank will tilt causing pump failure from no lubrication.

### **STARTING**

- Check oil level before starting. The oil should be in the center of the sight glass.
- Turn the compressor over a few revolutions by hand to make sure that everything is free.
- Check belt tension. (should be 1/2" of play)
- Remove rags, tools, and any other objects from the vicinity of the compressor.
- Never put hands on the belts of an idle unit unless you are sure the main motor switch is off.
- Note the direction of the arrow stated on the belt guard and be sure the rotation is the same direction when running. Correct direction is counter-clockwise when standing facing the flywheel. Air should be drawn through the intercooler onto the cylinders for maximum cooling.

## **OPERATION AND CARE**

### **SERVICE**

All units are shipped with break-in oil. Oil should be changed within the first 50 hours or 30 days of use (whichever comes first). Use a Mobil RARUS 427 which is available through your dealer or any non-detergent 30 weight air compressor oil. **WARNING!!** DO NOT use automotive type oil. REPEAT: **DO NOT USE AUTOMOTIVE TYPE OIL.**

- Oil should be changed every 90 days. Oil level should be halfway level in the sight glass.
- If oil is milky, and oil change will be required.
- Inspect air filters weekly and clean or change as needed.



## CONTINUOUS RUN

During heavy use or sandblasting, we recommend using the continuous run feature. If you follow the ¼” copper tubing that runs across the cylinder heads and down to the tank you will find a ¼” ball valve. If the ball valve is closed the compressor will stop and start according to the pressure switch. If the ball valve is open then you are in the continuous run feature. This helps cool the pump and keeps the motor from numerous starts and stops (saving electricity). **See Fig. 1**

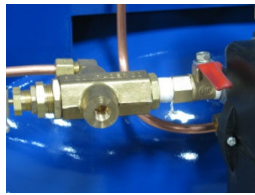


Fig. 1



Fig. 2

## BELT ADJUSTMENT

**Always pull the motor disconnect switch before working on the belts so the motor cannot start up unexpectedly.** When belt tension is adjusted properly, the belts can be depressed at a point midway between the motor pulley and the flywheel approximately one half inch. Loose belts will slip on the motor pulley and cause excessive heating and wear. A belt that is too tight will overload the bearings. Adjustments can be made by sliding the motor along its base. When installing new belts, it is necessary that the motor bolts be loosened and the motor moved toward the compressor. The new belts can be installed without damage or strain. Overtime belts stretch and it is recommended that all belts be changed at the same time. To adjust the belts loosen the four motor frame nuts and adjust the single bolt head on the belt tensioner. **See Fig. 2**

## ELECTRONIC AUTO DRAIN (If Equipped)

Plugs into a 110 volt outlet and is setup on a dual timer. The knob on the right is in minutes and is the timer for how frequent the drain will open. The knob on the left is in seconds and this allows you set the time the drain will stay open every time it goes off. **(Fig. 1)**



Fig. 1



Fig. 2

## DAILY CARE

- Check oil level in crankcase and, if necessary, add sufficient oil to bring to (but not above) halfway level in the sight glass (without the motor running).
- Drain moisture from air receiver. **(Fig. 2)**
- Stop, look, and listen for unusual noises, failure to compress, overheating, vibration, or belt slippage. Correct before damage occurs.

### **MONTHLY CARE**

- Check and tighten all bolts as required.
- Check air connections and joints for air leaks.
- Check all unloading lines for air leaks. Air leaks in the unloading lines will cause the unloaders to chatter and could cause short cycling.
- Check “V” belts for any possible misalignment and tightness. See “Belt Adjustment”.

### **Maintenance-Trouble Shooting-Repairs**

#### **SLOW PUMPING OR INSUFFICIENT PRESSURE CAN BE CAUSED BY:**

- Clogged inlet filter- (disassemble and clean thoroughly)
- Leaks in air lines, valves, fittings, etc. (Locate by using soapy water if necessary; replace or tighten threaded parts).
- Compressor too small for equipment application. Check air requirements vs. compressor capacity-consult dealer).
- Leaking head valves (remove hold-down covers than remove valves for inspection. Repair or replace faulty valves).
- If the power network in the building is 208 volts, order a 208 volt motor. If the starting voltage is much less the 90% of the motor nameplate voltage, the motor cannot be expected to start and the interior building wiring must be corrected.

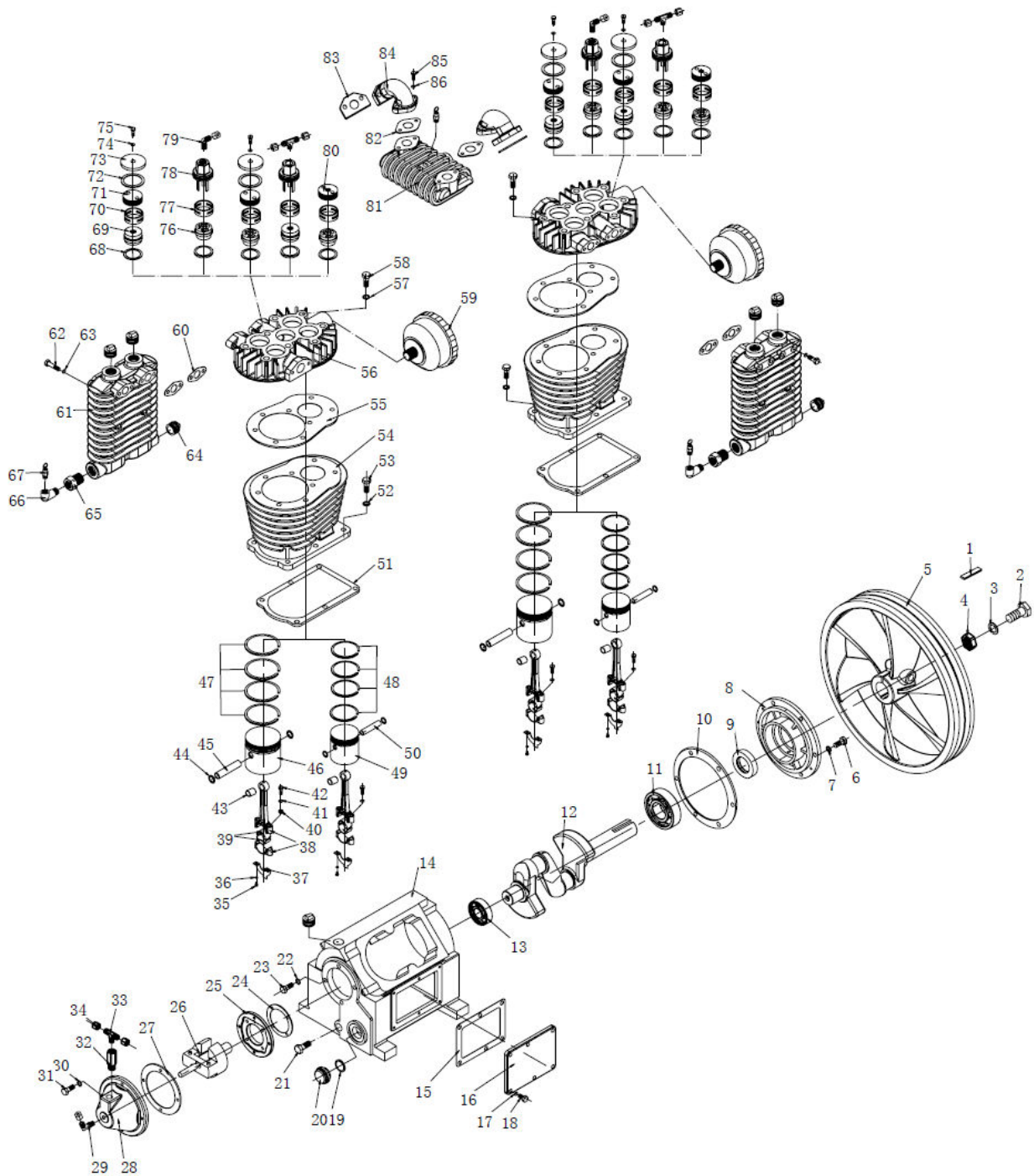
### **OVERHEATING**

Compression of air generates heat, much of which is dissipated as air passes over the intercooler and/or after cooler. Overheating can be caused by:

- Pump running backwards (reverse direction). Proper rotation is counter-clockwise when facing the flywheel.
- One or more head valves are failing to seat properly.
- Blown cylinder head gasket.
- Restriction in head, intercooler, or check valve.
- Lack of oil-(check oil level).
- Dirt in intercooler fins or cylinder fins-(blow out with air).
- Poor ventilation and ambient temperature too high where the compressor is stored.







| Ref. | Part num   | Description       | Qty | Ref. | part num   | Description                | Qty |
|------|------------|-------------------|-----|------|------------|----------------------------|-----|
| 1    | KFZ100C001 | Key-Flywheel      | 1   | 44   | CIZ100C044 | Circlip                    | 8   |
| 2    | BOZ100C002 | Bolt              | 1   | 45   | PPZ100C045 | Piston Pin                 | 2   |
| 3    | LWZ100C003 | Lock Washer       | 1   | 46   | PIZ100C046 | Piston                     | 2   |
| 4    | NUZ100C004 | Nut               | 1   | 47   | PRZ100C047 | Piston Ring Assembly       | 2   |
| 5    | PUZ100C005 | Pulley            | 1   | 48   | PRZ100C048 | Piston Ring Assembly       | 2   |
| 6    | BOZ100C006 | Bolt              | 6   | 49   | PIZ100C049 | Piston                     | 2   |
| 7    | WAZ100C007 | Washer            | 6   | 50   | PPZ100C050 | Piston Pin                 | 2   |
| 8    | FCZ100C008 | Front Cover       | 1   | 51   | GAZ100C051 | Gasket                     | 2   |
| 9    | OSZ100C009 | Oil Seal          | 1   | 52   | WAZ100C052 | Washer                     | 12  |
| 10   | GAZ100C010 | Gasket            | 1   | 53   | BOZ100C053 | Bolt                       | 12  |
| 11   | BEZ100C011 | Bearing           | 1   | 54   | CYZ100C054 | Cylinder                   | 2   |
| 12   | CSZ100C012 | Crank Shaft       | 1   | 55   | GAZ100C055 | Gasket                     | 2   |
| 13   | BEZ100C013 | Bearing           | 1   | 56   | CHZ100C056 | Cylinder Head              | 2   |
| 14   | CKZ100C014 | Crank case        | 1   | 57   | WAZ100C057 | Washer                     | 16  |
| 15   | WAZ100C015 | Washer            | 2   | 58   | BOZ100C058 | Bolt                       | 16  |
| 16   | SCZ100C016 | Side Cover        | 2   | 59   | AFZ100C059 | Air Filter                 | 2   |
| 17   | WAZ100C017 | Washer            | 12  | 60   | GAZ100C060 | Gasket                     | 4   |
| 18   | BOZ100C018 | Bolt              | 12  | 61   | COZ100C061 | Cooler                     | 2   |
| 19   | WAZ100C019 | Washer            | 1   | 62   | BOZ100C062 | Bolt                       | 8   |
| 20   | OGZ100C020 | Oil Sight Glass   | 1   | 63   | CIZ100C063 | Circlip                    | 1   |
| 21   | PDZ100C021 | Plug-Oil Drain    | 1   | 64   | BPZ100C064 | Bolt Plug                  | 7   |
| 22   | WAZ100C022 | Washer            | 4   | 65   | DCZ100C065 | Double Hose Connecting     | 2   |
| 23   | BOZ100C023 | Bolt              | 4   | 66   | COZ100C066 | Connecting                 | 2   |
| 24   | WAZ100C024 | Washer            | 1   | 67   | SVZ100C067 | Safety Valve               | 3   |
| 25   | CPZ100C025 | Connecting Plate  | 1   | 68   | CWZ100C068 | Copper Washer              | 10  |
| 26   | WEZ100C026 | Weight            | 1   | 69   | EAZ100C069 | Exhaust Valve Assembly     | 4   |
| 27   | GAZ100C027 | Gasket            | 1   | 70   | SVZ100C070 | Spacer- Exhaust Valve      | 4   |
| 28   | RCZ100C028 | Rear Cover        | 1   | 71   | BPZ100C071 | Two Holes Stop Bolt Plug   | 4   |
| 29   | AVZ100C029 | Air Valve         | 1   | 72   | GAZ100C072 | Gasket                     | 4   |
| 30   | WAZ100C030 | Washer            | 4   | 73   | VHZ100C073 | Valve Head                 | 4   |
| 31   | BOZ100C031 | Bolt              | 4   | 74   | WAZ100C074 | Washer                     | 4   |
| 32   | BRZ100C032 | Breather          | 1   | 75   | BOZ100C075 | Bolt                       | 4   |
| 33   | THZ100C033 | T Hose Connecting | 3   | 76   | IAZ100C076 | Inlet Valve Assembly       | 4   |
| 34   | LNZ100C034 | Lock Nut          | 9   | 77   | SVZ100C077 | Spacer- Inlet Valve        | 4   |
| 35   | BOZ100C035 | Bolt              | 3   | 78   | UDZ100C078 | Unloading Device           | 4   |
| 36   | WAZ100C036 | Washer            | 3   | 79   | HCZ100C079 | L Hose Connecting          | 2   |
| 37   | OFZ100C037 | Oil Film          | 4   | 80   | BPZ100C080 | Three Holes Stop Bolt Plug | 2   |
| 38   | CRZ100C038 | Connecting Rod    | 4   | 81   | COZ100C081 | Cooler                     | 1   |
| 39   | IRZ100C039 | Insert Rod        | 8   | 82   | GAZ100C082 | Gasket                     | 2   |
| 40   | NUZ100C040 | Nut               | 8   | 83   | SWZ100C083 | Seal Washer                | 2   |
| 41   | WAZ100C041 | Washer            | 8   | 84   | ELZ100C084 | Elbow                      | 2   |
| 42   | BOZ100C042 | Bolt              | 8   | 85   | BOZ100C085 | Bolt                       | 8   |
| 43   | CCZ100C043 | Copper Cover      | 4   | 86   | WAZ100C086 | Washer                     | 8   |



## EMAX, INC.

### Piston Equipment Warranty

1000 Cass Drive  
Clayton, Ohio 45315  
866.294.4153

#### LIMITED WARRANTY

EMAX, Inc. warrants to the original purchaser that all products covered under this warranty are free from defects in material and workmanship. Products covered under this warranty include air compressors which have the following warranty periods:

**2 YEAR** - Limited warranty on all air compressor components .

**5 YEARS** - Limited warranty on oil-lubricated air compressor pumps.

EMAX, Inc. will repair or replace, at **EMAX, Inc.** option, products or components which have failed within the warranty period. Service will be scheduled according to the normal work flow and business hours at the service center location and the availability of replacement parts. All decisions of **EMAX, Inc.** With regard to this limited warranty shall be final.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

#### RESPONSIBILITY OF ORIGINAL PURCHASER (initial User):

1. To process a warranty claim on this product, **DO NOT RETURN PRODUCT TO THE STORE.** The product must be evaluated by **EMAX, Inc.'s Authorized Warranty Service provider**, For warranty service issues and/or questions, **please call 866-294-4153**
2. Retain original sales receipt as proof of purchase for warranty work. Use reasonable care in the operation and maintenance of the product as described in the Owners Manual(s).
3. Deliver or ship the product to the nearest **EMAX, Inc.** Authorized dealer. Freight costs, if any, must be paid by the purchaser. If the purchaser does not receive satisfactory results from the **EMAX, Inc.** authorized warranty service provider, the purchaser should contact **EMAX, Inc.**
4. Must use EMAX Oil or Oil authorized in writing by **EMAX, Inc.**
5. Oil must be changed after every 2,000 hours. If for any reason the compressor is not being used or not reaching 2,000 hours of use the Oil must be changed once annually.
6. Oil must be checked quarterly free of charge by EMAX. (Please refer to Oil guidelines in manual)

**THIS WARRANTY DOES NOT COVER: (Limitations)** Merchandise that has become damaged or inoperative because of ordinary wear, misuse, cold, heat, rain, excessive humidity, freeze damage, use of improper chemicals, negligence, accident, failure to operate the product in accordance with the instructions provided in the Owners Manual(s) supplied with the product, improper maintenance, the use of accessories or attachments not recommended by **EMAX, Inc.**, or unauthorized repair or alterations. An air compressor that pumps air more than 50% during a one hour period is considered misuse because the air compressor is undersized for the required air demand.

Repair and transportation costs of merchandise determined not to be defective. Costs associated with assembly, required oil, adjustments or other installation and start-up costs. Expendable parts or accessories supplied with the product which are expected to become inoperative or unusable after a reasonable period of use.

Merchandise sold by **EMAX, Inc.** which has been manufactured by and identified as the product of another company, such as gasoline engines. The product manufacturer's warranty, if any, will apply.

**ANY INCIDENTAL, INDIRECT OR CONSEQUENTIAL LOSS, DAMAGE, OR EXPENSE THAT MAY RESULT FROM ANY DEFECT, FAILURE OR MALFUNCTION OF THE PRODUCT IS NOT COVERED BY THIS WARRANTY.** Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

**IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM THE DATE OF ORIGINAL PURCHASE.** Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.