ETQ

OWNER'S MANUAL

Air-cooled diesel air compressor set

DA011

PREFACE

Thank you for purchasing products from EASTERN TOOLS & EQUIPMENT, INC. We appreciate your business. The following manual is only a guide to assist you and is not a complete or comprehensive manual of all aspects of maintaining and repairing your diesel air compressor. The equipment you have purchased is a complex piece of machinery. We recommend that that you consult with a dealer if you have doubts or concerns as to your experience or ability to properly maintain or repair your equipment. You will save time and the inconvenience of having to go back to the store if you choose to write or call us concerning missing parts, service questions, operating advice, and/or assembly questions. Our air compressors have some of the following features:

- Air cooled
- Four-stroke diesel internal combustion engine
- Recoil starter (optional electric start)
- Large fuel tank

The ETQ air-cooled diesel air compressors are widely used when electrical power is scarce. Air compressors provide a portable mobile solution in supplying a pneumatic air supply for field operations during project construction.

This manual will explain how to operate and service your air compressor set.

If you have any questions or suggestions about this manual, please contact your local dealer or us directly. ***Consumers should notice that this manual might differ slightly from the actual product as more improvements are made to our products. Some of the pictures in this manual may differ slightly from the actual product as well. Eastern Tools and Equipment, Inc. reserves the right to make changes at any time without notice and without incurring any obligation.***

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TECHNICAL SPECIFICATIONS AND DATA

Technical specifications in SI units

Item / Model			DA011 / DA011E
Compressor	Speed (rpm)		1100
	Max. pressure (Mpa)		0.8
	Air flow rate (m^3/min)		0.34
	Air tank capacity (L)		36
Diesel Engine	Type of power		ETQ178F
	Type		Single cylinder, vertical, 4-stroke, air-cooled, direct-injection
	Output	Continuous (kW)	4.40
		Maximum (kW)	4.90
	Bore x Stroke (mm)		78 x 62
	Displacement (cc)		296
	Cooling system		Forced air cooling by flywheel fan
	Lubricating system		Pressure splash, duplex type lubrication
	Lube-oil capacity (L)		1.1
	Starting system		Recoil manual start and optional electric start
	Fuel tank capacity (L)		15
	Dry weight (kg)		104
	Dimensions (LxWxH) (mm)		1170 x 460 x 600

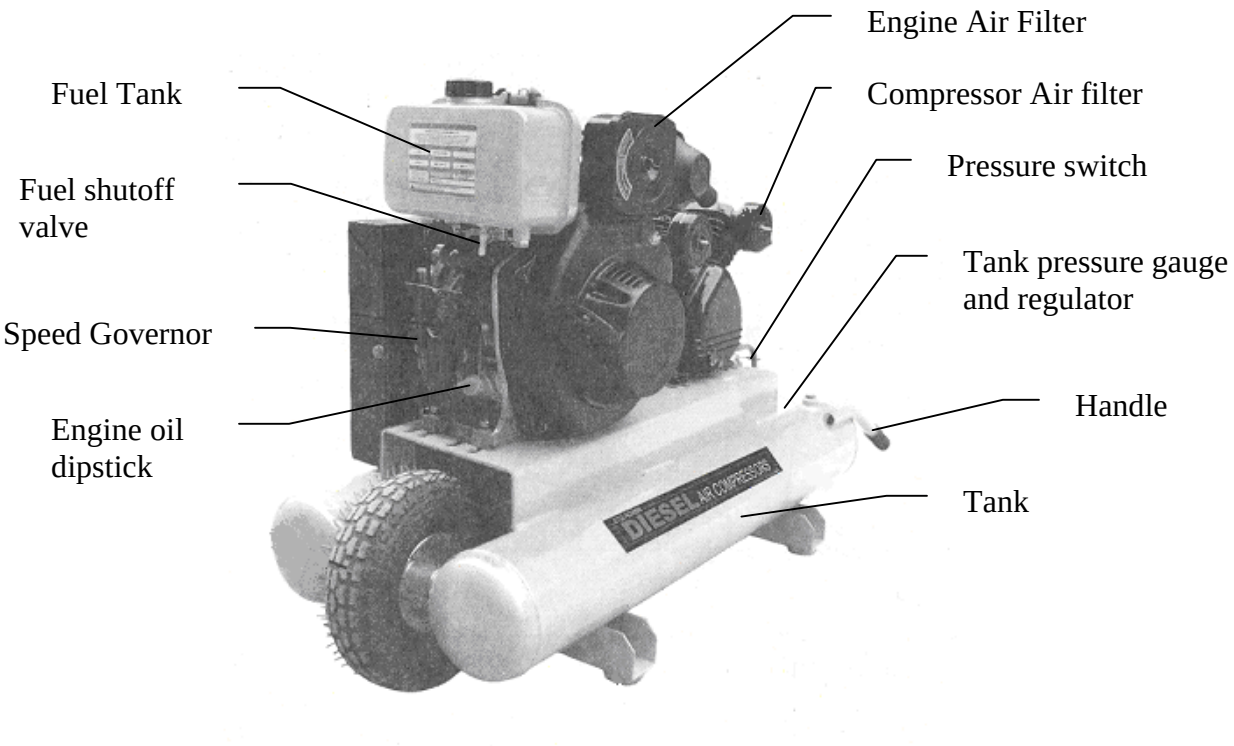
Technical specification in English units

Item / Model			DA011 / DA011E
Compressor	Speed (rpm)		1100
	Max. pressure (Psi)		116
	Air flow rate (cfm)		11.9
	Air tank capacity (US gal)		9.51
Diesel Engine	Type of power		ETQ178F
	Type		Single cylinder, vertical, 4-stroke, air-cooled, direct-injection
	Output	Continuous (HP)	5.9
		Maximum (HP)	6.6
	Bore x Stroke (in.)		3.01 x 2.44
	Displacement (cu. in.)		18.1
	Cooling system		Forced air cooling by flywheel fan
	Lubricating system		Pressure splash, duplex type lubrication
	Lube-oil capacity (oz)		37.17
	Starting system		Recoil manual start and optional electric start
	Fuel tank capacity (US gal)		3.96
	Dry weight (lb)		230
	Dimensions (LxWxH) (in)		50x18.1x30.5

EQUIPMENT DESCRIPTION & KNOWING YOUR AIR COMPRESSOR

Please read this manual and follow the procedures covered in this manual. Become familiar with the air compressors functions, applications, and limitations.

Below is a diagram of the locations of the various controls and functions of the air compressor.



WARNING: DO NOT exceed the air compressors tank capacity. The tank has a factory preset pressure release valve. Changing the settings on this valve will void your warranty and Eastern Tools and Equipment assumes no responsibility for accidents and injuries resulting from user modifications. Our products are continuously being changed and improved. Every effort has been made to ensure that information in manual is accurate and up to date. However, we reserve the right to change, alter or otherwise improve the product and this manual at any time without prior notice.

SAFETY PRECAUTIONS

In order to ensure safety for the consumer, please carefully follow instructions on being careful with the air compressor.

Never operate the air compressor without the belt guard. Failing to do so can lead to serious injuries as objects may get caught in the belt.

Keep visitors away and NEVER allow children in the work area.

Operate the compressor ONLY outdoors. Never run the compressor indoors as the engine gives off poisonous carbon monoxide, an odorless, and colorless gas. Inhaling carbon monoxide will cause nausea, fainting or death. Also, keep the air compressor at least 3 feet away from flammable matter for adequate ventilation.

Wear safety glasses and wear hearing protection when operating the unit.

Always inspect the unit for damage before operating the unit. Inspect the engine for oil leaks or possible deterioration.

Check all fasteners for proper tightness at frequent intervals.

Do not wear loose clothing or jewelry as it can get caught in the moving mechanical parts of the air compressor. Also keep all fingers and other body parts away from the compressor as it may get caught in the moving mechanical parts.

PREVENTION FROM ACCIDENTAL BURNS

Never touch the muffler and its cover when the engine is running. Never touch the muffler and cover after the engine has been used, as the muffler remains hot for a good period of time.

The discharge tube from the air compressor to the tank gets hot during operation, do not touch the tube during operation.

BATTERY (optional: for electric start units only)

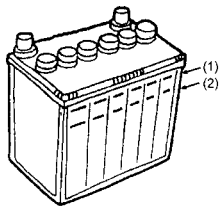
Batteries contain electrolyte fluid or battery acid. Batteries emit hydrogen gases as battery is being charged. The slightest spark will ignite hydrogen and cause an explosion.

Note: Our units come shipped with a dry battery for safety shipping purposes. Dry batteries need to be filled with electrolytic solution (battery acid) and fully charged (trickle charged) before use. During use, the battery level should be checked once a month to make sure they are between the high and low marks. Battery acid can be purchased from a local auto parts store.

4.BATTERY (only for Model)

Check to make sure that the electrolyte level in each cell to be sure they are all between upper and lower limits.

(1) Upper limit
(2) Lower limit



ENGINE SAFETY PRECAUTIONS

Do not touch hot surfaces. Allow equipment to fully cool down before touching.

After the air compressor has been run, the engine produces heat. The temperatures of the muffler and nearby areas can reach or exceed 160^0 F. Severe burns will occur on contact with skin.

Do not modify the air compressor in any way. The air compressor supplies the rated pressure and rated airflow at its governed speed.

AIR TANK SAFETY

Do not attempt to adjust the safety valve. Also, never attempt to repair or modify a tank. The fabrication involved in modifications of the tank will weaken the tank. Always replace worn, cracked, or damaged tanks.

Operate the air compressor on level surfaces only. Inclined surfaces reduce the effective lubrication of the engine.

Do not expose the air compressor to excessive moisture, dust, dirt, or corrosive vapors.

PREPARATION BEFORE OPERATION

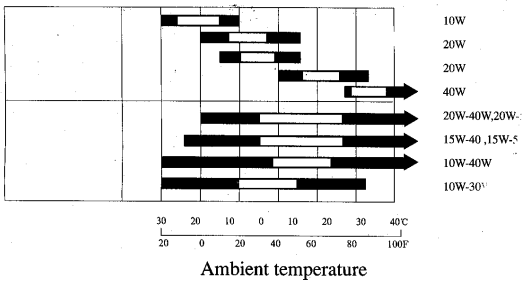
Before starting the air compressor, verify the following conditions.

AIR COMPRESSOR OIL

- Fill the air compressor heat with SAE10W-30 viscosity oil. Running the air compressor without oil will cause severe damage to the air compressor head.

ENGINE OIL

- Fill the engine with SAE 15W-40 engine oil for general use or follow the table below.



1、SINGLE VISCOSITY 2、MULTI VISCOSITY

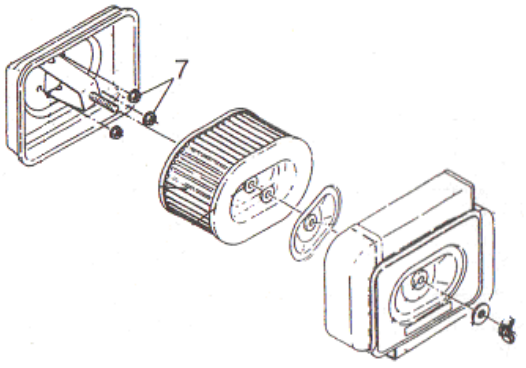
- Make sure the air compressor is on a level surface and make sure the oil dipstick is on tight.

FUEL

- Add diesel fuel number 2 and never fill the fuel tank indoors. Also, be sure to install the fuel tank cap on tight after filling.
- DO NOT overfill the fuel tank. Always allow room for fuel expansion.
- Never fill the fuel tank when the engine is running or hot. Allow the unit to cool for two minutes before refueling. DO NOT light a cigarette or smoke when filling the fuel tank.

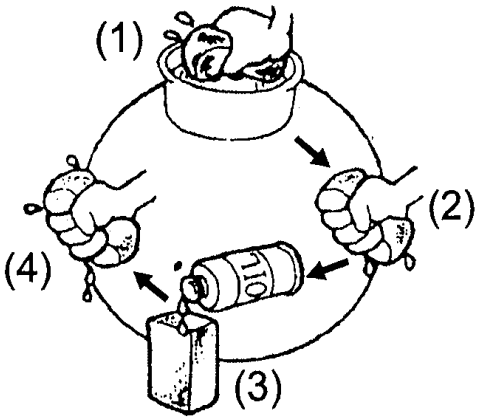
AIR CLEANER

- Remove the wing nut holding down the air cleaner cover.
- Remove the air cleaner cover and air filter.
- Check the air cleaner element to be sure they are clean and in good condition.



- If the air filter is dirty, remove and clean the element.
- Wash in solvent
- Squeeze
- Soak oil

- Squeeze dry

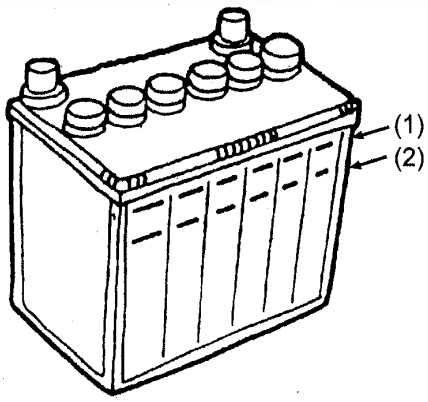


- Reinstall the air cleaner element and secure the cover by setting the cover spring.

BATTERY (only for electric start models)

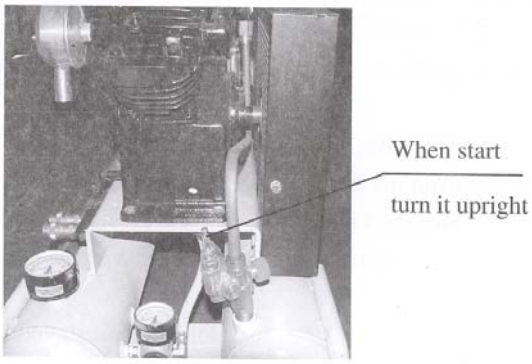
Check to make sure that the battery acid level in each cell is between the upper and lower limits.

(1) Upper limit
(2) Lower limit



PRESSURE CONTROL VALVE

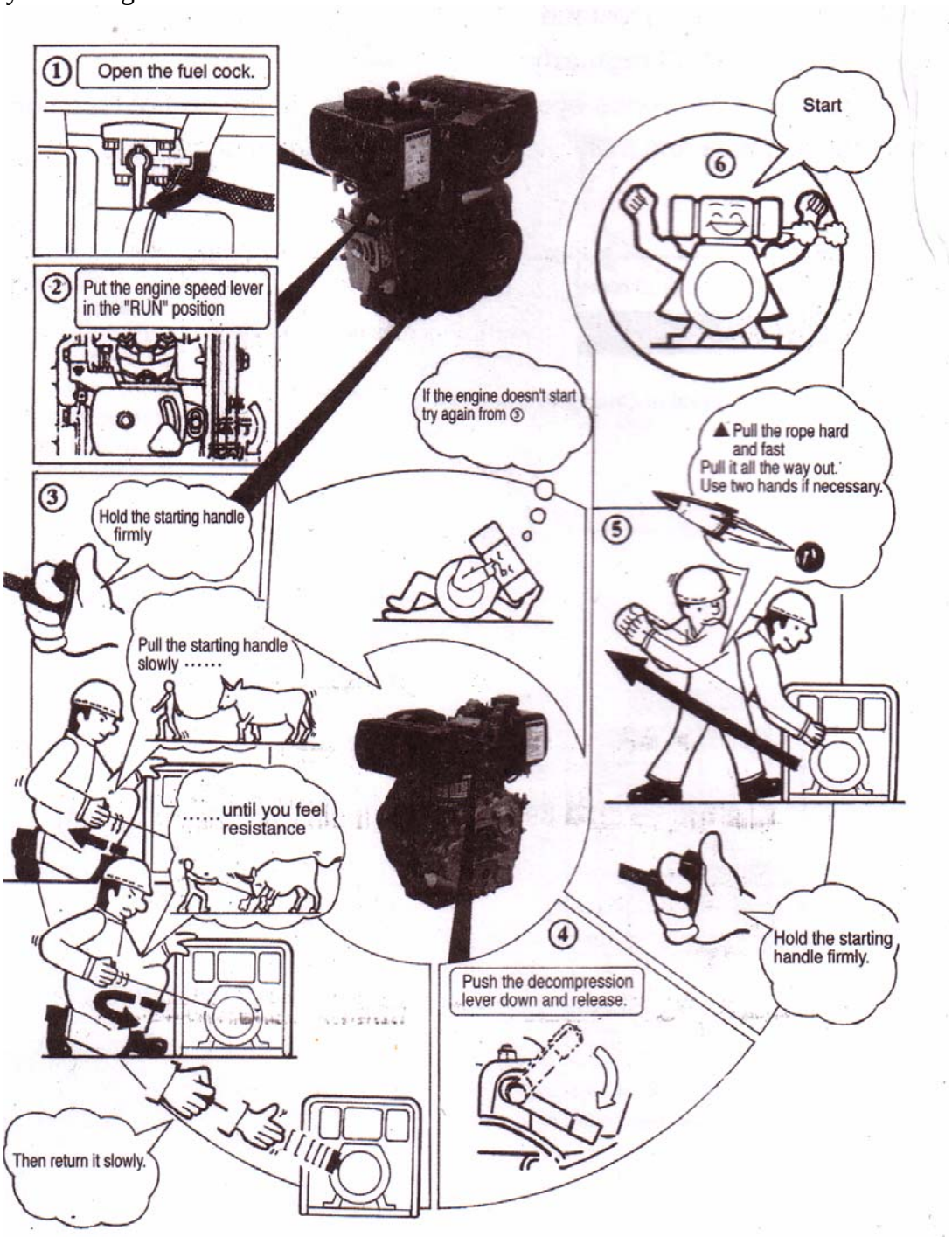
- Put the control valve is in the up position before starting the air compressor.

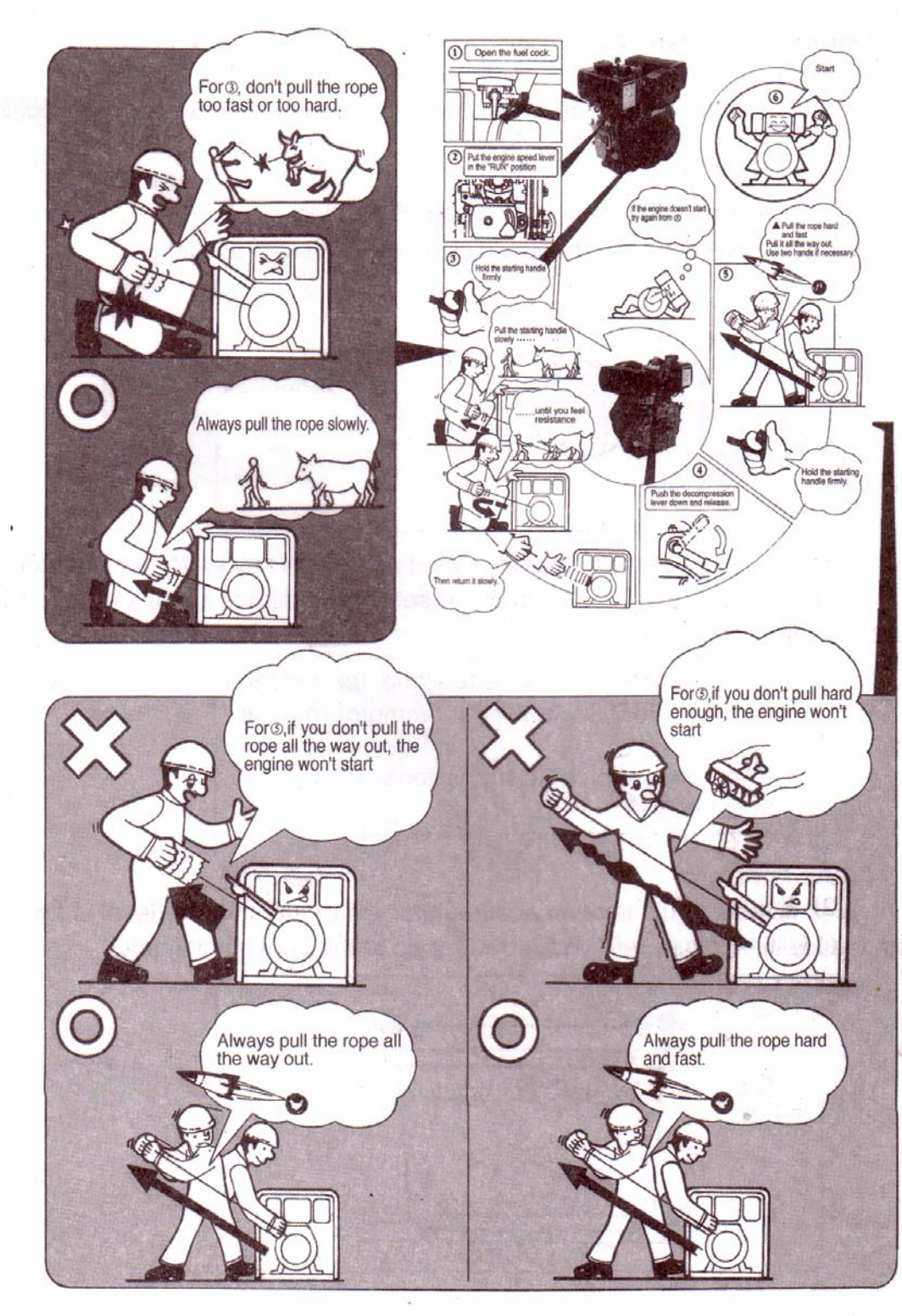


STARTING THE AIR COMPRESSOR

RECOIL STARTING

Note: When the engine is running, do not pull the recoil handle, otherwise the engine may be damaged.



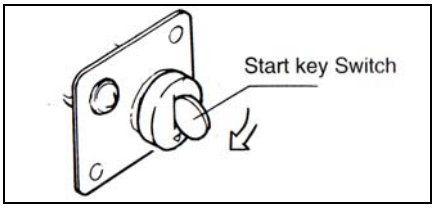

For③, don't pull the rope too fast or too hard.
Always pull the rope slowly.
① Open the fuel cock.
② Put the engine speed lever in the "RUN" position
③ Hold the starting handle firmly
Pull the starting handle slowly .....
.....until you feel resistance
Then return it slowly
④ Push the decompression lever down and release.
⑤ ▲Pull the rope hard and fast
Pull it all the way out.
Use two hands if necessary
⑥ Start
If the engine doesn't start try again from ②
Hold the starting handle firmly.
For③,if you don't pull the rope all the way out, the engine won't start
Always pull the rope all the way out.
For⑤,if you don't pull hard enough, the engine won't start
Always pull the rope hard and fast.

DIESEL ENGINE WITH ELECTRIC STARTER SYSTEM

Starting

The preparation of the diesel engine for the electric starting system is the same as the manual recoil type.

- Open the fuel valve.
- Turn the start switch clockwise to the "Start" position.



- If the engine is started, immediately remove your hand away from the key switch.
- If the engine does not start after 10 seconds, wait awhile (about 15 seconds) before trying to start the engine again.

> If you run the starter motor to long, the voltage of the battery will drop and the motor may be damaged. Keep the key switch in the "ON" position when the engine is running.

Battery

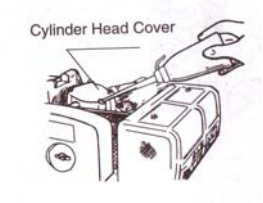
- Always check the liquid level of the battery every month, if the level is lower than the low limit mark, refill the battery with distilled water till you reach the upper limit mark.

> If the liquid level in the battery is to low, the electric starter will not function to its best potential. Always keep the level of the liquid in the battery between the upper and lower limits. If there is too much liquid, the liquid will splash onto other nearby parts thereby ruining the battery.

COLD STARTING

If the engine is difficult to start in winter, take the rubber seal plug off and put 2cc of machine oil into the hole.

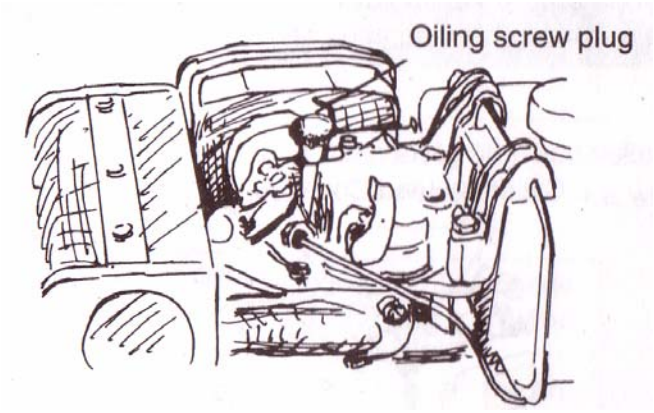
Notice: Engines supplied to the Torrid Zone will not contain the rubber plug. A solid plug is provided instead.



Warning:

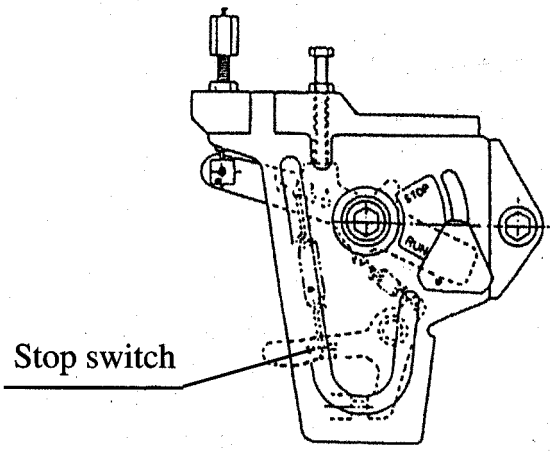
Never use flammable liquids as fuel, such as gasoline etc. Also, never take away the air cleaner for easy starting of the engine, doing so may cause explosions from the intake gases.

Never remove the oil plug unless you're planning on filling the oil. If the plug is not in place, rain, dust, and other impurities may be sucked into the engine causing serious damage to the engine parts.



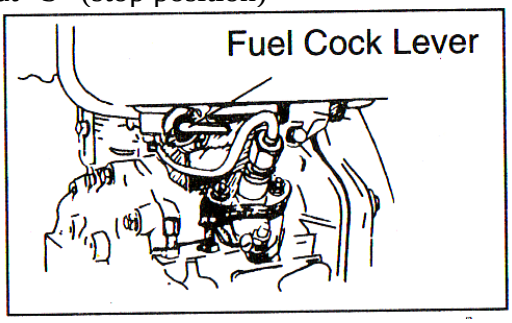
STOPPING THE ENGINE

- First, bring down the speed of the engine by using the speed governor. Let it run for 3 minutes at no load before stopping it.
- Then stop the engine.



Sudden stops to the engine will cause abnormal temperature increases in the block of the engine. Decrease the load gradually when stopping the engine. Also, never stop the engine with the decompression lever.

- Set the fuel cock at “S” (stop position)



- If the engine comes with an electric starter, turn the starting switch to the “Off” position.
- Pull the recoil handle slowly until pressure is felt by your hand, this means the piston is on the compression stroke; where the intake and exhaust valves are closed and then let the handle recoil back into the engine. This natural position will prevent rust from occurring when the engine is being stored for long periods of time.

Note: Only perform step 5 when the engine is off. Doing so otherwise will damage the engine.

MAINTENANCE

AIR COMPRESSOR

Check the oil level of both the engine and air compressor head daily before operating the air compressor.

Below is a routine maintenance schedule.

Item \ Time	Daily	After 20 hours or 1 month	100 Hours or Every 3 month	500 Hours Every 6 month	1000 Hours or Every year
Check and tighten the nut and screw	○				
Check and fill machine oil	○				
Change machine oil		○ (First time)	○ (Second time and later)		
Clean and change oil filter				○	● (Change)
Check oil-leakage	○				
Change the core of air filter		Cycle of check and main-tenance will be shortened at dusty place.		○	
Clean fuel tank	Every month				
Clean or change fuel filter				○ (Clean)	○ (Change)
Check nozzle				●	
Check injection pump				●	
Check pipeline of fuel				○ (Change if necessary)	
Adjust valve clearance of inlet and exhaust		● (First time)		●	
Grind valve holder of inlet and exhaust					●
Change piston ring					●
Check accumulator liquid	each month				
Clean the core of air filter		○ (Clean) every month or 50 hours			

DRIVEBELT

Belts will stretch in normal use. A properly adjusted belt will deflect ½ inch with a 5 pound force. To adjust the belt tension, follow the procedures below.

- Remove the belt guard.
- Loosen the four fasteners holding the engine to the base-plate.
- Shift the engine in the proper direction so that the desired tension is achieved.
- Align the belt and pulleys before tightening down the engine.

CLEANING THE AIR COMPRESSOR

Air compressor maintenance consists of keeping the unit clean and dry. Be sure to store the unit in a clean and dry environment, where it will not be exposed to excessive dust, dirt, moisture or any corrosive vapors. Cooling slots should always be clean and free from clogs.

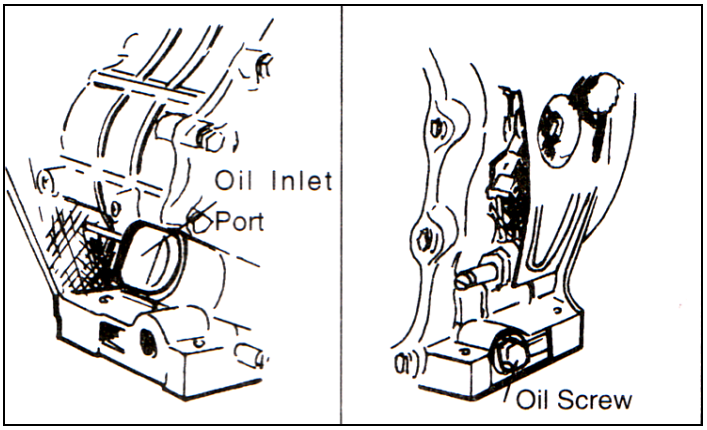
Note: Do not use a garden hose to clean the air compressor. Water can enter the fuel and intake system and cause problems.

- To clean the air compressor, use a damp cloth to wipe the exterior surfaces.
- Use a soft bristle brush to loosen caked on dirt of oil.
- Use a vacuum cleaner to pick up loose dirt and debris.
- Compressed air (not to exceed 25 psi) may be used to blow away dirt.

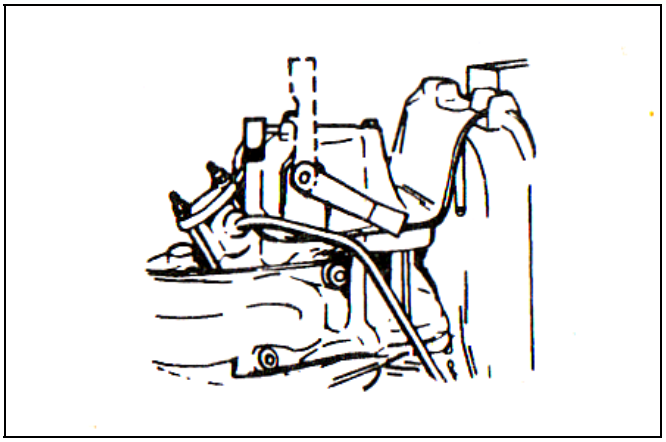
STORAGE

Please follow the instructions below if you plan on storing the air compressor for long periods of time.

- Run the engine for three minutes to burn out the excess fuel in the chamber.
- Quickly drain away the engine oil lubricant before the engine becomes cool and refill it with new oil. The figure below shows where the oil plugs are located.



- Take the rubber plug off the cover of the rocker shaft and put about 2cc of lubricant into it and put the plug back in place. The figure below shows where to access the plug.



- **For recoil starting engines**, push the decompression lever down and pull the recoil starter two or three times. This pushes all the excess intake mixture out of the combustion chamber.
- **For engines that come with an electric starter**, hold down the decompression lever and turn the start key switch to the start position. Let the engine rotate for about two to three seconds. Once again, this pushes all the excess intake mixture out of the combustion chamber.
- Now pull the decompression lever up and pull on the recoil starter slowly until you feel resistance. The resistance point occurs on the compression stroke where the intake and exhaust valves are closed. It is also the point that will prevent moisture from entering the chamber to cause rust.
- Finally, clean excess oils from the engine and put the engine in a nice dry place.

TROUBLESHOOTING

Symptom	Probable cause	Corrective Action
Low discharge pressure.	1. Air demand exceeds pump capacity. 2. Leaking air 3. Restricted air intake 4. Blown gaskets 5. Leaking or damaged valves.	1. Decrease air demand or use a larger capacity air compressor 2. Listen for high pitched escaping air. Apply soap solution to all fittings and connections. Bubbles will appear at points of leakage. Tighten or replace leaking fittings or connections. 3. Clean air filter element 4. Replace faulty gaskets. 5. Remove head and inspect for valve breakage, misaligned valves, damaged valve seats, etc. Replace defective parts and reassemble.
Pump overheating and damaging air filter.	1. Insulating gasket between filter and head is missing. 2. Broken valves blown gasket.	1. Install gasket. 2. Replace valves or install new gasket.

Excessive noise or abnormal noise	1. Loose motor or loose pulley. 2. Low oil in crankcase 3. Worn connecting rods 4. Worn piston pin 5. Piston hitting valve plate. 6. Noisy check valve.	1. Tighten engine mount bolts and pulley setscrews. 2. Refill oil to the proper level. Also, if always low, check for possible damage to bearings or oil leaks 3. Replace connecting rod. Maintain oil level and change oil more frequently. 4. Remove old piston pin, measure and verify specifications are within limits. If not, replace piston pin and replace oil more frequently. 5. Remove the compressor head and valve plate for carbon deposits or other foreign objects. Replace the head and valve plate and use a new gasket. 6. Replace.
Large quantities of oil in air supply	1. Worn piston rings. 2. Air intake clogged 3. Oil level in compressor head to high. 4. Wrong oil viscosity	1. Replace with new rings. 2. Clean air filter 3. Drain some of the oil. 4. Use 10W-30
Water in discharge air.	1. Water increases with humid weather.	1. Drain tank daily. 2. Add a filter to reduce the amount of water in the air line.
Tank does not hold pressure when compressors off and shut off valve is closed.	1. Worn check valve 2. Check all connections and fittings for leaks. 3. Check tank for cracks or pin holes	1. Replace check valve 2. Tighten 3. Replace tank. Never repair a damaged tank.
Excessive vibration	1. Loose fasteners 2. Belt needs replacement. 3. Belt alignment	1. Tighten 2. Replace with correct size. 3. Align engine and air compressor pulleys.
Pressure switch continuously blows air out the unloader valve.	1. Malfunctioning check valve	1. Replace the check valve if the unloader valve bleeds off constantly.

NOTE: *Please refer to the engine owner's manual for troubleshooting with the engine.*

PARTS LISTINGS

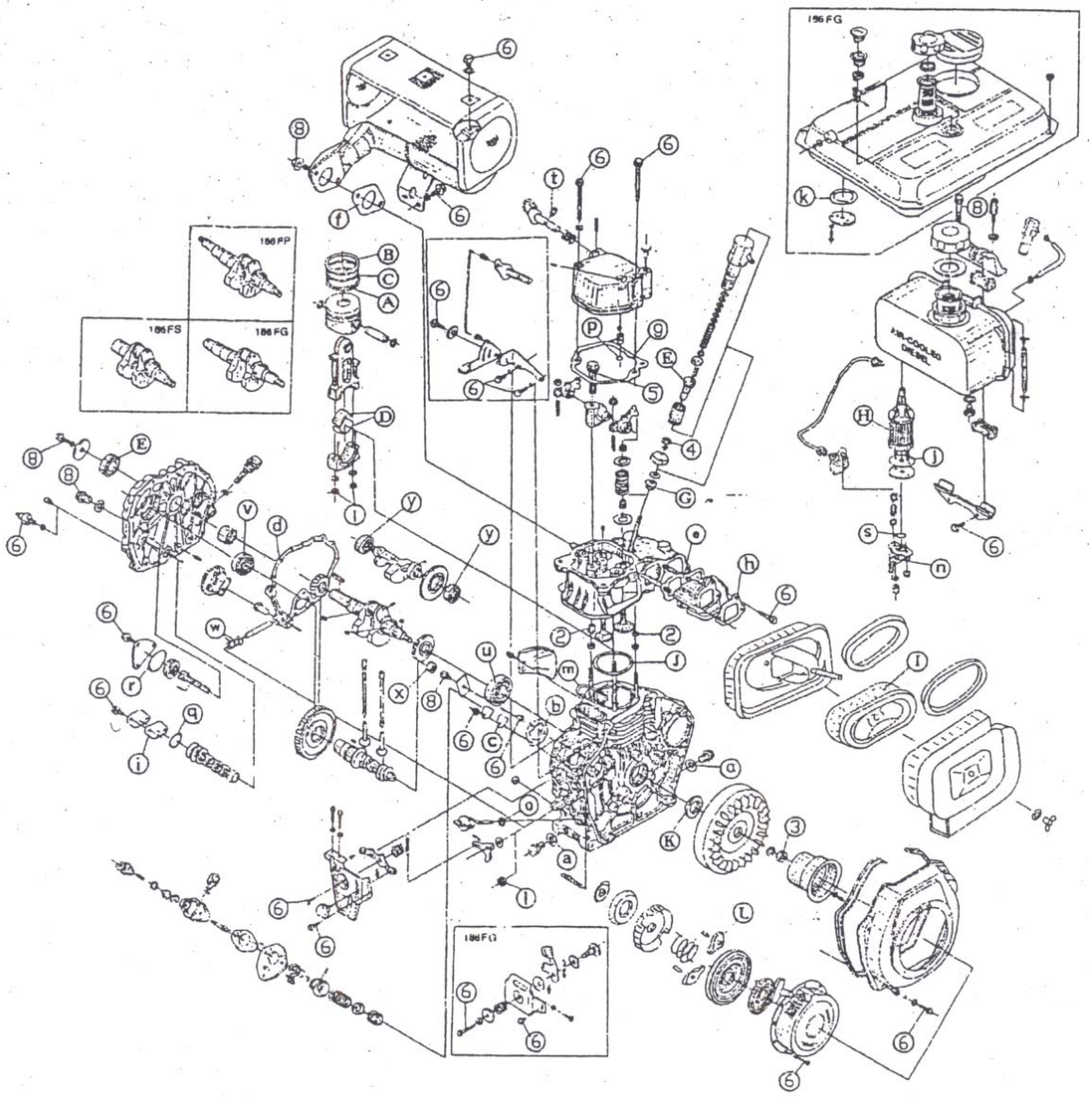


Figure 1. *Please refer to your engine owner's manual for a complete parts list.*

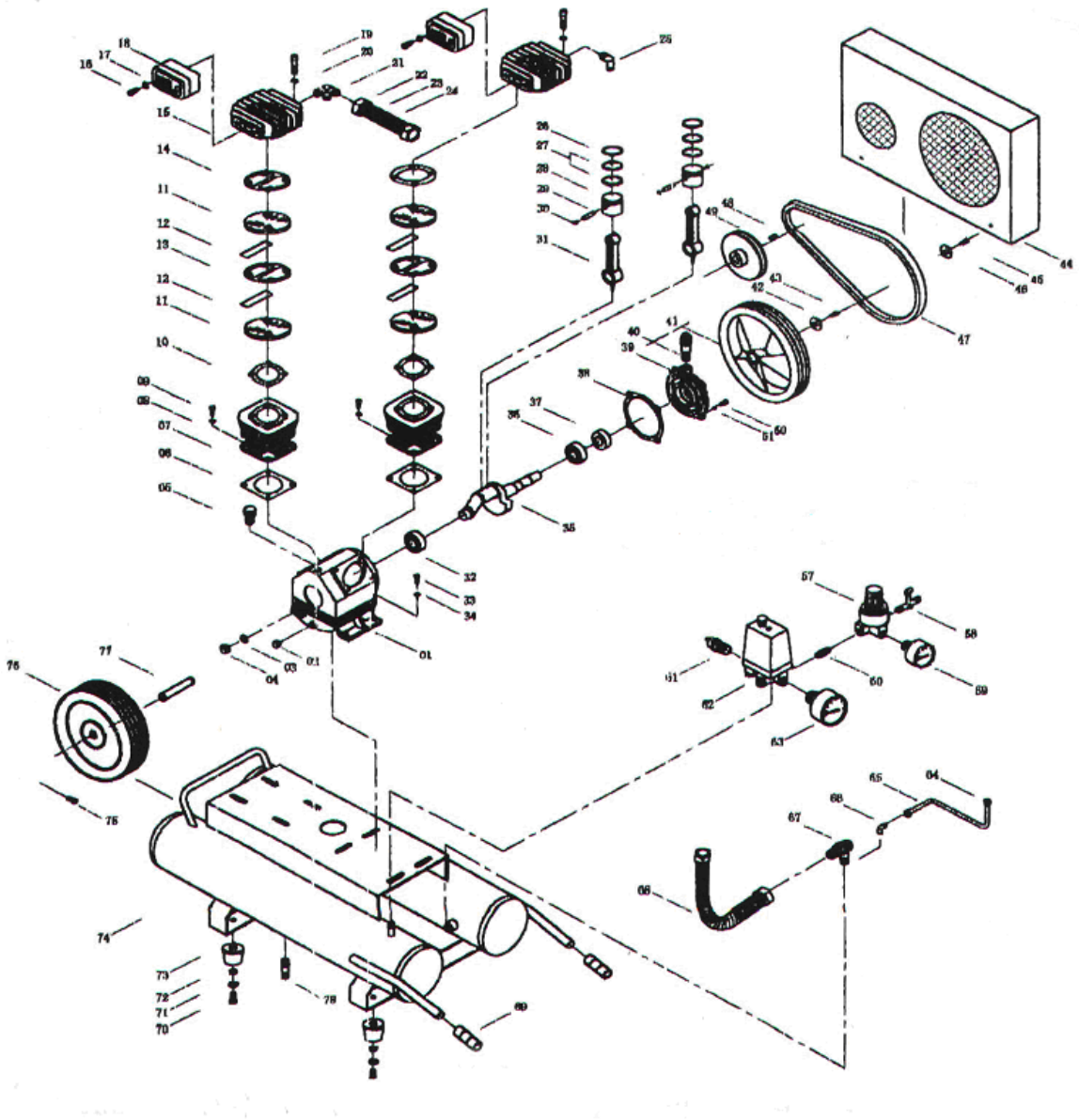


Figure 2. *Exploded view of air compressor*

Table 1. *Please refer to figure 2 for a complete illustration of parts.*

Number	Description	Part Number
1	Crankcase	ETQ011DA1
2	Oil drain plug	ETQ011DA2
3	Seal ring	ETQ011DA3
4	Oil window	ETQ011DA4
5	Oil fill plug	ETQ011DA5
6	Cylinder gasket	ETQ011DA6
7	Cylinder	ETQ011DA7
8	Spring washer	ETQ011DA8
9	Bolt	ETQ011DA9
10	Plate Gasket	ETQ011DA10
11	Valve seat	ETQ011DA11
12	Valve plate	ETQ011DA12
13	Aluminum gasket	ETQ011DA13
14	Cylinder cover gasket	ETQ011DA14
15	Cylinder cover	ETQ011DA15
16	Bolt	ETQ011DA16
17	Spring washer	ETQ011DA17
18	Air filter	ETQ011DA18
19	Bolt	ETQ011DA19
20	Spring washer	ETQ011DA20
21	3 way elbow	ETQ011DA21
22	Nut	ETQ011DA22
23	Cooling fin	ETQ011DA23
24	Exhaust pipe	ETQ011DA24
25	Elbow	ETQ011DA25
26	Air ring	ETQ011DA26
27	Oil ring set	ETQ011DA27
28	Piston	ETQ011DA28
29	Piston pin	ETQ011DA29
30	Split ring	ETQ011DA30
31	Connecting rod	ETQ011DA31
32	Bearing	ETQ011DA32
33	Bolt	ETQ011DA33
34	Spring washer	ETQ011DA34
35	Crankshaft	ETQ011DA35
36	Bearing	ETQ011DA36
37	Oil seal	ETQ011DA37
38	Bearing seat gasket	ETQ011DA38
39	Bearing seat	ETQ011DA39
40	Breather	ETQ011DA40
41	Pulley	ETQ011DA41
42	Gasket	ETQ011DA42
43	Bolt	ETQ011DA43
44	Safety guard	ETQ011DA44

45	Bolt	ETQ011DA45
46	Washer	ETQ011DA46
47	V-belt	ETQ011DA47
48	Key	ETQ011DA48
49	Motor pulley	ETQ011DA49
50	Bolt	ETQ011DA50
51	Spring washer	ETQ011DA51
52	Bolt	ETQ011DA52
57	Regulator	ETQ011DA53
58	Air cock	ETQ011DA54
59	Pressure gauge	ETQ011DA55
60	Connector	ETQ011DA56
61	Safety valve	ETQ011DA57
62	Pressure switch	ETQ011DA58
63	Pressure gauge	ETQ011DA59
64	Unloading pipe nut	ETQ011DA60
65	Unloading pipe	ETQ011DA61
66	Unloading elbow	ETQ011DA62
67	Check valve	ETQ011DA63
68	Exhaust pipe	ETQ011DA64
69	Handle grip	ETQ011DA65
70	Bolt	ETQ011DA66
71	Washer	ETQ011DA67
72	Nut	ETQ011DA68
73	Rubber Foot	ETQ011DA69
74	Air Tank	ETQ011DA70
75	Bolt	ETQ011DA71
76	Tank wheel	ETQ011DA72
77	Wheel shaft	ETQ011DA73
78	Drain Cock	ETQ011DA74

Note: *Diagram may vary a little depending on age of equipment.* ***Eastern Tools and Equipment, Inc. reserves the right to make changes at any time without notice and without incurring any obligation***. *If any of the parts are not listed in the table or figure, please contact your local dealer for parts or give us a call directly.*

LIMITED WARRANTY

Eastern Tools & Equipment, Inc. will repair or replace, free of charge, any part or parts of the generator that are defective in material or workmanship or both. Transportation charges on parts submitted for repair or replacement under this Warranty must be borne by purchaser. This warranty is effective for the time period and subject to the conditions provided for in this policy. For warranty service, find the nearest Authorized Service Dealer by contacting the place of purchase or Eastern Tools & Equipment, Inc. THERE IS NO OTHER EXPRESSED WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM PURCHASE, OR TO THE EXTENT PERMITED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. LIABILITY FOR CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

Eastern Tools & Equipment, Inc.

WARRANTY PERIOD***

ENGINES	WITHIN U.S.A AND CANADA		OUTSIDE U.S.A. AND CANADA	
	CONSUMER USE	COMMERCIAL USA	CONSUMER USE	COMMERCIAL USE
DIESEL AIR COMPRESSOR	1 year or 1000 hours	1 year or 1000 hours	1 year or 1000 hours	1 year or 1000 hours

* The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated in the table above. "Consumer use" means personal residential household use by a retail consumer. "Commercial use" means all other uses, including use for commercial, income producing or rental purposes. Once the engine has experienced commercial use, it shall thereafter be considered as a commercial use engine for purposes of this warranty. **Engines used in competitive racing or on commercial or rental tracks are not warranted.**

*** A two-year or 1,500 hour warranty applies to the emission control system on engines certified by EPA and CARB

IMPORTANT
"WARRANTY REGISTRATION IS NECESSARY TO OBTAIN LIMITED WARRANTY ON EASTERN TOOLS & EQUIPMENT, INC., ENGINES. THE WARRANTY REGISTRATION CARD MUST BE RETURNED WITHIN 15 DAYS OF ORIGINAL PURCHASE FOR LIMITED WARRANTY TO BE VALID."

About Your Product Warranty

Eastern Tools & Equipment, Inc. welcomes warranty repair and apologizes to you for being inconvenienced. Any Authorized Service Dealer may perform warranty repairs. Most warranty repairs are handled routinely, but sometimes warranty service may be inappropriate. For example, warranty would not apply if an engine is damaged because of misuse, lack of routine maintenance, shipping, handling, warehousing and improper installation. Similarly, warranty is void if the serial number on the engine has been removed or if the engine has been altered or modified. If a customer differs with the decision of the Service Dealer, an investigation will be made to determine whether the warranty applies. Ask the Service Dealer to submit all supporting facts to his Distributor or the factory for review. If the distributor or the factory decides that the claim is justified, the customer will be fully reimbursed for those items that are defective. To avoid misunderstanding, which might occur between the customer and the dealer, listed below are some of the causes of engine failure that the warranty does not cover.

Normal wear:

Engines and generators, like all mechanical devices, need periodic parts service and replacement to perform well. Warranty will not cover repair when normal use has exhausted the life of a part of an engine.

Improper maintenance:

The life of an engine or your equipment depends upon the conditions under which it operates, and the care it receives. Some applications, such as tillers, pumps, and rotary movers, are very often used in dusty or dirty conditions, which can cause what appears to be premature, wear. Such wear, when caused by dirt, dust, spark pug cleaning grit, or other abrasive material that has entered the engine because of improper maintenance is is not covered by warranty.

This warranty covers engine related defective material and/or workmanship only, and not replacement or refund of the equipment to which the engine may be mounted. Nor does the warranty extend to repairs required because of:

1. PROBLEMS CAUSED BY PARTS THAT ARE NOT ORIGINAL EASTERN TOOLS & EQUIPMENT, INC., PARTS.
2. Equipment controls or installations that prevent starting, cause unsatisfactory engine performance, or shorten engine life. (Contact equipment manufacturer.)
3. Leaking carburetors, clogged fuel pipes, sticking valves, or other damage, caused by using contaminated or stale fuel. (Use clean, fresh, lead-free gasoline.)
4. Parts which are scored or broken because an engine was operated with insufficient or contaminated lubricating oil, or an incorrect grade of lubricating oil (check oil level daily or after every 8 hours of operation. Refill when necessary and change at recommended intervals.) Engine damage may occur if oil level is not properly maintained. Read Operating & Maintenance Instructions.
5. Repair or adjustment of associated parts or assemblies such as clutches, transmissions, remote controls, etc., which are not manufactured by Eastern Tools & Equipment, Inc.
6. Damage or wear to parts caused by dirt, which entered the engine because of improper air cleaner maintenance, re-assembly, or use of a non-original air cleaner element or cartridge. Read Operating & Maintenance Instructions.
7. Parts damaged by over-speeding, or overheating caused by grass, debris, or dirt, which plugs or clogs the cooling fins, or flywheel area, or damage caused by operating the engine in a confined area without sufficient ventilation.
8. Engine or equipment parts broken by excessive vibration caused by a loose cutter blades unbalanced blades or loose or unbalanced impellers, improper attachment of equipment to engine crankshaft, over-speeding or other abuse in operation.
9. A bent or broken crankshaft, caused by striking a solid object with the cutter blade of a rotary lawn mower, or excessive v-belt tightness.
10. Routine tune-up or adjustment of the engine.
11. Engine or engine component failure, i.e., combustion chamber, valves, valve seats, valve guides, or burned starter motor winding, caused by the use of alternate fuels such as, liquefied petroleum, natural gas, altered gasoline's, etc.

Warranty is available only through service dealers, which have been authorized by Eastern Tools & Equipment, Inc. Contact place of purchase or Eastern Tools & Equipment, Inc. for Service Dealer near you.

CALIFORNIA & USEPA EMISSION CONTROL WARRANTY STATEMENT

The U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB) and Eastern Tools & Equipment, Inc. are pleased to explain the Federal and California Emission Control System Warranty on your 2003 small off-road engine. In California, new small off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Eastern Tools & Equipment, Inc. must warrant the emission control system on your small off-road engine for the periods of time listed above provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emission control system may include parts such as the carburetor, or fuel-injection system, the ignition system and catalytic converter. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, Eastern Tools & Equipment, Inc. will repair your small off-road engine at no cost to you including diagnosis, parts and labor.

OWNER'S WARRANTY RESPONSIBILITIES

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. Eastern Tools & Equipment, Inc. recommends that you retain all receipts covering maintenance on your small off-road engine, but Eastern Tools & Equipment, Inc. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine owner, you should, however, be aware that Eastern Tools & Equipment, Inc. may deny you warranty coverage if your small off-road engine or a part thereof has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine to Eastern Tools & Equipment, Inc. distribution center as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities or to request warranty service you should contact either the place of purchase or Eastern Tools & Equipment, Inc., c/o Service Manager, Engine and Equipment Service Division, 12220 Rivera Road, Suite-B; Whittier, California 90606. Telephone 1-562-698-7500, or contact Eastern Tools & Equipment, Inc. through the Internet at http://www.easterntools.com

IMPORTANT NOTE:

This warranty statement explains your rights and obligations under the Emission Control System Warranty (ECS Warranty), which is provided to you by Eastern Tools & Equipment, Inc. pursuant to California law. Eastern Tools & Equipment, Inc. also provides to original purchasers of new Eastern Tools & Equipment, Inc engines. Eastern Tools & Equipment, Inc. Limited Warranties for New engines & other Equipment associated with the engine (Eastern Tools & Equipment, Inc. Products Warranty), which is enclosed with all New Eastern Tools & Equipment, Inc. engines and products on a separate sheet. The ECS Warranty applies only to the emission control system of your new engine. To the extent that there is any conflict in terms between the ECS Warranty and the Eastern Tools & Equipment, Inc., Warranty, the ECS Warranty shall apply except in any circumstances in which the Eastern Tools & Equipment, Inc. Product Warranty may provide a longer warranty period. Both the ECS Warranty and the Eastern Tools & Equipment, Inc. product Warranty describe important rights and obligations with respect to your new engine.

Eastern Tools & Equipment, Inc. at its location in Whittier, California can perform warranty service or any authorized service dealer near you. At the time of requesting warranty service, evidence must be presented of the date of sale to the original purchaser. The purchaser shall pay any charges for transporting the products to and from the place where the inspection and/or warranty work is performed. The purchaser shall be responsible for any damage or loss incurred in connection with the transportation of any engine or any part(s) thereof submitted for inspection and/or warranty work.

If you have any questions regarding your warranty rights and responsibilities, you should contact eastern Tools & Equipment, Inc. at 1-562-320-0231.

Appendix:

PRODUCT REGISTRATION CARD

For more efficient customer service, please fill out the information below and mail to Eastern Tools & Equipment, Inc. Product Warranty and Registration Division, 12220 Rivera Rd, suite B; Whittier, CA 90606

Model No._____ Engine Serial No._____ Purchase Date _____/_____/_____

Purchased from: [ ] Retail location [ ] Private Consumer [ ] Other_____
Name_____
Location Address_____
Telephone w/ area code_____ Purchase Price_____

Purchased: [ ] NEW or [ ] USED

Consumer Information:
Name_____ Telephone w/ area code _____
Street Address_____ Suite or Apt No. _____
City_____ State_____ Zip Code_____
Province or Country_____
Are you a: [ ] Business or [ ] Residence

Product Usage Information:
How often will you use this product? [ ] Everyday [ ] Periodically [ ] Emergency use only
[ ] Other_____

What type of application will you use this product in?
[ ] Heavy Commercial [ ] Moderate Commercial [ ] Light Commercial [ ] Tradeshows
[ ] Heavy Residential [ ] Moderate Residential [ ] Light Residential [ ] Camping, backpacking
[ ] Other_____

IMPORTANT INFORMATION:
It is critical to your warranty that the original point of sales receipt be retained by current consumer, and in order to comply with Eastern Tools & Equipment Product Warranty Statement you must return this registration card within 15 days of original purchase. Product warranty is valid from original date of purchase.

List for comments from users

		Date of Manufacture	
Name of user		Model Number	
Address of user		Occupation	
Place of purchase			
Packaging conditions			
Operating conditions			
Parts Conditions			
Malfunction problem			
Opinions or suggestions			

Note: Please mail the above card to: ***Eastern Tools & Equipment, Inc.***
12220 Rivera Rd, Suite B
Whittier, CA 90606

EASTERN TOOLS & EQUIPMENT, INC.

TEL: 1-626-960-6299

FAX: 1-626-960-6244

WEB SITE.http://easterntools.com