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FORM OMP 300 *Revised 11/11*

OPERATION, MAINTENANCE, and PARTS MANUAL for the DP-300S and DP-300T Sealcoat Skid & Trailer Systems

Read this instruction manual before operating this equipment

DISCLAIMER

NEALCO™ Equipment, LLC is continually working to improve its products. We have taken the utmost care to provide you with a manual that is as accurate as possible. Should you find any questionable or conflicting documentation, instructions, or illustrations in any section of the manual provided and the actual physical equipment construction pertaining to the operation, maintenance, or repair of said product **consult the factory immediately for clarification before attempting further operation or completion of maintenance and/or repairs**.

DO NOT ATTEMPT TO OPERATE, REPAIR, OR MAINTAIN THE EQUIPMENT without completely understanding its proper operation and maintenance procedures and operational controls.

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ENGINE AND COMPRESSOR MANUALS

The purpose of this manual is to provide the operator and site maintenance personnel with knowledge of the fundamental rules and criteria to be followed for the on-site use and maintenance of the DP-300S and DP-300T Sealcoat System. This instruction manual must be read and fully understood by the operator before operating the machine.

This manual consists of:

• Introduction	• Troubleshooting
• Safety Rules	• Maintenance
• Operating Instructions	• Schematic
• Technical Specifications	• Parts Information

Always keep this manual where it can be easily referred to. If any part of this manual cannot be understood, contact your supervisor or local NEALCO™ Distributor. This is an essential condition for working safely with this machine. The correct machine operation, use, and regular maintenance are also essential elements to provide the highest performance and safety.

NOTE:

This manual is accompanied by an engine instruction manual provided by the engine's manufacturer. Please follow the operation and maintenance instructions as specified in both the machine and engine manuals.

PROCEDURE WHEN RECEIVING THE MACHINE

Your machine has been tested, accurately checked, and prepared for shipment. Every part of the machine, including the detached parts, has been accurately checked before being shipped from the factory. When you receive the machine, your dealer will go over each item on your machine and verify that there is no damage or missing parts. By signing this checklist you relieve NEALCO™ of liabilty, damages, or parts lost during shipping. Check the equipment by consulting the shipment documents. If goods are damaged or if parts are missing, inform the freight agent as soon as possible. They will inform you regarding how to proceed in order to make a complaint.

IDENTIFICATION DATA

An exact description of the model type and serial number of your machine will facilitate fast and efficient response from our parts and service operations. Always provide the model of your machine and its serial number when you contact the local NEALCO™ service or parts office. We advise you to enter your machine data in the following lines to maintain machine and engine information.

Model ..... Month/Year of Manufacture .....

Serial No. .....

Air Compressor Type and Serial No. .....

MACHINE IDENTIFICATION

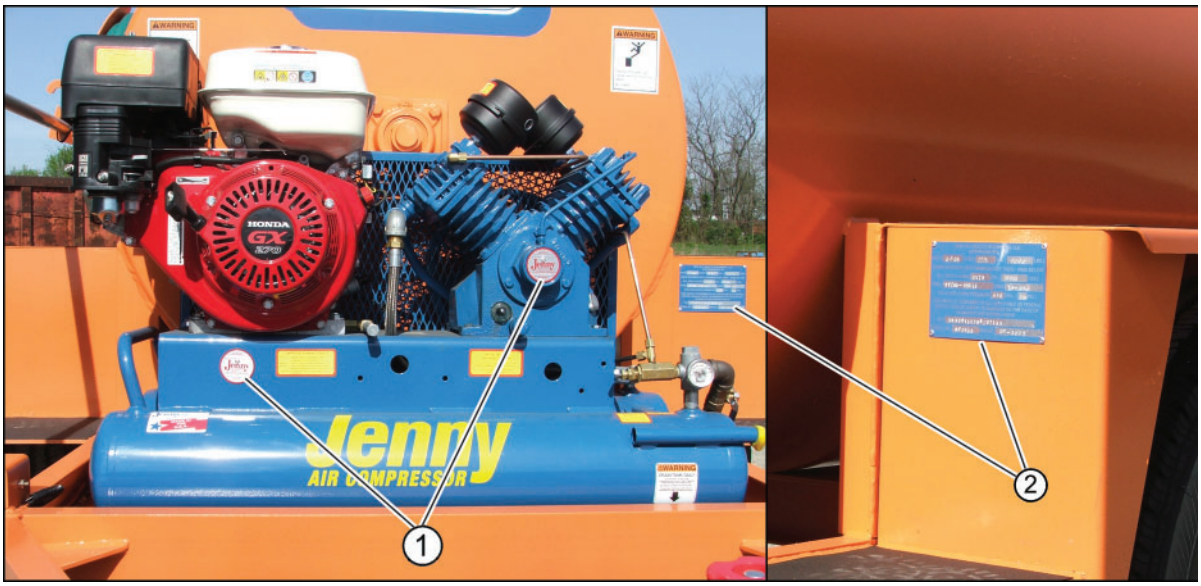

Figure 1

The DP-300S and DP-300T System machine identification plate is located at 1, Figure 1, and the air compressor serial number can be found on its identification plate located at 2, Figure 1. For skid units identification plate can be found on inside of frame rail, rear right side, adjacent to material pump. The dual diaphragm material pump serial number is located on a plastic card contained in your packet.

GENERAL INFORMATION

All safety rules in *Section 1, Safety* must be observed.

If further information is required concerning the recommended use on asphalt applications, contact your local NEALCO™ Distributor.

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NEALCO™ reserves the right to make changes or modifications without prior notice and without incurring any liability to retrofit machines previously shipped from the factory.

DP-300S AND DP-300T SEALCOAT SYSTEM MACHINE DESCRIPTION

The DP-300S and DP-300T Sealcoat System is designed for use on driveways and small to medium sized commercial lots. The single axle trailer, equipped with electric brakes, is designed for heavy work loads and built for safety and durability. Radial tires provide dependable stability when in tow.

BE AWARE OF SAFETY INFORMATION

This is the Safety Alert Symbol. When you see this symbol in this manual, be alert to the potential for personal injury. This includes being alert to machine wear which can lead to part failure. Follow recommended precautions and safe operating practices.

(SAFETY ALERT SYMBOL)

UNDERSTAND SIGNAL WORDS

A signal word—DANGER, WARNING, or CAUTION—is used with the safety alert symbol.

DANGER, WARNING, or CAUTION safety labels may be located near specific hazards.

NOTICE labels are for general information. They notify people of installation, operation, or maintenance information which is important but not hazard related.

⚠ DANGER

(RED BACKGROUND)

DANGER IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH WILL CAUSE SEVERE PERSONAL INJURY OR DEATH IF THE WARNING IS IGNORED.

⚠ WARNING

(ORANGE BACKGROUND)

WARNING IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH CAN CAUSE SEVERE INJURY OR DEATH IF THE WARNING IS IGNORED.

⚠ CAUTION

(YELLOW BACKGROUND)

CAUTION IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH WILL OR CAN CAUSE PERSONAL INJURY OR PROPERTY DAMAGE IF THE WARNING IS IGNORED.

NOTICE

Notice is used to notify people of installation, operation, or maintenance information which is important but not hazard related.

SAFETY LABEL LOCATION

Refer to Figure 1-1 for the location of the safety labels:

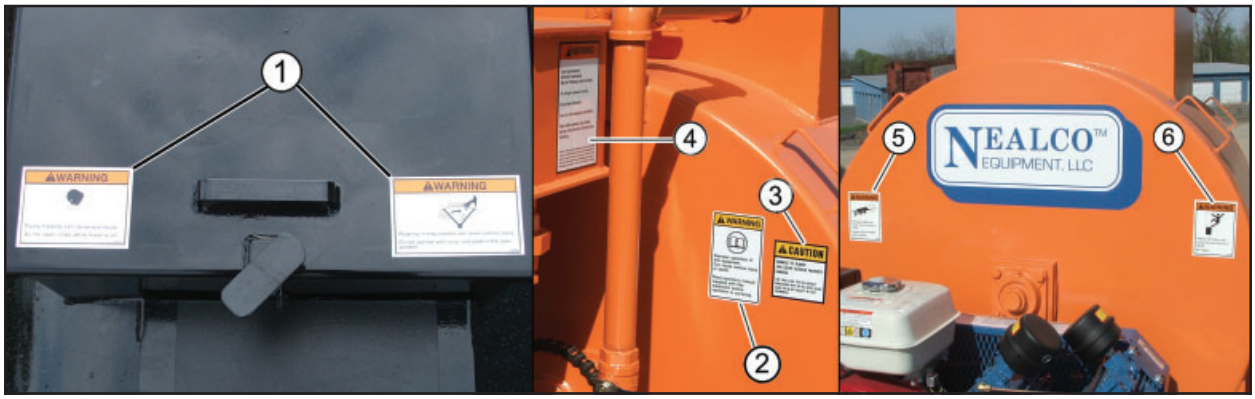


Figure 1-1

1. Safety Warning: “NEVER!!! Open Outer Hatch Lid With Agitator Engaged or Moving. NEVER!!! Open Inner Hatch Lid With System Running or Moving.”

2. Safety Warning: “WARNING. Improper operation of this equipment can cause serious injury or death. Read operator’s manual supplied with this equipment before operation or servicing.”

3. Caution: “CAUTION. Damage to pumps. Can cause serious property damage. Use only coal tar or asphalt emulsions with 30/60 sieve Silica Sand or Black Beauty in this equipment.”

4. Safety Warning: “WARNING. Cold liquid asphalt. Harmful if swallowed. May be irritating to skin and eyes. Do not get in eyes or on skin. Do not take internally. Use only with adequate ventilation. Wear safety glasses, face shield, gloves, and protective clothing when handling. First Aid: Obtain medical attention as quickly as possible. In case of contact with eyes, flush immediately with plenty of water for at least 15 minutes. In case of contact with skin, wash affected area with detergent and water. If swallowed, give milk or olive oil. Do not induce vomiting.”

5. Safety Warning: “WARNING. Runaway trailer can cause serious injury or death. Always chock wheels when parked.”

6. Safety Warning: “WARNING. Falling off trailer can cause serious injury or death. No Riders.”

OVERVIEW

BEFORE YOU OPERATE, MAINTAIN, OR IN ANY OTHER WAY USE THIS MACHINE:

READ and STUDY this manual. KNOW how to safely use the DP-300S and DP-300T Sealcoat System controls and what you must do for safe maintenance.

If you have ANY QUESTIONS about the safe use or maintenance of this machine, ASK YOUR SUPERVISOR OR CONTACT ANY NEALCO™ DISTRIBUTOR. NEVER GUESS—ALWAYS CHECK!

WARNINGS IN MANUAL

The following conventions are used in this manual to designate instructions of particular importance.

Note: Refers to special information on the efficient use of the machine.

Notice: Denotes special nonhazardous related information.

Caution: Refers to orders and prohibitions directed towards preventing minor personal injury or product/property damage.

Warning: Refers to orders and prohibitions designed to prevent severe personal injury, death or extensive damage.

GENERAL

The NEALCO™ DP-300S and DP-300T Sealcoat System is built in accordance with state-of-the-art standards and recognized safety rules. Nevertheless, misuse may constitute a risk to life and limb of the user or of third parties, and may cause damage to the machine or other material property.

The machine must be used in accordance with its designated use as described in *Section 2, Operation* in this manual. The machine must only be operated by safety-conscious persons who are fully aware of the risks involved in operating the machine. Any functional disorders, especially those affecting the safety of the machine, must be corrected immediately.

The machine is designed exclusively for the sealing of asphaltic road construction materials. Use of the machine for purposes other than that mentioned is considered contrary to its designated use. The manufacturer/supplier cannot be held liable for any damage resulting from such use. The risk of such misuse lies entirely with the user.

Operating the machine within the limits of its designated use also involves compliance with the maintenance directives contained in *Section 5, Maintenance.*

SELECTION AND QUALIFICATION OF PERSONNEL

Work on and with the machine must be performed by qualified personnel only. Statutory minimum age limits must be observed.

Individual responsibilities of the personnel responsible for operation, setup, maintenance and repair of the machine should be stated clearly.

Do not allow persons being trained or instructed in the operation or maintenance of the machine to work without permanent supervision by an experienced person.

Work on the electrical system and equipment of the machine must be done only by a skilled electrician or by instructed persons under the supervision and guidance of a skilled electrician and must be in accordance with electrical engineering rules and regulations.

Work on ANY of the machine's systems must be performed by skilled personnel with special knowledge and training for such work.

ORGANIZATIONAL MEASURES

Manuals MUST always be available at the site where the machine is used.

OBSERVE AND INSTRUCT the user in all other generally applicable legal and mandatory regulations relevant to accident prevention and environmental protection. These compulsory regulations may also deal with the handling of hazardous substances, issuing and/or wearing of personal protective equipment, and traffic regulations.

SUPPLEMENT operating instructions with detailed working instructions pertaining to the specific work location.

ALWAYS be sure that persons entrusted with work on the machine have read the operating instructions and in particular the chapter on safety before beginning work. Reading the instructions after work has begun is too late. This is especially important for persons who work only occasionally on the machine, e.g. during set-up or maintenance.

MAKE CERTAIN personnel are working in compliance with the operating instructions and are alert to risks and safety factors.

ALWAYS tie back or otherwise secure long hair, wear close-fitting garments and avoid wearing jewelry such as rings. Injury may result from clothing, hair, or jewelry being caught up in the machinery.

ALWAYS wear or use the proper safety items required for your personal protection, including boots, protective clothing, gloves, hat, and safety glasses.

OBSERVE all safety instructions and warnings attached to the machine.

BE SURE all safety instructions and warnings attached to the machine are complete and perfectly legible.

STOP the machine immediately in the event of any malfunction. REPORT the malfunction to the proper authority/person.

NEVER provide service or maintenance to the machine in ANY manner other than that which is described in this manual.

NEVER make any modifications, additions or conversions to the machine which might affect safety without the manufacturer's approval. This also applies to the installation and adjustment of safety devices and valves as well as to welding work on load bearing elements.

ALWAYS ADHERE to prescribed intervals or those specified in the operating instructions for routine checks and inspections.

OBSERVE all fire-warning and fire-fighting procedures.

TRANSPORTING AND TOWING TRAILER SYSTEM

The machine must be towed and transported only in accordance with the operating instructions. For towing the machine, observe the prescribed transport position, admissible speed and itinerary. Never turn corners at excessive speeds. Look in all directions before reversing your direction of travel.

⚠WARNING

Failure to follow these instructions can cause severe injury or death.

- **Ensure that tires, wheels, and running gear are in good condition and secure.**
- **Ensure that tires are inflated to 65 psi.**
- **Do not tow this unit in excess of 50 mph (80 km/hr).**
- **Use a tow vehicle the towing capacity of which is greater than the gross weight of this unit.**

PRE-START INSPECTION

INSPECT your DP-300S and DP-300T Sealcoat System machine daily. Ensure that the routine maintenance and lubrication are being dutifully performed (refer to the maintenance schedule in *Section 5, Maintenance*.). Have any malfunctioning, broken, or missing parts repaired or replaced before use. Check air system.

VERIFY that all instruction and safety labels are in place and readable. These are as important asany other equipment on the machine.

USE CAUTION when opening the engine's protective covers. Ensure that no one is standing or sitting on, or leaning against the towing fork upon which the cover rests when open.

NEVER fill the fuel tank with the engine running, while near an open flame, or while smoking.

ALWAYS wipe up any spilled fuel.

KNOW the location of the material pump control shut-off valve.

ALWAYS know the capabilities and limitations of your equipment.

BE AWARE of the dimensions of your NEALCO™ Sealcoat System—height and weight—as well as your towing/transporter's dimensions and weight.

CHECK for any conditions in the work area that could be dangerous—holes, banks, underground culverts, manhole covers, water meter pits, curb and/or street boxes.

Starting

NEVER reach across the engine to start it. Ensure secure footing and grip on pull chord when starting the recoil engine.

ALWAYS be aware of the operations and limitations of the air compressor before operating the machine.

Refer to compressor safety and starting procedures in Jenny Compressor section in the back of this manual.

Safety Instructions Governing Operation

⚠WARNING

While in operation, NEVER open the fill/drain ball valve (2, Figure 2-5 in *Section 2, Operation*). Material in the tank is under pressure. Opening the valve could allow the material to gush out and cause serious injury. NEALCO™ recommends that you remove the valve's handle to prevent the valve from accidentally being opened.

CHECK the machine at least once per working shift for obvious damage and defects. Report any changes, including changes in the machine's working behavior, to the competent organization/person immediately. If necessary, stop the machine immediately, shut down all controls, and turn off the engine.

AVOID any operational mode that might sacrifice safety.

TAKE all necessary precautions to ensure that the machine is used only when in a safe and reliable condition.

OPERATE the machine only if all protective and safety oriented devices are in place and fully functional.

USE CAUTION when standing on the platform to operate the machine's controls. The platform can be slippery when wet.

CLEAN any foreign material from the operator's platform to reduce the danger of slipping.

MAKE SURE no one is at danger or risk before starting up and when towing the machine while sealcoating.

ALWAYS KEEP at a distance from the edges of building pits and slopes.

AVOID any operation that might be a risk to machine stability.

ALWAYS SECURE the machine against inadvertent movement (chock wheels) and unauthorized use before leaving the unit unattended.

Operating

ALWAYS make sure that no person or obstruction is in your line of travel before starting to tow the machine.

NEVER CLIMB onto or off the machine at any time while it is being towed.

USE EXTREME CAUTION and be very observant when operating in close quarters or congested areas.

NEVER carry passengers.

KNOW the area in which you are working. Familiarize yourself with work site obstructions and any other potential hazards in the area, such as grades that could cause the machine to slide or tip over.

ALWAYS LOOK in all directions BEFORE changing your towing direction.

DO NOT run the engine in a closed building for an extended length of time. EXHAUST FUMES CAN KILL.

Stopping

ALWAYS park the machine on solid level ground. If this is not possible, always park at a right angle to the slope, chock the wheels, and lower the leveling device on the towing fork.

USE proper flags, barriers, and warning devices, especially when parking in areas of heavy traffic.

Maintenance

In any work concerning the operation, conversion or adjustment of the machine and its safety oriented devices or any work related to maintenance, inspection and repair, always observe the start-up and shutdown procedures set out in the operating instructions and the information on maintenance work.

Carry out maintenance and repair work only if the machine is positioned on stable and level ground and has been secured against inadvertent movement.

ALWAYS USE the correct tools and workshop equipment when performing maintenance to the machine.

KEEP all standing surfaces free from mud, dirt, snow and ice.

CLEAN the machine, especially connections and threaded unions, of any traces of oil, fuel or preservatives before carrying out maintenance/repair. NEVER use aggressive detergents. Use lint free cleaning rags.

Before cleaning the machine with water, steam jet (high pressure cleaning) or detergents, COVER OR TAPE up all openings which—for safety and functional reasons—must be protected against water, steam or detergent penetration. Special care must be taken with the engine and battery area.

REMOVE all covers and tapes applied for that purpose after cleaning machine.

After cleaning, EXAMINE all fuel lines for leaks, loose connections, chafe marks and damage. REPAIR or REPLACE defective parts immediately.

Always TIGHTEN any screwed connections that have been loosened during maintenance and repair.

ENSURE that all consumables and replaced parts are disposed of safely and with minimum environmental impact.

AVOID, whenever possible, servicing, cleaning, or examining the machine with the engine running.

AVOID, whenever possible, servicing or providing maintenance unless the machine is adequately secured against movement.

NEVER fill the fuel tank with the engine running, while near an open flame, or while smoking. ALWAYS wipe up any spilled fuel.

ALWAYS replace damaged or lost decals. Call NEALCO™ or your local distributor for new decals.

The electrical equipment of machines is to be inspected and checked at regular intervals. Defects such as loose connections or scorched cables must be rectified immediately.

Welding, flame cutting and grinding work on the machine should only be done if expressly authorized, as there may be a risk of explosion and fire.

Before beginning welding, flame cutting and grinding operations, clean the machine and its surroundings from dust and other flammable substances and make sure that the premises are adequately ventilated. (Risk of explosion. Check all lines, hoses and screwed connections

regularly for leaks and obvious damage. Repair damage immediately. Splashed oil may cause injury and fire.)

When handling oil, grease and other chemical substances, observe the product related safety regulations.

Provide adequate air circulation when charging battery. Do not charge battery in any other container besides the supplied battery box.

⚠CAUTION

Do not place batteries in close proximity to objects which can produce sparks or flames.

Do not expose battery case to organic solvents or adhesives.

⚠CAUTION

Do not attempt to disassemble batteries. Contact with sulfuric acid may cause harm.

⚠CAUTION

Fasten batteries tightly and make provisions for shock absorption if exposure to shock or vibration is likely.

⚠WARNING

Do not throw batteries into fire; batteries so disposed may rupture or explode.

HAZARDOUS SUBSTANCE PRECAUTION

The following substances are used in the manufacture or produced during the operation of this machine and may be hazardous to health if used incorrectly:

SUBSTANCE	PRECAUTION
Engine Lubricating Oil	Avoid ingestion, skin contact and breathing fumes
Engine Fuel	Avoid ingestion, skin contact and breathing fumes
Engine Exhaust Fumes	Avoid breathing Avoid buildup of fumes in confined spaces
Sealcoating Mixtures	Avoid ingestion, skin contact and breathing fumes
Lead-Acid Battery	Avoid ingestion, skin contact

TRANSPORTING AND TOWING TRAILER SYSTEM

The machine must be towed and transported only in accordance with the operating instructions. For towing the machine, observe the prescribed transport position, admissible speed and itinerary. Never turn corners at excessive speeds. Look in all directions before reversing your direction of travel.

⚠WARNING

Failure to follow these instructions can cause severe injury or death.

- **Ensure that tires, wheels, and running gear are in good condition and secure.**
- **Ensure that tires are inflated to 80 psi.**
- **Do not tow this unit in excess of 50 mph (80 km/hr).**
- **Use a tow vehicle the towing capacity of which is greater than the gross weight of this unit.**

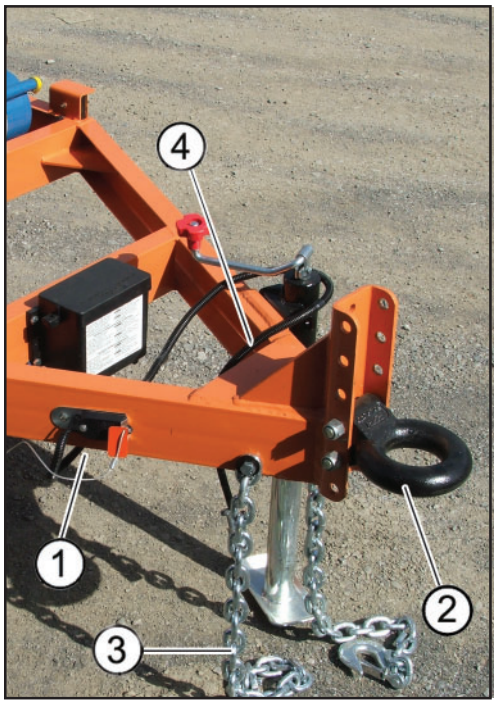


Figure 2-1

Always follow these steps to ensure that the DP-300T Sealcoat Trailer System Machine is transported in the safest possible manner.

1. Attach the breakaway electric switch cable loop (1, Figure 2-1) around the ball or pintle latch at the rear of the towing vehicle. This switch will automatically engage the trailer's electric brakes should the trailer and towing vehicle separate.
2. Connect the pintle ring (2, Figure 2-1) of the towing tongue securely to the hitch on the towing vehicle.
3. Attach the safety chains (3, Figure 2-1) that come with the machine to an approved location on the towing vehicle.
4. Connect the 6-pin female electric coupling (4, Figure 2-1) on the trailer to the male coupling at the back of the towing vehicle. This provides electric current for the trailer's taillights and electric brakes, and for charging the trailer's battery.
5. Inspect break away system

TRANSPORTING SKID SYSTEM

The machine must be transported only in accordance with the operating instructions. Observe the prescribed transport position, admissible speed and itinerary. Never turn corners at excessive speeds. Look in all directions before reversing your direction of travel.

Always follow these steps to ensure that the DP-300S Sealcoat Skid System Machine is transported in the safest possible manner.

1. Be aware of height of unit at all times.
2. Be aware of weight limits of your vehicle.
3. Each time before moving check attach points.
4. Follow all safe driving practices.

STARTING THE AIR COMPRESSOR

Follow procedure in compressor manual. Refer to Jenny Operation and Maintenance Manual.

MATERIAL PUMP CONTROLS

The material pump is controlled by the air compressor. The air pressure regulator gauge indicates pump pressure is active.

The speed of the material pump is variable and is controlled by the regulator control valve (7, Figure 2-2). Rotating the knob clockwise decreases the air pressure; counterclockwise increases the air pressure.

⚠WARNING

DO NOT exceed 125 psi.

Preparing to Spray the Material

Make sure all ball valves are closed before preparing to spray material. Refer to Figure 2-2 for valve number assignments in these instructions.

1. The first step should always be to inspect your machine for loose, broken, worn, or missing parts. Check all hoses and fittings for wear or stress. Make sure your material filter is emptied and lid is on tight. Check each ball valve to be sure they are in the “off” position.
2. Start the Jenny™ Air Compressor following the manufacturer’s directions in the owner’s manual.

3. Open the ball valve at the valve on the blue tank that allows air through the red hose to the back of the machine.

4. Now open valve #3, allowing air into the dual-diaphragm pump. The pump will operate shortly until it builds pressure, and then it will go into "neutral" or stall.

5. If you are filling your sealer with the pump you must hook your quick connect hose to the fitting at valve #2, then open valve #2 and valve #6. Adjust pump speed as desired with #7. If already filled through manway, skip to next step.

6. Open valve #1 (be sure #2 is closed) and valve #6 to allow circulation to start. This is pumping material from the bottom of the tank and pouring it back in the top. You can visually confirm by looking in the manway. Now is a good time to add any additives if you haven't already. The circulation will mix the material, but you must crank the hand agitation for at least 5 minutes to ensure a good mix.

7. Before spraying a customer's asphalt, it is a good idea to spray some sealer on a surface that is okay to practice on so you can find the best speed settings on the regulator #7 to make you comfortable with your work.

8. To begin spraying, first close #6 and then open #5 (#1 should still be open). After the surge tank fills up with sealer and pressure, the pump will stop (neutral). Now it is ready. Take the handwand firmly and open #4 and you are ready to go! Get yourself in position and open #8 fully open to spray sealer.

NOTE:
DO NOT ADJUST SPRAY WITH #8 VALVE TO PREVENT PREMATURE WEAR. It is best to have a partner adjust the knob on #7 for you. ***DO NOT EXCEED 125 PSI!***

When stopping spray momentarily, close #8 valve only. If quitting for the day close #1 and open #4, #8, and #5 and point the wand into the manway to drain material out of the pump and hose.

Ball Valve Functions

Refer to Figure 2-2

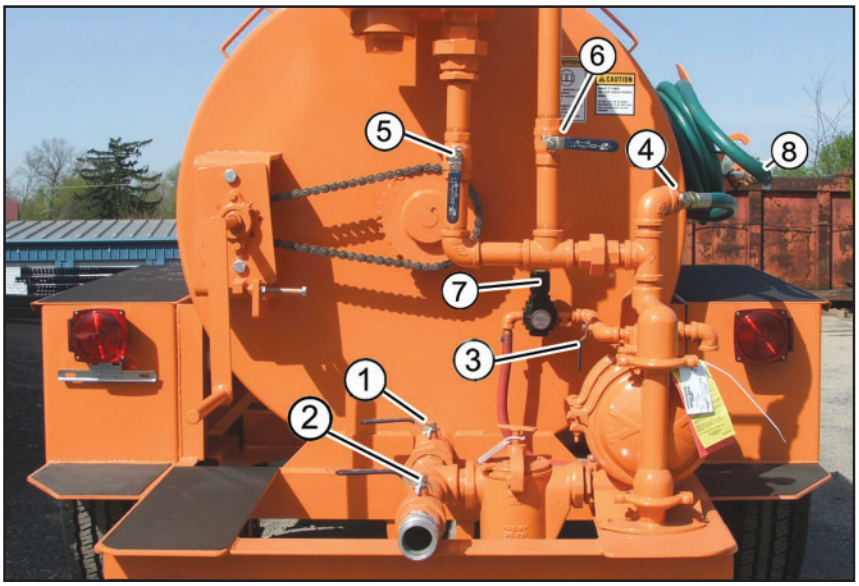


Figure 2-2

VALVE	FUNCTION
Valve #1	The main valve to the entire plumbing system. Opening this valve allows material to flow into the system from the tank.
Valve #2	Has two purposes: Main function is loading material into the tank with valve #1 closed. If valve #1 is open along with valve #2, the material will flow from the tank.
Valve #3	Allows air pressure to enter the dual-diaphragm material pump, thus actuating the pump and creating material flow.
Valve #4	Allows the material to enter the hose and handwand. This valve should be opened only when ready to spray sealer.
Valve #5	Opens the surge tank. This valve should be opened during spray mode and closed during recirculation mode.
Valve #6	Allows circulation into tank. This valve should be open when recirculating (remixing) material and when filling tank via #2 valve. Should be closed during spray mode.
Regulator #7	Use the knob on top of this regulator to control the speed of the pump and the flow rate of the material as you spray.
Valve #8	Handwand valve. When spraying, this valve shall be fully open. When stopping momentarily this valve shall be closed. DO NOT ADJUST SPRAY RATE WITH THIS VALVE. Use regulator #7 for that purpose.

NOTICE

Ball Valve #5 and #6 always work opposed to each other. When #5 is open, close #6. When #6 is open, close #5.

Hand Wand Operation

⚠CAUTION

ALWAYS wear or use the proper safety items required for your personal protection, including boots, protective clothing, gloves, hat, and safety glasses.

1. Begin with all valves closed.

2. Open valve at air compressor and open valve #3 to allow air diaphragm pump to build pressure. Adjust gauge to allow desired pressure (speed).

3. Once the compressor is running and the air pump is pumping, open valves #1 (1, Figure 2-2) and #5 (5, Figure 2-2) and leave the rest closed until the material pump builds enough pressure and stops stroking. This will signal that the pump is in NEUTRAL.

4. With the pump in NEUTRAL, open valve #4 (4, Figure 2-2) to operate the hand wand. This will pressurize the hose and fill it with material.

5. Open the ball valve on the hand wand (8, Figure 2-2) and start spraying with the sealing material. If two hand wands are used, they may be turned on and off independently of each other.

6 While the operator sprays, the helper should be controlling the flow of the material into the pump assembly. To achieve the desired flow, turn the air regulator control knob (7, Figure 2-2) clockwise until the flow is too high and then back off on the speed of the pump by turning the knob counterclockwise to achieve the desired spray. (This procedure eliminates extra wear on the pump.)

NOTICE

At no time should the pressure on the hand wand be controlled by restricting the material flow with the hand wand's valve. This can cause premature wear on the ball valve. The hand wand needs to be either fully open or fully closed.

7. To stop spraying for a short time, shut OFF the ball valve #8 on the hand wand. The pump will go into NEUTRAL. If both hand wands are being used, the pump will go in NEUTRAL when both hand wand ball valves are closed.

8 For a long idle period (spraying will be resumed), or when finished using the hand wand(s) for the day, such as when a job is finished, close ball valves #1 (1, Figure 2-2) and #5 (5, Figure 2-2). Return the hose and hand wand to their resting place on the side of the machine. (If all seal coatings have been applied with sand mixtures, the only time it will be necessary to flush out the complete system with water is if the machine will sit idle for a prolonged period of time, or for winterization. (See "Winterizing Procedure" on page 5-18 in *Section 5, Maintenance*.)

NOTICE

Anytime there is a change in the compound being used, the material pump needs to be adjusted with the air regulator (7, Figure 2-2). Do not set the speed control and leave it in the same position as it could over-pressurize the pump causing it to wear out prematurely. The material pump is the most important part of the machine. When operated correctly, its lifetime will be maximized.

⚠CAUTION

As a general rule, when all ball valves are closed and sealing operations—hand wand or spray bar—are stopped for any length of time, depressurizing the system is recommended. Open recirculation ball valve #6 (6, Figure 2-5) to relieve the pressure and return it back to closed. This is very important. The plumbing system will hold pressure indefinitely. This could cause a weak or worn hose to burst and spray sealer.

Also, if your spray—hand wand or spray bar—starts to pulsate, depressurize the system and check the surge tank for sand buildup. If a sand buildup exists, the system needs to be flushed with water. There is a four-inch plug on the bottom of the surge tank and a 2" plug on the top for this purpose.

Material Loading Operation

⚠CAUTION

ALWAYS wear or use the proper safety items required for your personal protection, including boots, protective clothing, gloves, hat, and safety glasses.

1. Start with all ball valves closed.

2. Attach a 15-foot (4.57 meter) quick connect hose to the suction port (at ball valve #2 Figure 2-2), place the other end in the drum or container of sealer.

NOTE:

A standard 15-foot hose with quick connects is available as an option from the **NEALCO™** *parts and service department. See your* **NEALCO™** *dealer. Hoses of any length with quick connects on each end can be custom-ordered.*

3. Open ball valve #2 (2, Figure 2-2) and ball valve #6 (6, Figure 2-2).

4. Start the machine's compressor and turn valve #3 (3, Figure 2-2) to the ON position.

5. When material loading is complete, turn valve #3 to the OFF position, shut off ball valves #2 and #6, and turn off the machine's compressor.

6. Disconnect the suction hose and flush it clean with water using a garden hose.

PREPARING SEALCOAT MIX

The following recommendations are presented to help avoid problems when mixing sealer, water, latex additives, and sand.

NOTICE

Use of any sealer or sand not listed may void warranty.

Proper Materials

- Sealer: Use only coal tar or an asphalt emulsion that meets Federal Specification RP-355E.

- Water: Use only in the percentage as recommended by the manufacturer on the container.

- Additives: Select a recognized name brand when choosing a rubber latex additive.

- Sand: Use only Silica Sand or Black Beauty 30/60 U.S. Sieve. These are specified because the equipment is capable of handling 20-sieve sand. The 30/60-sieve sand will, however, allow more variations in mix design. Using 50/100-sieve is too fine. The individual particles will not separate and they do not get properly coated with sealer.

NOTICE

Be advised that Black Beauty 30/60 is very coarse and has sharp edges, and it may cause the material pump to wear faster.

Proper Mixing Sequence

⚠WARNING

Always pour the ingredients through the safety/dispersal grate in the top of the tank during this procedure. Do not open the grate, insert tools into, or reach inside the tank while turning the agitator. Serious injury could result.

When starting to use additives, NEALCO™ recommends that you mix a small test batch as follows:

1. Put 50 gal. (189.3 l) of sealer in the tank with the agitator turning.

2. Add water in the quantity recommended on the sealer container and mix thoroughly.

3. Determine the amount of latex additive required. Mix latex additives in a one-to-one ratio (1:1) with water before mixing with sealer.

4. Slowly pour the diluted additive into the tank with the sealer mix while agitating.

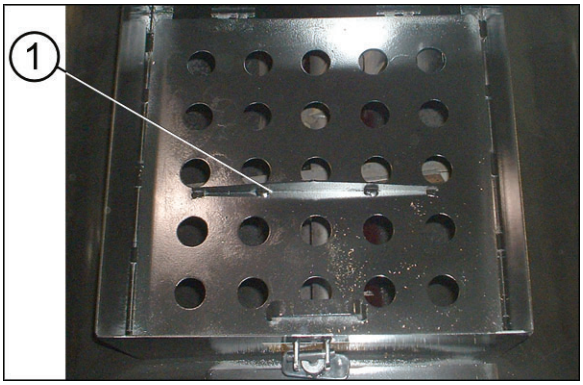


Figure 2-3

5. Add the desired quantity of sand slowly to allow for thorough mixing. Allow up to 1 minute for the sand to flow in through the grate. The grate has a sand bag splitter (1, Figure 2-3) incorporated into its design for ease of adding sand to the mix. Drop the bag on the splitter, then pick up the bag at both ends to allow the sand to slowly sift through the holes into the tank.

6. Drain 5 gal. (18.9 l) from the application and pour it through a screen. Use normal house screening. If you accumulate large lumps of mix on the screen, the sealer and additives are not compatible and should not be used.

Compatibility is a common problem when mixing latex additives with sealer. Sometimes the problem is obvious at the outset. Other times it may not show up until after the application or, worse yet, not until the seal coat has been on the surface for many months. Problems may include difficult

application, slow drying, tacky surface after drying, gray or blotchy color after drying, and flaking or peeling due to poor bond. Latex additives may tend to hide problems associated with an inferior sealer until later.

Several remedies exist regarding mix design:

- Stir the sealer in the original container and then strain the sealer as it goes into the tank to remove lumps.
- Try another brand of sealer.
- Stop using the additive.
- Try another brand of additive.
- Reduce the amount of sand if it appears to be overloaded.
- Make sure percentages of ingredients are correct according to manufacturers' recommendations.
- Consult directly with manufacturers for recommendations.
- Keep records of what works and what doesn't to avoid repeating problems.

Remix Procedure

Another problem related to sand mix designs is the clogging of the pump filter, plumbing, hand wand applicator, and spray tips. This is usually caused by sand settling out of the sealer. If the machine is to sit for a long period, the tank and plumbing should be flushed of mix at shut down. (For flushing procedure, see "Winterizing Procedure" on page 5-18 in *Section 5, Maintenance*, stopping short of adding the anti-freeze/water mixture.)

However, if the mix has been sitting in the tank overnight, use the following remix procedure at startup in the morning to avoid problems:

1. Start the air compressor.
2. Once the material is remixed, open ball valve #1 (1, Figure 2-2) to allow the mixture to flow into the plumbing.
3. Open recirculation ball valve #6 (6, Figure 2-2) and valve #3. The mixture is now pumped through the pump and plumbing and back into the tank. The separated sealer and sand is now replaced throughout the system with the thoroughly mixed material.
4. Allow the pump, while cranking, to run in the recirculation mode for at least 5 -10 minutes to remix all sand back into the sealer.

5. Shut OFF recirculation ball valve #6 (6, Figure 2-2) and valve #3.

6. Remove the spray nozzle from the tip of the hand wand. Introduce the fresh mix through the hose and wand by opening the hatch (see Figure 2-3) at the top of the machine, placing the wand into the hatch opening letting it catch in one of the holes in the inner hatch cover, opening the hand wand ball valve (1, Figure 2-2) and turning valve #3 back ON.

7. Run the remixed material through the hose and wand for at least one minute until all separated sealer and sand is replaced with the thoroughly mixed material.

8. Shut off the hand wand ball valve, remove the wand from the hatch, close the hatch, and reinstall the spray nozzle on the tip of the hand wand.

The machine is now ready for use. Using the procedure will help eliminate material pump problems and spray tip clogging. NEALCO™ recommends that the seal coat machines be remixed using this procedure at a minimum of every three days if a sand mixture remains in the machine.

NOTICE

If material is left in the tank for an extended period of time it may be necessary to rock the agitator forward and backward in order to free the agitator blades from the settled mix.

If all seal coatings have been applied with sand mixtures, the only time it will be necessary to flush out the complete system with water is if the machine will sit idle for a prolonged period of time, or for winterization. (Refer to *Section 5, Maintenance* for the winterization procedure.)

NOTICE

IMPORTANT: Do not wash out the plumbing and pump with water until remixing has been performed to get the sand back in suspension in the sealer. ALWAYS flush the system with sealer and NO sand first, then flush with water. The sealer acts as a lubricant in the pump and plumbing. Damage occurs when water is introduced. Water separates the sealer and the sand with the result that the sealer is flushed out and the abrasive sand remains to be circulated in the water. This creates excessive wear in the pump and plumbing, usually requiring major repairs.

CLEANUP

After every use, the DP-300S and DP-300T Sealcoat System machine should be hosed down with water to remove any splashed sealcoating material.

GENERAL IDENTIFICATION

Type of machines: DP-300T Sealcoat Trailer System
DP-300S Sealcoat Skid System
Manufacturer: Nealco™ Equipment, LLC
PO Box 337
Shippensburg, Pennsylvania 17257

DP-300S AND DP-300T SYSTEMS

Model	Length Overall	Width Overall	Height Overall	Weight	Capacity	Brakes	Axles (GVW)
DP-300T	146 in.	75 in.	73 in.	1,940 lbs.	300 gals.	electric	7,000 lbs.
DP-300S	103 in.	51 in.	56 in.	1,300 lbs.	300 gals.	N/A	N/A
DP-300ET	196 in.	75 in.	73 in.	2,200 lbs.	300 gals.	electric	7,000 lbs.

Jenny Air Compressor			
Model	**HP**	**Tank Gallon**	**Drive**
G8HGA-8P	8	8	Honda GX Gasoline Engine Recoil Start

Models DP-300S & DP-300T	
Trailer	Pintle (military-style) hitch, 16 in. wheels, heavy duty jack, lighting system, single axle.
Air Compressor	Briggs & Stratton® Vanguard™ engine w/ electric start. 2 yr. warranty.
Tank	Steel tank w/ 24 in. manway. Inner lid and safety hatch.
Pumping System	E4 Versa-matic Dual Diaphragm pump with 1-1/2 in. inlet and 1-1/4 in. outlet.
Agitation	NEALCO™'s offset paddles cranked forward or reverse by 3:1 ratio hand crank.
Hand wand	75 feet of hose and a 6 ft. hand wand.
Optional	• 2nd hose and handwand • Hose reel (spring loaded/self-retracting) • 15-foot suction hose • 2-5/16 in. ball hitch • Brush box • 4 ft. deck extension for trailer model

TROUBLESHOOTING

Cavitation

Cavitation is a hydraulic condition which can exist in any type of pump. It is primarily a situation in which the pump is discharging less liquid than its rated capacity due to a reduction or lack of liquid supply to the pump intake. “Exessive suction lift, insufficient NPSH, or operation at too high a speed are common causes of cavitation. Pitting, vibration, and noise are common troubles stemming from cavitation. While severe cavitation is usually accompanied by excessive noise and damage to the pump, mild cavitation may produce nothing more than a small reduction in pump efficiency and moderate wear of pump parts.”

Diaphragm pumps, like other pumps, “do not suck in liquids; they reduce pressure in the suction chamber, and external pressure,usually atmospheric, pushes the liquid into the pump. For any pump with a given size suction line, capacity or maximum speed is fixed by the existing net positive suction.” A diaphragm pump can be particularly vulnerable to a “starved suction” condition because it is generally pumping a viscous, solid-laden slurry. In fact, most cases of low flow rates can be traced to starved suction conditions due to either too high a static lift, too long a suction line, or a combination of both.

Pump: Versa-matic

The pump will not run, or runs slowly:

1. Examine the air inlet screen for dirt.
2. Check for a sticking air valve. Remove air valve from the pump and flush with solvent to remove dirt and debris. Check the spool and sleeve for nicks and scratches. If the spool is shiny instead of dull black, the spool and sleeve may be worn out and may need to be replaced. Clean all ports and airways and replace worn gaskets and O-Rings.
3. Check pilot shaft and main shaft for scoring and scratches; replace if needed. Replace the pilot shaft and main shaft O-Rings if they are worn, flat or torn.

The pump runs, but little or no material flows:

1. Check for pump cavitation, slow the pump speed down to match the thickness of the material being pumped.
2. Look for sticking ball checks. If the material being pumped is not compatible with the ball material, the elastomer may swell. Replace the balls and seats with a compatible elastomer type.
3. Make sure all the suction line fittings and connections are airtight.

Air bubbles in pump discharge:

1. Look for ruptured diaphragm.
2. Check for suction leaks in pump manifolds and piping.

Material comes out of the pump air exhaust:

1. Inspect the diaphragm for rupture.
2. Check the tightness of the diaphragm plates to the pump shaft.

Air Compressor

Compressor not making enough air

1. Drain air tank and measure pump up time. Compare with proper time for compressor model (see factory guide). If time is OK, compressor may be too small for application. Increasing operating pressure will exaggerate the problem.
2. Test for leaks in air lines, tank, or compressor fittings. Soap suds solution works well.
3. Clogged filter element—remove, clean or replace. Intake air must be free of contamination such as paint mist.
4. Hot air blows out of intake. Intake valves not sealing. Remove and clean. Polish disc on fine emery cloth (#400). Replace worn parts.
5. Check valve or discharge tubing clogged. Clean or replace.

Excessive oil consumption—measure oil consumed per hour of operation

1. Clogged air intake filter. Clean or replace.
2. Inferior or dirty oil. See recommendations in instructions.
3. Piston rings worn or sticking. Remove rings, clean grooves. Check ring wear by pushing ring into cylinder bore. New ring end gap is approximately .007 to .017 inches. Operation is OK to .060. Stagger ring gaps when installing.
4. Deep scratch on cylinder wall. Caused by lack of oil or dirt in oil. Hone (.015 maximum on diameter) or replace.
5. Oil in discharge air. Some oil is always present. Clean accumulation in air lines and tank. Add air line filter or clean element.
6. Head or valve plate gasket leaking between cylinders. Remove head and check.
7. Compressor with constant running control unloaded more than 60% of the time. Electric compressors consider start-stop or dual control. With gas compressors allow unit to cycle.

Milky oil in reservoir

1. Normal result of water mixing with oil in tank or possibly in crankcase. Change oil and/or drain tank. Move compressor or pipe intake to lower humidity source or cooler areas. Increase intake pipe one size for every three feet—keep short.
2. Water is a normal by-product when compressing moist air. A compressor does not “make water.” Cooler and dryer intake air or use of aftercooler/dryer devices on discharge air will reduce “water.”

Noise, knock or vibration

1. Assembly vibrating. See mounting instruction.
2. Flywheel wobbles. Cracked flywheel or bent shaft. Replace.
3. Flywheel or pulley loose. Remove, apply loctite on shaft. Re-install with new key.
4. Loose or worn connecting rod or piston pin. Tighten or replace.
5. Pressure switch or magnetic starter chatter. Adjust switch for greater differential or replace.
6. Loose vee belt. Adjust tension on slotted platform.
7. Foreign matter (carbon, dirt, piece of gasket) on top of piston. Remove cylinder head and check. To inrease head clearance, add crankcase gaskets....Not head gaskets.

Runs hot—head and discharge line normally are hot enough to burn if touched

1. Compressor operating in excess of rated discharge pressure. Reset pressure control.
2. Poor ventilation. Provide cooler location. Allow minimum 6" flywheel clearance.
3. Incorrect rotation. Check flywheel arrow. Reverse motor.
4. Discharge valve or head gasket leak. Remove and clean valve. Replace. (Head bold 22/25 ft. lb. torque)
5. Restriction in discharge line or check valve. Clean or replace.
6. Low Oil. Check!!!

Compressor "Slowdown" or "Froze Up"

1. Check that supply voltage matches motor, i.e., 115 volt supply with motor connected for 230 volts or 208 supply with 230 volt motor.
2. Measure actual voltage at the motor while the compressor is under load (starting up or at high pressure). If voltage is more than 10% below motor nameplate rating, relocate compressor closer to main switch panel and/or provide heavier wiring. Check with electric power company.
3. Vee belt slipping. Adjust tension by moving motor. Clean oil from belt.
4. Operating pressure set higher than design pressure. Reset control.
5. If flywheel cannot be turned by hand (drain tank to eliminate back pressure), check oil level. If "frozen" condition exists after cooling down and adding oil, diasassemble compressor and replace damaged components. After compressor "run in" period, freezing is caused by lack of adequate clean lubrication.
6. Gas Engine Driven Compressors: If engine stalls during acceleration, increase engine idle speed.

Material

Material has no pressure

1. Filter basket is clogged. Clean strainer basket in material filter.
2. Recirculation ball valve not sealing. Replace ball valve (lower ball assembly).
3. Foreign material lodged under upper or lower check balls in material pump. Disassemble material pump. Remove foreign material.
4. Upper or lower check balls and/or seals badly worn. Disassemble material pump. Inspect, replace as necessary.

The NEALCO™ Sealcoat Systems have been carefully designed and manufactured to provide the utmost in dependable service. To obtain the best results and keep the machine operating efficiently, read and follow the information in this section.

The machine has been factory tested and lubricated with initial settings carefully made. However, it is recommended that the entire machine be thoroughly inspected before starting to correct any problems resulting from transit. Additionally, the machine should only be operated and serviced by someone properly instructed. You should read this manual, the engine manual, and any other information supplied before attempting operation or servicing.

NOTICE

Failure to maintain the DP-300S and DP-300T machine by this maintenance schedule could void the warranty. A sound maintenance schedule will keep the machine in good working condition, and also prevent injuries.

Failure to use and maintain the engine following the manufacturer's operating instructions and maintenance schedule—changing oil, cleaning air filter, etc.—could void the engine's warranty.

GENERAL MAINTENANCE INFORMATION

To prevent minor irregularities from developing into serious conditions, several services or checks are recommended at periodic intervals. The purpose of these services is to ensure the uninterrupted and safe operation of the machine.

Before doing any maintenance work, ensure that the following instructions are followed:

1. The machine should be parked on firm, level ground and the wheels should be chocked.

2. Make sure that the compressor is shut down and allowed to cool.

3. Thoroughly wash all fittings, caps, plugs, etc., with a nonflammable, nontoxic cleaning solution before servicing, to prevent dirt from entering the compressor or pump and pumping system while performing the service.

Handling Fluids and Oil Filters

1. When draining fluids, ensure that adequate sealable containers are available and that every care is taken to prevent spillage.

2. Always make sure that waste fluids are disposed of in an environmentally safe manner following applicable local regulations.

3. Always make sure that used filters are stored in secure containers and disposed of in an environmentally safe manner following applicable local regulations.

MAINTENANCE SCHEDULE

The “Periodic Maintenance Schedule” on page 5-3 shows those items that require regular service and the interval at which each service should be performed. A regular service program should be geared to the items listed under each interval. These intervals are based on average operating conditions. In the event of extremely severe, dusty, or wet operating conditions, more frequent maintenance than specified may be necessary.

PERIODIC MAINTENANCE SCHEDULE

ACTION AND INTERVAL	DO THE FOLLOWING:
Note: For complete information about air compressor service recommendations, refer to the compressor's manufacturer's Operation and Maintenance Instruction manual for additional information.	
Check daily	1. All fluid levels (engine oil, fuel). 2. Clean around the compressor engine's muffler, linkage, springs and belts. 3. Entire machine for leaks, loose bolts, and general working condition. 4. Engine air cleaner cap for dust build-up. 5. Allen head screws on chain sprocket at the end of the agitator shaft. *(Note: When the machine is new, vibration could cause the sprocket's Allen head screws to loosen until they become "set." When daily loosening is no longer detected, check weekly.)* 6. Tire pressure (65 psi) on sealcoat trailer system. 7. Electrical system—electric brakes, taillights, integrity of emergency breakaway switch on trailer and electric brake controller in towing vehicle.
Weekly	1. Examine air compressor filter elements and if dirty, remove and tap filters on hard surface to remove dust. Replace if necessary. 2. Check oil level in air compressor and if necessary add sufficient oil to bring to full level. Keep compressor clean for efficient operation.
Monthly	1. Check and tighten all bolts on air compressor as required. Check air connections and joints for leaks—tighten if necessary.
Annually	1. Repack wheel bearings on sealcoat trailer system. 2. Inspect brake linings for wear and replace if necessary on sealcoat trailer system. 3. Jenny Ultimate Blue™ compressor oil should be changed a minimum of once a year or every 2000 hours of use. Operation in extremely dirty environments would cause oil and air filter to require more frequent changes.
Before storage	1. Drain all gasoline from the engine's fuel tank, fuel line and carburetor (or add a fuel stabilizer to the gasoline then run engine for a few minutes).

NOTICE

The material pump does not need to be flushed each day after use. However, when necessary to clean the pump, ALWAYS flush with sealer WITHOUT sand first, then flush with water. Flushing with only water will cause the sand and sealer to separate. The sealer would be flushed out leaving the abrasive sand to circulate with the water, causing damage to the pump.

ROUTINE MAINTENANCE—AS REQUIRED

Refer to the Jenny Air Compressor Operation and Maintenance Manual at the back of this manual.

WINTERIZING PROCEDURE

Refer to *Section 2, Operation*, Figure 2-2, for the location of the ball valves, and to the operating instructions to determine which valves to open and close for the procedures described below.

NOTICE

The DP-300S and DP-300T Sealcoat System machines need to be winterized in most parts of the United States. It is VERY important that no material be left in the machine if temperatures approach freezing. Damage to the plumbing, filter receptacle, and material pump can occur. For temperatures below 10° F (-12.2 C), this machine should be stored indoors.

For this procedure you will need:

- 2-inch x 15-inch (50.8 mm x 4.57 m) suction hose with quick connects on both ends.
- 20 gal. (75.7 l) of Federal Grade (RP335e) sealer with no sand or water added.
- 100 gal. (379 l) of water.
- Approximately 5 gal. (18.9 l) of 50/50 anti-freeze/water mixture.
- Garden variety water hose.

1. Start the compressor and pump approximately 20 gallons (75.7 liters) of sealer through the machine's plumbing following the "Material Loading Operation" on page 2-11 in *Section 2, Operation*. Introducing raw sealer acts as a lubricant for any sand that may have settled in the plumbing system. Sand must be removed from the system first. Pump out the sealer and dispose of in accordance with all applicable local, state, and federal regulations. Stop the compressor.

2. Put approximately 100 gallons (379 liters) of water in the tank, restart the compressor, and agitate at 15-20 revolutions per minute for about 10-15 minutes to clean the inside of the tank.

3. Circulate the water through the plumbing system for two to three minutes, then discharge through the hand wand assembly to flush out sealing mixture residue. Make sure that valves #1, #5, and #6 are open. Valve #5 is particularly important to allow water to enter and flush the surge tank. Contrary to operating instructions in *Section 2, Operation*, during flushing it is advisable to have valves #5 and #6 open at the same time.

4. Drain the tank completely by removing the 2-inch plug on the bottom rear of the tank. If necessary, use the garden hose through the tank's top hatch to make sure all residue is flushed through the drain. Replace the plug.

5. Remove the tee bolt from the top of the material filter canister (adjacent to ball valve #2) and remove the cover. Remove the plug from the bottom of the canister to drain all water. Flush clean with fresh water using the garden hose. When all the water has drained, replace the drain plug, and replace the cover and tee bolt.

6. Now that the machine is completely clean, draw the anti-freeze/water mixture into the plumbing following the steps under "Material Loading Operation" on page 2-11 in *Section 2, Operation*. Remove the hand wand and a coil of hose from their resting place on the side of the machine. Open the hand wand ball valve until anti-freeze discharges. Close the hand wand ball valve and continue pumping until the material pump goes into NEUTRAL. Turn the engine off. The material pump and plumbing are now winterized. Replace the hose and hand wand to their place on the side of the machine, the safest place to store them during long periods of inactivity.

7. Store the machine in a safe place, preferably heated. If it cannot be stored inside, wrap the engine and material pump in plastic and tape securely to protect them from winter's elements. Alternately, consider covering the entire machine with heavy gauge plastic sheeting secured with tape and/or heavy cord.

NOTICE

In the spring, remember to flush out all anti-freeze before using the DP-300S or DP-300T Sealcoat System machine.

VERSA-MATIC PUMP

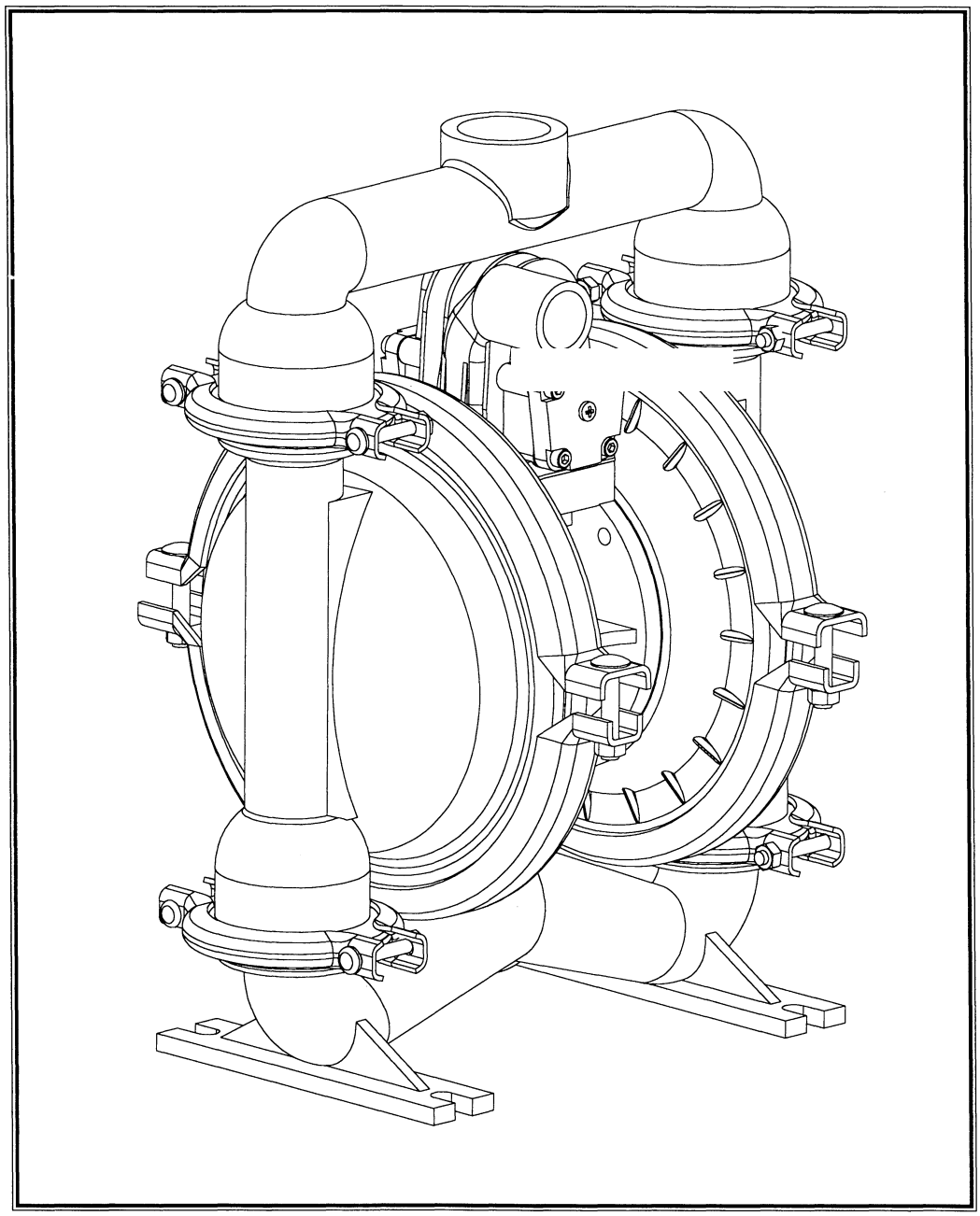
IDEX CORPORATION

Member of Hydraulic INSTITUTE

VM PUMP™

VERSA-MATIC® PUMP

Operating Instructions



Model E4 Elima-Matic Pump

OI-E4, 10/01 Revised

DECLARATION OF CONFORMITY

DECLARATION DE CONFORMITE • DECLARACION DE CONFORMIDAD • ERKLÄRUNG BEZÜGLICH EINHALTUNG DER VORSCHRIFTEN
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EF-OVERENSSTEMMELSESERKLÆRING • VAATIMUSTENMUKAISUUSVAKUUTUS • SAMSVARSERKLÄRING
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VERSA-MATIC®
IDEX AODD, Inc.
800 North Main Street
Mansfield, OH 44902 • USA

Tel: 419-526-7296
Fax: 419-526-7289

VERSA-MATIC®

PUMP MODEL SERIES: E1 SERIES, E2 SERIES, E3 SERIES, E4 SERIES, E5 SERIES, E7 SERIES, E8 SERIES AND U2 SERIES

This product complies with the following European Community Directives: **98 / 37 / EC**
Ce produit est conforme aux directives de la Communauté européenne suivantes:
Este producto cumple con las siguientes Directrices de la Comunidad Europea:
Dieses produkt erfüllt die folgenden Vorschriften der Europäischen Gemeinschaft:
Questo prodotto è conforme alle seguenti direttive CEE:
Dir produkt voldoet aan de volgende EG-richtlijnen:
Denna produkt överensstämmer med följande EU direktiv:
Versa-Matic, Inc., erklærer herved som fabrikant, at ovennævnte produkt er i overensstemmelse med bestemmelserne i Direkktive:
Tämä tuote täyttää seuraavien EC Direktiivien vaatimukstet:
Dette produkt oppfyller kravene til følgende EC Direktiver:
Este produto está de acordo com as seguintes Directivas comunitárias:

This product has used the following harmonized standards to verify conformance: **EN 809**
Ce materiel est fabriqué selon les normes harmonisées suivantes, afin d' en garantir la conformité:
Este producto cumple con las siquientes directrices de la comunidad europa:
Dieses produkt ist nach folgenden harmonisierten standards gefertigtworden, die übereinstimmung wird bestätigt:
Questo prodotto ha utilizzato i seguenti standards per verificare la conformita´:
De volgende geharmoniseerde normen werden gehanteerd om de conformiteit van dit produkt te garanderen:
För denna produkt har följande harmoniserande standarder använts för att bekräfta överensstämmelse:
Harmoniserede standarder, der er benyttet:
Tässä tuotteessa on sovellettu seuraavia yhdenmukaistettuja standardeja:
Dette produkt er produsert i overenstemmelse med fløgende harmoniserte standarder:
Este produto utilizou os seguintes padrões harmonizados para varificar conformidade:

AUTHORIZED/APPROVED BY:
Approuve par:
Aprobado por:
Genehmigt von:
approvato da:
Goedgekeurd door:
Underskrift:
Valtuutettuna:
Bemyndiget av:
Autorizado Por:

David Roseberry
Dave Roseberry
Engineering Manager

DATE: March 04, 2009
FECHA:
DATUM:
DATA:
DATO:
PÄIVÄYS:

CE

Specifications and Performance

Volumes indicated on charts were determined by flow meter tests.

Versa-Matic Model E4

Flow Rate Adjustable to.....0-70 gpm (0-265 lpm)

Port Size:

Inlet.....1.5" NPT (BSP)

Discharge.....1.25" NPT (BSP)

Air Inlet.....1/2" NPT

Air Exhaust.....3/4" NPT

Suction Lift.....15' (4.57m) Dry/ 25' (7.62m) Wet

Teflon.....10' (3.05m) Dry/ 20' (6.09m) Wet

Max. Particle Size (Diameter)..... 0.1875" (4.76mm)

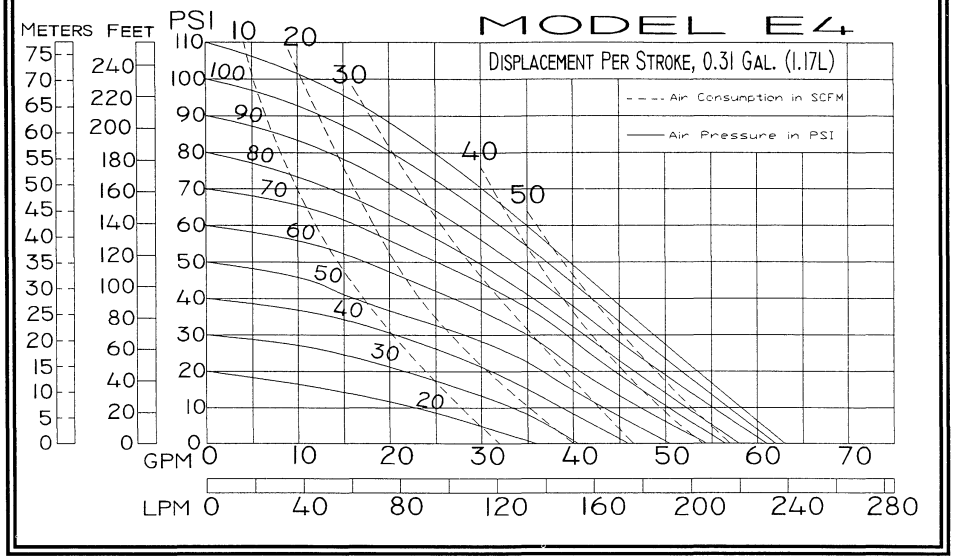
Shipping Weights

Aluminum.....41 lbs (18.61 kg)

Cast Iron, Hastelloy C, Stainless.....57 lbs (25.87 kg)

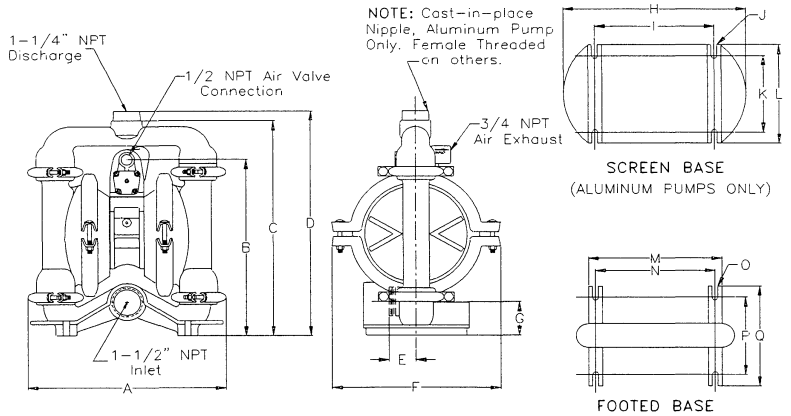
Caution: Do not exceed 125 psig (8.5 bar) air supply or liquid pressure.

Teflon® is a registered tradename of E.I. DuPont



Note:

For E4 pumps fitted with Tef-Matic™ diaphragms, reduce water discharge figures by 20%.



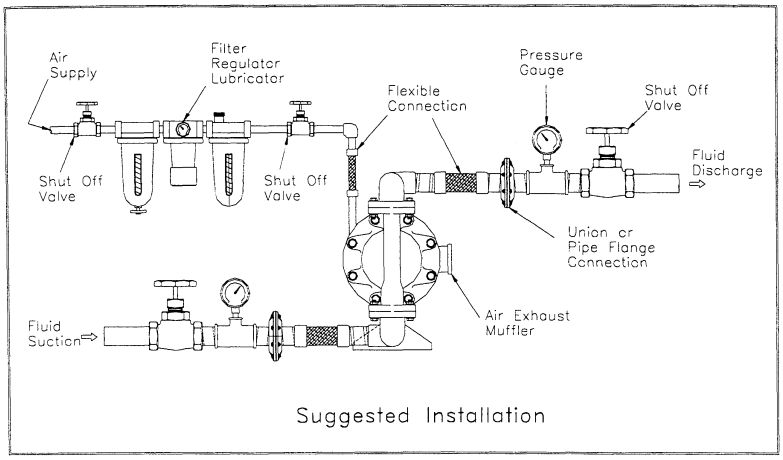
DIMENSIONS MODEL E4		
ITEM	INCHES	METRIC MM
A	14.25	361
B	13.5	343
C	16.75*	425*
D	18**	457**
E	2	51
F	11.5	292
G	2.37	60
H	13.25	337
I	8.75	222
J	0.437 WIDE SLOT	11 WIDE SLOT
K	6	152
L	7.625	194
M	10	254
N	8.75	222
O	0.437 WIDE SLOT	11 WIDE SLOT
P	6	152
Q	7	178

* Cast Iron, Hastelloy C and Stainless Steel Pumps

** Aluminum Pumps

VERSA-MATIC PUMP

6017 Enterprise Drive
Export, PA 15632
Phone (724) 327-7867
Fax (724) 327-4300



Suggested Installation

Caution
Do Not Exceed
125 psig air supply pressure

Installation

The E4 pump comes with a footed base for easy mounting in permanent installations. The pump should be mounted in a vertical position. In permanent installations, the pump should be attached to plant piping using a flexible coupling on both the intake and discharge connections to reduce vibration to the pump and piping. To further reduce vibration, a surge suppresser next to the pump may be used.

Suction pipe size should be at least 1 ½ inches in diameter or even larger if highly viscous fluid is to be pumped. If suction hose is used, it must be of a non-collapsible reinforced type. Discharge piping should be of at least 1 ¼ inches. It is critical, especially on the suction side of the pump, that all fittings and connections are air tight or pumping efficiency will be reduced and priming will be difficult.

The air supply line should be at least ½ inch diameter. Make certain the supplying line and compressor are capable of supplying the required pressure and volume of air to operate the pump at the desired flow rate. The quality of the compressed air source should be considered. Air that is contaminated with moisture and dirt may result in erratic pump performance and increased maintenance cost as well as frequent process "down time" when the pump fails to operate properly.

Pump Operation

The pump is powered by compressed air. Compressed air is directed to the pump air chamber by the main air valve. The compressed air is separated from the fluid by a membrane called a diaphragm. The diaphragm in turn applies pressure on the fluid and forces it out of the pump discharge. While this is occurring, the opposite air chamber is de-pressurized and exhausted to atmosphere and fluid is drawn into the pump suction. The cycle again repeats, thus creating a constant reciprocating action which maintains flow through the pump. The flow is always in through the bottom suction connection and out through the top discharge connection. Since the air pressure acts directly on the diaphragms, the pressure applied to the fluid roughly approximates the air supply pressure supplied to the main air valve.

Trouble Shooting

The pump will not run, or runs slowly:

1. Examine the air inlet screen for dirt.
2. Check for a sticking air valve. Remove air valve from the pump and flush with solvent to remove dirt and debris. Check the Spool and Sleeve for nicks and scratches. If the spool is shiny instead of dull black, the spool and sleeve may be worn out and may need to be replaced. Clean all ports and airways and replace worn out gaskets and O-Rings.
3. Check Pilot Shaft and Main Shaft for scoring and scratches; replace if needed. Replace the Pilot Shaft and Main Shaft O-Rings if they are worn, flat or torn.

The pump runs, but little or no material flows:

1. Check for pump cavitation, slow the pump speed down to match the thickness of the material being pumped.
2. Look for sticking ball checks. If the material being pumped is not compatible with the ball material, the elastomer may swell. Replace the balls and seats with a compatible elastomer type.
3. Make sure all the suction line fittings and connections are air tight.

Air bubbles in pump discharge:

1. Look for ruptured diaphragm. **2.** Check for suction leaks in pump manifolds and piping.

Material comes out of the pump air exhaust:

1. Inspect the diaphragm for rupture. **2.** Check the tightness of the diaphragm plates to the pump shaft.

Safety Warnings

This equipment should only be used by experienced professional mechanics. Observe all safety warnings. Read all safety warnings and operating manuals before using or repairing this Air Operated Diaphragm Pump. (A.O.D. pump)

General Safety

This equipment may generate fluid pressures equal to the air supply pressure. Therefore DO NOT exceed the recommended air supply pressure. 100 psi (6.8 bar) for plastic pumps, 125 psi (8.5 bar) for metallic pumps.

ALWAYS wear safety glasses when using power tools to repair this equipment.

When the pumping system contains dangerous fluids wear protective gloves, glasses etc. when working on or around this equipment.

ALWAYS shut off the air supply and disconnect it from the pump before performing maintenance or repair to the pump.

Do Not put your face or body near the pump air exhaust while the pump is operating.

Bleed all pressure from discharge and suction lines before disconnecting the fluid suction or fluid discharge lines from the pump.

DO NOT operate a pump that is leaking, damaged, corroded or otherwise unable to contain the internal fluid pressure.

ALWAYS make sure safety shut off valves, regulators, pressure relief valves, gauges etc. are working properly before starting the pump.

DO NOT pump incompatible fluids through the pump. Consult your distributor or the factory if you are not sure of compatibility of fluids with the castings and elastomers.

Versa-Matic pumps are designed to operate on compressed air. Other compressed gases have not been tested and may be unsafe to use in A.O.D. pumps.

Before starting a pump make certain the discharge point of the piping system is clear and safe and all person have been warned to stand clear.

Equipment Misuse Hazard

General Safety

Any misuse of this equipment such as over pressurization, modifying parts, pumping incompatible chemicals and fluids, using worn or damaged parts or using gasses other than compressed air to power the pump is not recommended. Any of these circumstance could result in splashing or spraying into the eyes, skin or possible serious bodily injury, fire, explosion or property damage.

Over pressurization

Never exceed the operating pressure recommended for the model pump being used.

Noise

Wear Proper Ear protection when working or standing near A.O.D. pumps. IT IS recommended that a Air Exhaust Muffler is used on this equipment at all time.

Installation Hazards

Do not submerge the pump in liquids that are incompatible with the wetted or non-wetted parts of the pump. If installing in a submerged location extend the air exhaust port above the liquid surface with suitable pipe or hose.

Route exhaust line to safe location away from people and install a Air Exhaust Muffler.

Pump Diaphragm Failure

A.O.D. pumps utilize a elastomeric membrane to separate the pumping liquid from the air supply. When this membrane ruptures pumping fluid may be expelled from the air exhaust port. Always pipe the air exhaust port to a safe location or suitable container if dangerous or volatile liquids are being pumped.

Installation

Never allow the piping system to be supported by the pump manifolds or valve housing. The manifolds and valve housings are not designed to support any structural weight and failure of the pump may result. The use of flexible piping connections is highly recommended.

Temperature limits

Do not exceed the recommended operating temperatures of the pump or pump failure may result.

Moving Parts Hazard

The diaphragm plates (sometimes referred to as piston plates) located inside the pump on either side of the main shaft move when air pressure is supplied to the pump. Therefore, Never attempt to operate the pump with the liquid chambers removed. Moving parts inside the pump can pinch or seriously injure your fingers or other body parts.

Fire or Explosion Hazard

Static electricity can be created by the flow of fluid through the pump or by the reciprocating action of A.O.D. pumps. If the pump is not properly grounded, sparking may occur, and the system may become hazardous. Sparks can ignite fumes or vapor and cause an explosion.

If you experience static sparking or even a slight shock when using the pump do not continue to operate the pump until the pump is properly grounded.

Proper Grounding

Pump, Valves, Discharge and supply lines as well as containers must be grounded. These items must be grounded when handling flammable fluids and when static electricity discharge is a hazard.

1. To ground plastic pumps connect a ground wire to all metallic clamps as well as the air valve body & piston assembly. The ground wire should be connected to a suitable ground location. (figure 1)
2. To ground metallic pumps, connect a ground wire to any accessible point of attachment such as clamp band bolt or mounting base.

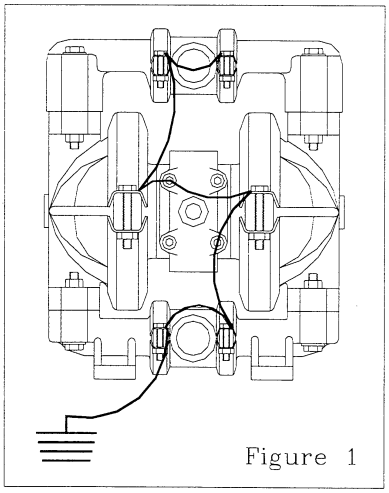


Figure 1

Sound Level Ratings, dB(A)

The following table lists the sound level ratings of Versa-Matic Pumps equipped with factory installed Air Exhaust Mufflers. The readings were obtained with a Pacer Industries model SL-120, sound level indicator "A" scale. Readings were made at a distance of 1 meter from the pump and a height of 1.6 meters above the floor. It is assumed the pumps will be installed at floor level.

Pump Series	**dB(A) reading**
E5, 1/2" pump	71.7 dB(A)
E1, 1" pump	76.5 dB(A)
V4, 1-1/4" pump	76.5 dB(A)
V2, 2" pump	74.3 dB(A)
V3, 3" pump	67.1 dB(A)
E2, 2" pump	74.3 dB(A)
E3, 3" pump	67.1 dB(A)
E4, 1-1/4" pump	76.5 dB(A)

Temperature Limitations

Maximum Temperature limitation are based on mechanical stress only. Certain chemicals will reduce the maximum safe operating temperatures of A.O.D pumps. Consult your dealer or Chemical Resistance guide for compatibility and temperature limits.

Metallic Pumps

Metallic pumps can operate past 212°F (100°C). However if you are operating above these limits, consult the factory for assistance.*

Plastic Pumps

Plastic pumps can operate within the following limits:*

Polypropylene: 32°(0°C) to 175°F(79°C)
PVDF (Kynar): 10°F(-12°C) to 225°F(107°C)
Teflon PFA: -20°F(-29°C) to 200°F(93°C)

*Do not exceed the maximum temperature limits of the elastomer type (diaphragms, balls, seats) that is used in your pump.

Temperature limits of various elastomer types

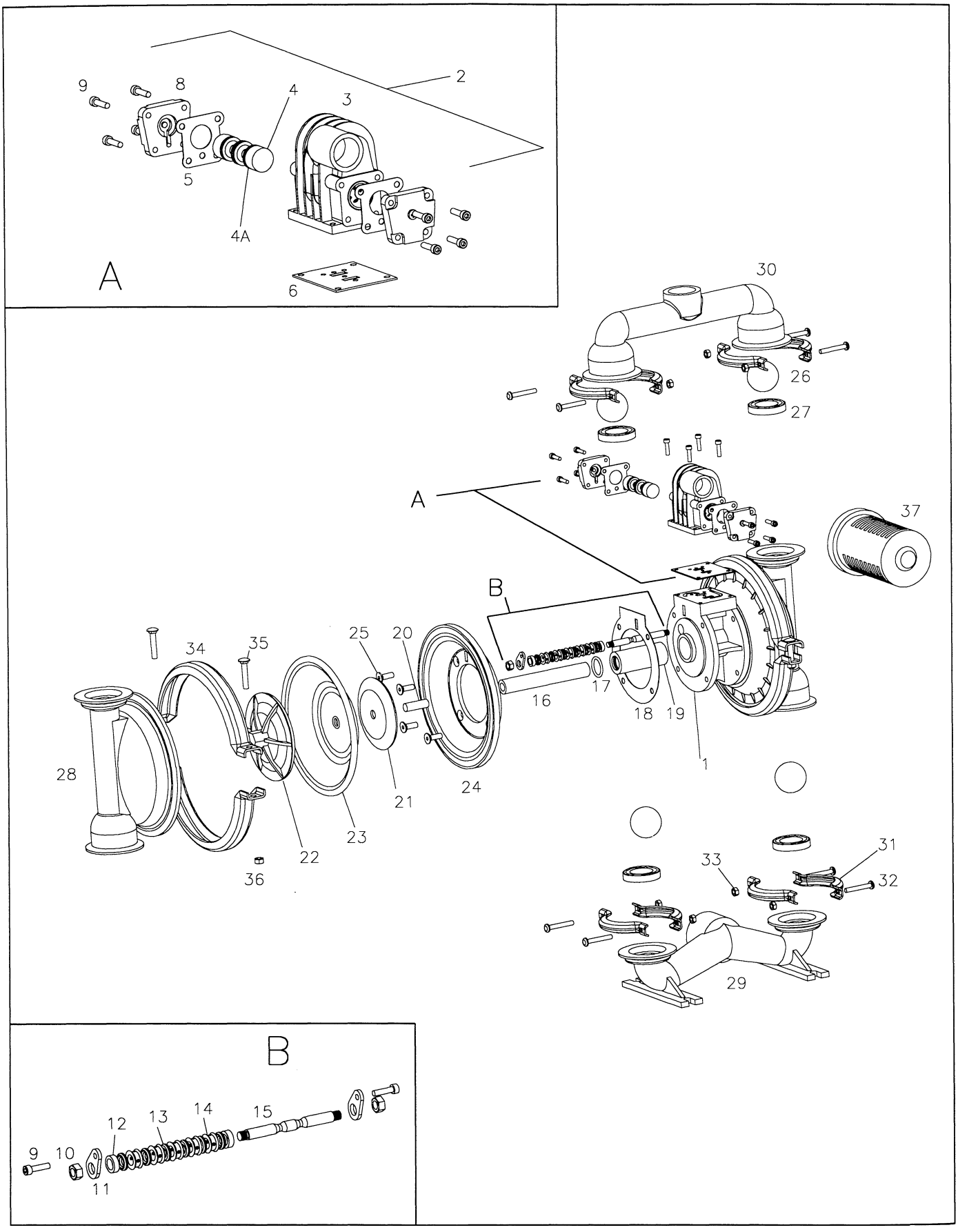
Neoprene: 0°F(-18°C) to 200°F(93°C)
Buna-N: 10°F(-12°C) to 180°F(82°C)
Nordel: -60°F(-51°C) to 280°F(138°C)
Viton: -40°F(-40°C) to 350°F(176°C)
Teflon: 40°F(4°C) to 220°F(105°C)
Polyurethane: 10°F(-12°C) to 170°F(77°C)
XL TPE: -20°F(-29°C) to 300°F(149°C)
FDA Hytrel: -20°F(-29°C) to 220°F(104°C)

Versa-Matic Pump Company
Model E4, Elima-Matic Metallic Pump Parts List (revised 1/98)

Item	Description	Qty.	Pump Model Number E4BA Screen Mount Aluminum*	E4AA Foot Mount Aluminum	E4CA Foot Mount Cast Iron	E4SA Foot Mount Stainless Steel	E4HA Foot Mount Hastelloy C
			Applicable Part Number				
1	Elima-Matic Center Section	1	P31-401				
2	E4 Valve Assembly(items 3 thru 10)	1	P31-200				
3	E4 Valve Body	1	P31-201				
4	Spool	1	P50-104				
4a	Glyd-Ring Assembly	3	P50-104C				
5	Gasket, End Cap	2	P50-110				
6	Gasket, Valve	1	P31-202				
8	End Cap	2	P50-300				
9	Cap Screw	14	P24-208				
10	Stop Nut	2	P24-108				
11	Retainer, Pilot Shaft	2	P50-109				
12	Spacer, Pilot Shaft	2	P50-119				
13	O-Ring, Pilot Valve	6	P24-107				
14	Ring, Pilot Valve	5	P24-106				
15	Pilot Shaft	1	P50-112				
16	Shaft-Rubber Diaphragms	1	P31-103				
16A	Shaft-Teflon Diaphragms	1	P31-102				
17	Bushing O-Ring	2	P24-403				
18	Air Chamber Gasket	2	P31-109				
19	Bushing	1	P31-402				
20	Shaft Stud	2	V161F				
21	Inner Diaphragm Plate	2	V161C				
21A	Inner Diaphragm Plate (Teflon Fitted)	2	V161TI				
22	Outer Diaphragm Plate	2	VB161		WVB161	SVB161	HVB161
22A	Outer Diaphragm Plate (Teflon Fitted)	2	V161TO		SV161TO		HV161TO
23	Diaphragm (See below for Material Selection)	2	V163xx				
23A	Back-Up Diaphragm (Used with Teflon Fitted pumps only)	2	V163TFB (Hytrel) or V163TFB-1 (Neoprene)				
24	Air Chamber	2	P31-101				
25	Air Chamber Bolt	8	P31-404				
26	Valve Ball	4	V171xx (SEE BELOW FOR MATERIAL SELECTION)				
27	Valve Seat	4	V170xx (SEE BELOW FOR MATERIAL SELECTION)				
27A	Valve Seat O-Ring, (Teflon Fitted only)	4	V170T				
28	Water Chamber	2	V165		WV165	SV165	HV165
29	Inlet Manifold	1	V167		WV167	SV167	HV167
30	Discharge Manifold	1	V166		WV166	SV166	HV166
31	Small Clamp Band	4	V169			SV169	
32	Small clamp Band Bolt	8	V169B			SV169B	
33	Small clamp Band Nut	8	V169C			SV169C	
34	Large Clamp Band	2	P31-110			SP31-110	
35	Large Clamp Band Bolt	4	P31-110B			SP31-110B	
36	Large Clamp Band Nut	4	V164D			SV164D	
37	Air Exhaust Muffler	1	VM-0750				

Diaphragm Part Numbers & Material		Valve Ball Part Numbers & Material		Valve Seat Part Numbers & Material	
V163N, Neoprene	V163XL, TPE XL	V171N, Neoprene	V171TPEFG, Hytrel	V170A, Aluminum	SV170, Stainless Steel
V163BN, Buna-N	V163TF	V171BN, Buna-N	V171TPEXL, Teflon XL	V170BN, Buna-N	HV170, Hastelloy C
V163ND, Nordel		V171ND, Nordel		V170N, Neoprene	V170CS, Carbon Steel
V163VT, Viton		V171VT, Viton		V170ND, Nordel	
V163FG, Hytrel		V171P, Polyurethane		V170VT, Viton	
V163TX, One piece Teflon diaphragm (no back-up required)		V171SS, Stainless Steel		V170TPEFG, Hytrel	
		V171TF, Teflon		V170TPEXL, Teflon XL	

* For Screen Mount pumps add Screen V168 and (4) Bolts V302G


A
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11

Versa-Matic Pump Company
6017 Enterprise Drive
Export, PA 15632-8969
(724) 327-7867
(724) 327-4300 – fax

www.versamatic.com

ATEX Information

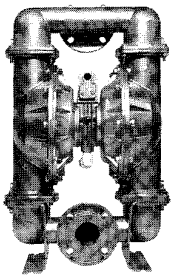
Products: E1AA Bolted, E1SA Bolted, E2AA Bolted, E2SA Bolted, E2AA Clamped, E2SA Clamped, E3AA Bolted, E3SA Bolted, E3AA Clamped, E3SA Clamped, E4SA Bolted, E4AA Clamped, E4SA Clamped

This includes the various elastomers and threading options. See Model Sheet for Details

Constructed in year 2003

II 2 G / II 3 G EEx c II T4/T5

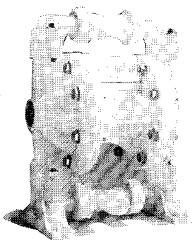
Group II, category 2 and 3, Gas explosive atmosphere, constructional safety ignition protection, Temperature rating “T4” for fluids up to 130°C and “T5” for fluid up to 95°C. Temperatures are not to exceed the ATEX ratings.



ELIMA-MATIC® ANTI-STALLING PUMPS

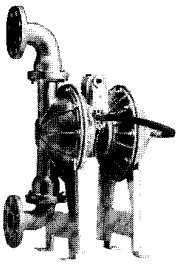
- ❒ Virtually eliminates pump stalling caused by air valve system freeze-ups
- ❒ Anti-stalling, non-icing, lubrication-free air valve system.
- ❒ Available in 1/2", 1", 1 1/4", 2" and 3" sizes
- ❒ Wide selection of materials of construction—including 1/2", 1" and 2" plastic models

PLASTIC PUMPS FOR SOLVENTS AND CHEMICALS



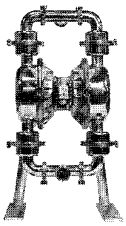
- ❒ Exceptional corrosion resistance
- ❒ Wide selection of materials of construction for wetted and non-wetted parts
- ❒ Leak free bolted construction
- ❒ Also available in 1/2", 1", 1 1/2" and 2" with the Elima-Matic anti-stalling air valve system

Elima-Matic 2:1 High Pressure Pump



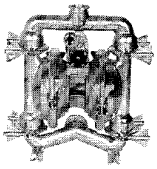
- ❒ Cast in 150lbs ANSI/DIN flanges
- ❒ Constructed of 316 stainless steel
- ❒ Can create discharge pressure over 200 psi
- ❒ Leak-Free bolted design

FOOD AND SANITARY PUMPS



SANITARY PUMPS

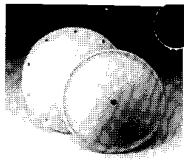
- ❒ FDA approved for use with milk and milk products
- ❒ Constructed of 316 stainless steel
- ❒ Surface finish of 32 micro-inch or better
- ❒ Removable ball cages
- ❒ Easy clean Tri-clamp® connections



FOOD PROCESSING PUMPS

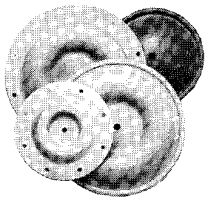
- ❒ Constructed of 316 stainless steel
- ❒ FDA approved
- ❒ Tri-clamp® connections
- ❒ Over-sized clamp wing nuts for disassembly

VERSA-DOME® DIAPHRAGMS



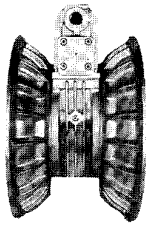
- ❒ The simple, smooth design eliminates complex angles allowing for 3 to 4 times the flex life of standard diaphragms.
- ❒ So flexible they can be installed and removed without the use of pry bars
- ❒ Has lower start up pressure than standard diaphragm.
- ❒ Available Neoprene, Buna-N, Hytrel, Nordel®, Viton® and XL.
- ❒ For use in Versa-Matic and Wilden 1/2", 2", 3" pumps.

VERSA-TUFF TEFLON DIAPHRAGMS



- ❒ Single piece diaphragm combining the chemical resistance of Teflon with the flex life of rubber.*
- ❒ Three times the burst strength of ordinary Teflon overlays
- ❒ More flexible and 100% bonded to the reinforced rubber backing
- ❒ Diaphragms can be placed into Wilden® M4 and M8 pumps

GENUINE VERSA-MATIC REPLACEMENT PARTS AND RETRO FIT CENTER SECTIONS



- ❒ Upgrade V-series and Wilden® M4, M8, and M15 pumps with an Elima-Matic retro fit center section
- ❒ For complete repair of Versa-Matic pumps and Wilden® M4, M8 and M15 metallic pumps
- ❒ Cost-saving elastomer kits for any Versa-Matic pump or Wilden® M1, M2, M4, M8 and M15 pumps
- ❒ Diaphragm and elastomer repair kits available in Buna-N, Neoprene, Nordel®, Teflon®, Viton®, Thermo Plastics Hytrel®, and XL

Your local authorized distributor:

VERSA-MATIC PUMP
6017 Enterprise Drive
Export, PA 15632-8969
(724) 327-7867 • Fax: (724) 327-4300

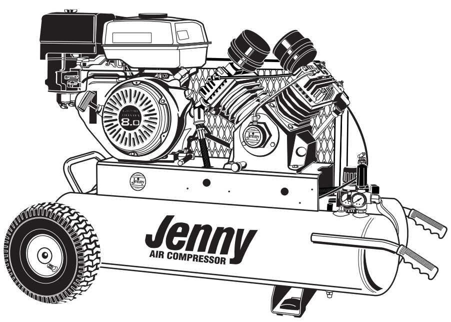
www.versamatic.com

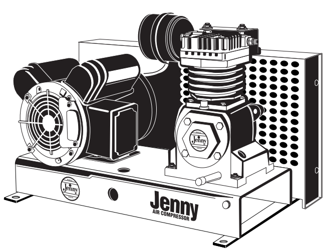
My PUMP™ VERSA-MATIC® PUMP

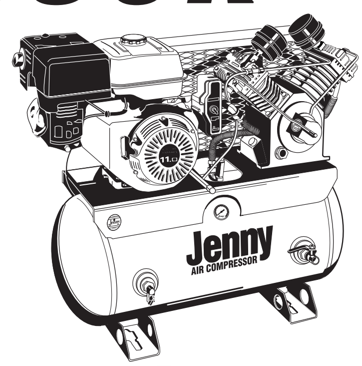
VERSA-MATIC PUMP ISO 9001 CERTIFIED QUALITY

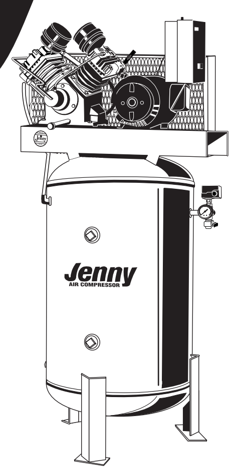
• Life cycle may vary according to extreme start-up conditions, chemicals and abrasive fluids. To prolong diaphragm life, Versa-Matic recommends a gradual increase in air supply on pump start-up.

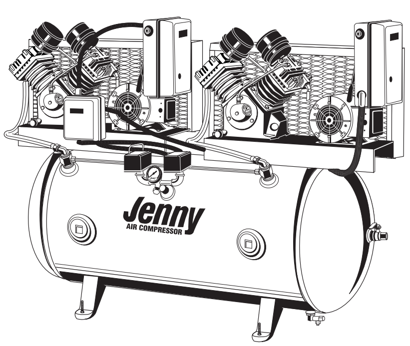
Jenny
AIR COMPRESSOR

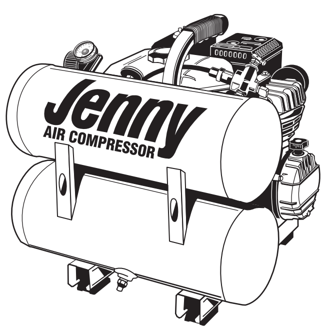






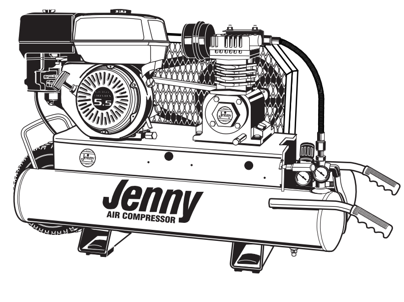


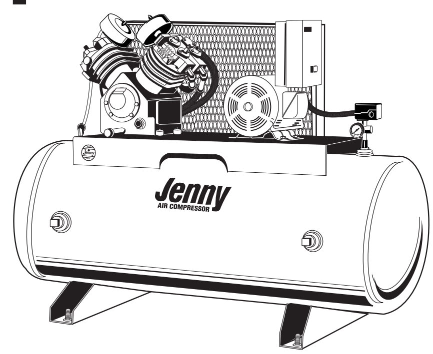


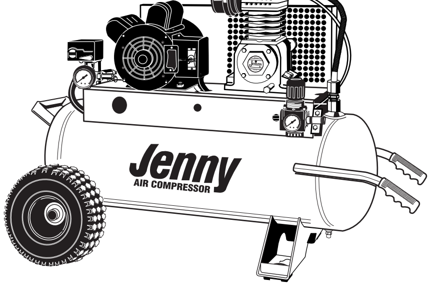


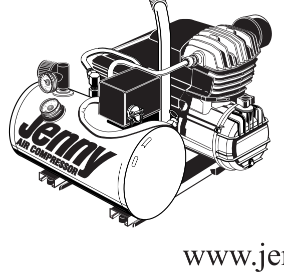
Reciprocating Air Compressors

Operation and Maintenance Manual









Jenny Products, Inc.
850 North Pleasant Avenue
Somerset, PA 15501-1069

Ph:814-445-3400 ● Fx:814-445-2280

www.jennycompressor.com ● info@jennycompressor.com

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Thank you !

For ordering a **JENNY**®. Jenny has been a manufacturer of high quality equipment since 1929. Special attention has been given to every detail of engineering design, perfection of manufacturing methods, individual part inspection, and thorough testing upon completion to assure the continuous trouble-free operation of your Jenny.

In short, your Jenny was designed and made by customer-minded workers. If you, for any reason, fail to find that our product serves as you believe it should, you will be doing yourself and us a favor by telling our Customer Representative, through our Distributor - or direct, just how our product has failed to please you. Over the years we have found that when troubles are reported by our customers, both of us profit. So please help us to serve you properly, which is our first desire.

In the march of progress, engineering and design changes are inevitable, therefore, we reserve the right to vary our designs and/or specifications without implying that they need to be installed on previous models. If you have occasion to order parts or request information about your Jenny, be sure to give machine model number, pump model letter or model number and serial number.

You will find this booklet a valuable guide to the proper and safe operation and maintenance of your new Jenny. It is intended to be used by anyone using or maintaining the equipment. Follow the instructions carefully and you will assure yourself of the utmost in compressed air efficiency and economy.

Section 1

Safety and Health Instructions

Important!

SAFETY AND HEALTH INSTRUCTIONS FOR SAFE USE

⚠DANGER

THIS PRODUCT CAN CAUSE SERIOUS INJURY OR DEATH IF NOT USED IN ACCORDANCE WITH THE FOLLOWING SAFETY INSTRUCTIONS. WE CAN NOT ANTICIPATE EVERY POSSIBLE CIRCUMSTANCE THAT MIGHT INVOLVE A POTENTIAL HAZARD. THE WARNINGS, CAUTIONS, DANGERS, AND SAFETY SUGGESTIONS ARE THEREFORE NOT ALL INCLUSIVE. AS THE OWNER YOU ARE RESPONSIBLE FOR THE SAFE OPERATION OF THIS EQUIPMENT. ALWAYS MAKE SURE THAT ANYONE USING THIS EQUIPMENT HAS READ THIS MANUAL AND FOLLOWS THE SAFETY WARNINGS TO HELP PREVENT THE POSSIBILITY OF PERSONAL INJURY TO THE OPERATOR OR ANYONE ELSE. IF ANY OPERATING PROCEDURE, INSTALLATION, MAINTENANCE, OR WORK METHOD NOT SPECIFICALLY RECOMMENDED IS USED, YOU MUST SATISFY YOURSELF THAT IT IS SAFE FOR YOU AND OTHER PERSONS. YOU MUST ALSO ENSURE THAT THE PRODUCT WILL NOT BE DAMAGED OR MADE UNSAFE BY THE PROCEDURE YOU CHOSE.

In the event that an injury does occur, please seek medical attention at once since the equipment may cause injuries that are not initially recognized.

1. Use proper electrical power.

Connect unit to a dedicated circuit of the proper voltage, proper rated circuit breaker, and wired with the proper wire size and number of conductors.

Ensure that all connections are properly tightened. Improper connections could result, causing damage, injury, or death of the equipment operator.

This machine must be connected in accordance with the National Electric Code (NEC) Article 422-4 - Ed-31, Except as provided for in NEC 90-4.

This machine must be properly grounded to avoid fatal electrical shock in the event of an electrical malfunction. A ground connector screw should be fastened into the chassis to facilitate supplemental grounding as permitted by NEC 250-91.
Do not connect any other equipment to the electrical circuit serving this unit.

Do not replace a fuse or circuit breaker with one of a higher rating without being certain the wire size is adequate to handle the increased electrical load.

Keep all electrical connections dry and off of the ground.

Observe all local and national codes for the installation and use of this type of equipment.

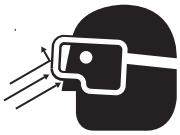
Please use the following criteria for wire selection.

- 0 to 25 Feet from Main Power Source - At least the same size wire.
- 25 to 50 Feet from Main Power Source - At least one wire size larger.
- 50 to 100 Feet from Main Power Source - At least two wire sizes larger.
- 100 to 150 Feet from Main Power Source - At least three wire sizes larger.

If the wire size being used is too small, the voltage drop will be high, and this will cause the motor to draw excessive current and overheat or fail.

If there are any questions or problems with the electrical system being used please, do not hesitate in calling a local qualified electrician.

2. Wear proper protective clothing and equipment.



Wear full eye protection (preferably a face shield) while operating this product. The pressurized spray from this unit can cause severe injury to the eyes. It also may contain irritants, particles or caustic chemicals.

3. Do not operate with protective covers or guards removed.

Operating this machine with the protective guards or covers removed could expose high speed moving components which could allow the operator or bystander to become entangled. Entanglement in this equipment may result in serious injury, amputation, or death.

This unit may start and stop automatically when switch is in Auto mode.

4. Do not operate with any electrical panels or covers opened.

Operating this unit with any of the electrical panels or covers opened may expose high powered electrical connections and/or components which may come in contact with the operator. Contact with high powered electrical equipment by a person could result in serious injury or death.

5. Do not operate this unit with any of the safety controls bypassed.

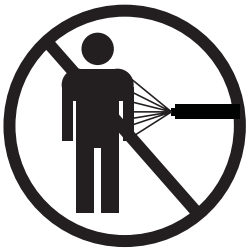
This unit was designed with safety in mind. Never allow anyone to bypass, modify, or alter any of the safety devices on this unit. If any of the safety devices appear to be dysfunctional, do not operate the unit and immediately contact a qualified technician.

Periodically have all the safety devices checked for proper operation.

6. Do not operate this unit with any components rated less than the maximum operating pressure of the unit.

This unit was designed to compress air at a specific operating pressure and volume. Never exceed the pressure rating of air tools, spray guns, air operated accessories, tires, and other inflatables. This can cause them to explode or fly apart and could result in a serious injury.

7. Do not direct air stream at people, animals, or any living thing. Use only OHSA approved air blow guns.



The pressurized spray from this product can cause serious injury or death if sprayed at people, animals, or any living thing. This machine is capable of producing extremely high pressures and/or temperatures. The pressurized spray can cut exposed flesh like a knife. The spray can also cause severe irritation, cuts and/or burns. It can inject air and/or harmful particles and chemicals into the skin and other soft tissues, and this can cause serious injury or death. To prevent this from happening, always hold the air blow gun securely at all times. Never point spray at people, animals, or any living thing.

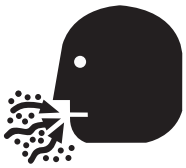
Never put hands or fingers over the spray tip while in operation.

Use only OSHA approved air blow guns.

If an accident occurs and the spray appears to have penetrated the skin, even if the injury appears to be minor, seek medical care immediately. Do not treat as a simple cut. Be prepared to tell a physician what particles and/or chemicals you are using.

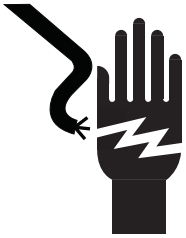
For treatment instructions, have your physician contact the nearest regional poison information center for more information.

8. Do not use compressed air from this equipment for breathing.



The compressed air from the compressor is not safe for breathing! The air stream may contain carbon monoxide, toxic vapors, hydrocarbons, oil mist, water vapor, and/or solid particles. Never inhale air from the compressor either directly or from a breathing device connected to the compressor.

9. Unplug or disconnect unit before cleaning or servicing.



To help prevent the risk of injury or death as a result of shock or electrocution or entanglement while this product is being cleaned, serviced, or repaired, electrical power must be removed. Unplug or disconnect the power cord or “lock out” the switch box that supplies power. For more details, please refer to U.S. Department of Labor, Occupational Safety and Health Administration, Regulation 29 CFR 1910.147, Control of Hazardous Energy Source (lockout/tagout).

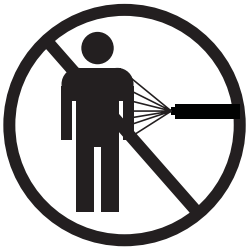
Only qualified personnel should attempt any electrical repairs or trouble shooting on the equipment. Serious injury or death could result from improper repairs and/or trouble shooting.

10. Never modify or alter this unit.

For your own safety as well as others, never allow this unit to be altered or modified. Modifying or altering equipment to operate in a fashion other than its original design may cause serious injury or death.

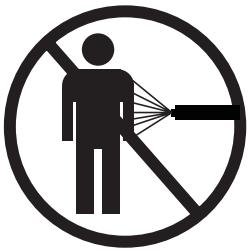
Never exceed the factory pressure or temperature rating of the system. Be sure that all accessory equipment and system components meets or exceeds the pressures and temperatures developed by the unit.

11. Do not operate unit with damaged or worn hoses, fittings, clamps, or spuds.



Always check the connection hose, control hoses, fittings, clamps, and spuds prior to operation. Replace all damaged or worn items with one which meets or exceeds the specifications of the original equipment. The use of an improper hose, fitting, clamp, or spud may cause the hose, fitting, clamp, or spud to rupture which could result in serious injury or death or damage to the machine.

12. Do not repair damaged hoses or fittings.



Replace all damaged hoses and/or fittings with ones which meet or exceed the specifications of the original equipment.

Do not use the hose if cuts, leaks, abrasions, bulges, or coupling damage is evident.

Never remove any hose or fitting while the unit is on. The risk of fluid injection is present.

13. Do not touch exposed metal such as the compressor pump, motor, tank, connection hoses, or any fluids.

This unit operates at extremely high temperatures. These temperatures may reach in excess of 240° F. Touching any exposed metal or other surfaces may cause severe burns.

Compressor will remain hot for a long period of time. Allow the compressor to cool to room temperature before attempting any service or repairs.

14. Provide at least three (3) feet of clearance to adjacent construction.

This unit requires adequate ventilation and must be placed in a location which provides at least three feet of clearance to all adjacent construction. This unit operates at high temperatures and failure to allow adequate ventilation or restrict the air flow may cause the machine to overheat or cause materials in close proximity to reach their flash temperatures and ignite.

15. Do not operate near flammable or combustible materials.

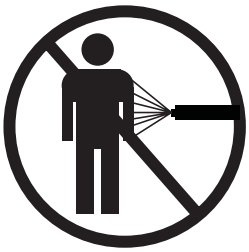
This product is not intended for use in locations where fire or explosion hazards may exist due to the presence of flammable vapors, liquids or gases, or combustible dusts or fibers.

Heat generated by the compression cycle and/or drive system is released into the atmosphere and can cause materials in close proximity to reach their flash temperatures and ignite or explode.

Always operate the compressor in a well ventilated area.

Always store flammable or combustible materials in a secure location away from all open flames, sparks, and heat sources.

16. Do not remove any air line or receiver connections before relieving air pressure in the entire air system and receiver tank(s).



This machine is capable of producing extremely high pressures and/or temperatures. The pressurized spray can cut exposed flesh like a knife. The spray can also cause severe irritation, cuts and/or burns. It can inject air and/or harmful particles and chemicals into the skin and other soft tissues, and this can result in serious injury or death. To prevent this from happening, always relieve the air pressure in the entire system and in the receiver tanks before removing any air lines or receiver connections.

17. Do not operate at pressures, temperatures and rotational speeds in excess of the manufacturers recommendations.

With safety in mind, the unit was designed and is tested to withstand specific operating pressures, temperatures, and volumes. The different components of the machine are matched to produce the factory set operating pressure and volume. Any modification of these settings can cause damage to the compressor and/or maintenance and operating personnel

Never make adjustments and/or parts substitutions to alter the factory set operating pressures, temperatures, and volumes.

18. Do not spray flammable or toxic liquids in confined areas. Areas must be well ventilated. Follow all manufacturers supplied instructions of the material to be sprayed and the warnings associated with those products.

Never spray flammable liquids in confined areas. The flammable vapors may accumulate and then ignite causing an explosion. Always spray flammable liquids in a well ventilated area free from combustible materials, gasoline, or solvent vapors.

Never spray toxic liquids or chemicals in confined areas. The toxic vapors may accumulate and overcome the operator. Injury or death may result.

Read and follow all the safety instructions provided on the product label and Material

Safety Data Sheet (MSDS) for the material being used.

Use a NIOSH/MSHA approved respirator designed for use each specific application.

Always wear the appropriate approved safety equipment.

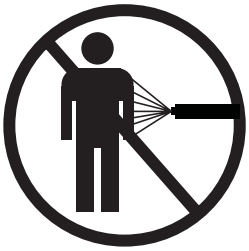
Always operate the compressor in a well ventilated area.

Always store flammable materials in a secure location away from all open flames, sparks, and heat sources.

19. Use this machine only in a well ventilated area.

This unit requires adequate ventilation. Heat generated by the compression cycle of the unit must be released into the atmosphere. Failure to allow adequate ventilation or restrict the air flow may cause the machine to overheat.

20. To prevent corrosion, drain receiver tank(s) after 4 hours of use or at the end of each day, whichever comes first. Have the receiver tank(s) inspected for corrosion and/or damage periodically.



Always drain receiver tanks daily or after each use. If the receiver or any air lines develop leaks, immediately replace them. There is a risk of a violent tank or air line explosion which can cause damage to property and can injure or kill people nearby.

All pressure vessels should be inspected once every year or more often depending on use. To find your state pressure vessel inspector, look under Division of Labor and Industries in the government section of a phone book.

Never make modifications, weld, drill into, or attempt any repairs to compressor tanks. If modifications are necessary, take the tank to an A.S.M.E. certified coded pressure vessel shop that can perform these modifications. The shop will need an ASME "R" stamp.

Never make adjustments and/or parts substitutions to alter the factory set operating pressures, temperatures, and volumes.

21. Do not use in flammable or combustible atmosphere.

This product is not intended for use in locations where fire or explosion hazards may exist due to the presence of flammable vapors, liquids or gases, or combustible dusts or fibers.

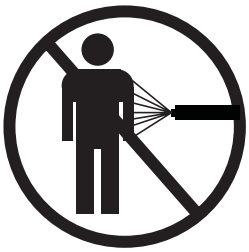
It is normal for the electrical contacts within the motor and the electrical control box to spark. Also, it is normal for gasoline engines to produce extremely high temperatures and sparks. If the high temperatures or sparks from the compressor come in contact with flammable vapors, they may ignite causing a fire or explosion.

22. Do not permit untrained personnel to maintain or make repairs on this unit.

Only qualified personnel should be permitted to make any type of repairs to this unit. Improper repairs may cause this unit to malfunction which could result in serious injury or death to the operator, repair person, or bystander.

23. Risk of Asphyxiation.

The pressurized spray from this unit can cause particles as well as vapors to become airborne. Keep a safe distance from the vapors and airborne particles. Wear protective breathing apparatus and approved safety equipment. Use only in a well ventilated area.



Never use the equipment to spray toxic chemicals. The risk of inhalation or contact with the skin may result in injury or death.

Never attempt to stop or deflect a leak with any part of your body (including the use of a rag). The risk of injection is present.

Some dust may contain chemicals known to the state of California to cause cancer, birth defects, and other reproductive harm. Some of these chemicals are compounds in fertilizers, insecticides, herbicides, pesticides and arsenic and chromium found in treated lumber.

24. Keep compressor as far away from spraying area as possible. At least 25 feet minimum.

25. Do not leave loose parts, rags, tools, and other foreign matter on the compressor, drive system, or fan blade.

Loose parts, rags, tools, and other foreign matter can become entangled in the unit or be expelled from the machine at a high rate of speed. This can result in damage to the machine or serious injury or death to the operator, repair person, or bystander.

26. All local code requirements for pressure vessels should be investigated to assure all requirements have been met. Pressure vessels such as the receiver may require additional ASME code stamping to meet local code(s).

27. Always wear hearing protection when operating or working near the unit.

This unit is capable of producing noise that can be hazardous and can cause hearing loss. In order to avoid hearing loss, always wear hearing protection when operating or working near this machine.

28. Do not route hose in a manner that will cause sharp bending, kinking, cutting, abrasion, or exterior damage.

29. Do not pull on the hose to move the unit, untangle knots, or any other excessive pulling stress.

30. Always release the system pressure prior to service, storage, daily shutdown, and/or disconnecting the hose or from the unit.

Always release pressure prior to service, storage, daily shutdown, and/or disconnecting the hose from the unit. Pressure contained within the unit could be released unexpectedly and could cause injury.

31. Never leave an operating machine unattended.

Always shut off the machine and relieve the system pressure before leaving the unit. Never leave an operating machine unattended.

32. Never allow children or any unauthorized persons to operate the machine.

Allow only personnel trained in the use of the equipment to operate the unit. Never allow children or unauthorized personnel to operated the unit. Keep all persons at a safe distance when the machine is being operated.

33. Never exceed the pressure rating of air tools, spray guns, air operated accessories, tires and other inflatables could cause them to explode or fly apart.

Exceeding the pressure rating of air tools, spray guns, air operated accessories, tires and other inflatables could cause them to explode or fly apart. Always follow the manufacturers recommendations and never exceed the maximum allowable pressure ratings.

Never use the compressor to inflate small low pressure objects such as children's toys, footballs, basketballs, etc.

34. Explosive fuel. (If gasoline engine equipped)

Gasoline is extremely flammable and its vapors can explode if ignited. Store gasoline only in approved containers, in well-ventilated, unoccupied buildings, away from sparks or flames.

Do not fill the fuel tank while the engine is hot or running, since spilled fuel could ignite if it comes in contact with hot parts or sparks from ignition.

Do not start the engine near spilled fuel; wipe up spills immediately. Never use gasoline as a cleaning agent.

Do not fill the fuel tank to the point of over flowing. Allow approximately 1-1/4" of tank space for expansion.

Shut off fuel valve on engine before transporting unit to prevent fuel leaking from carburetor.

35. Do not touch the exhaust system, cylinder head or crankcase when hot. (If gasoline engine equipped)

The crankcase, cylinder head, exhaust system, and other components can get extremely hot from operation. To prevent severe burns, do not touch these areas while the engine is running - or immediately after it is turned off. Never operate the engine with heat shields or guards removed.

36. Do not inhale engine exhaust gases. (If gasoline engine equipped)

Engine exhaust gases contain poisonous carbon monoxide. Carbon monoxide is odorless, colorless, and can cause death if inhaled. Avoid inhaling exhaust fumes, and never run the engine in a closed building or confined area without adequate ventilation.

37. Always shut down the unit and refuel away from open fires or sparks. (If gasoline engine equipped)

Due to the explosive nature of the fuels involved in running this type of equipment, never attempt to refuel this unit while it is in operation, or anywhere close to open fires or sparks. Do not smoke while refueling the unit.

38. Do not over fill the fuel tank(s). (If gasoline engine equipped)

Do not over fill the fuel tanks. If any spillage does occur, clean up and/or neutralize the spilled fuel before any attempt to use the machine is made. It may be prudent to move the machine away from the area where the fuel was spilled before using the equipment.

39. Disconnect the spark plug lead before cleaning or servicing. (If gasoline engine equipped)

To help prevent injury while this product is being cleaned, serviced, or repaired, the spark plug lead must be removed. Ground the lead to prevent sparks that could cause fires.

40. Use only Jenny repair parts and accessories.

To preserve the safety features that are built in to this product, use only Jenny repair parts and accessories.

This product must be periodically serviced in accordance with the instructions in this owner’s manual.

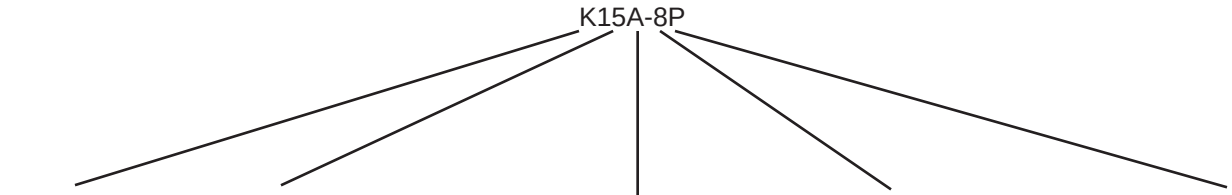
Section 2

Introduction and Description

INTRODUCTION

This manual contains operation and service instructions for the Jenny Air Compressors.

Brief Compressor Nomenclature:



Pump Type	HorsePower	Pressure	Tank	Tank Letters
F	13 - 1/3 HP Electric	A - 125 PSI	2 - 2 Gallon	P - Portable
K	12 - 1/2 HP Electric	B - 175 PSI	4 - 4 Gallon	H - Horizontal
G	34 - 3/4 HP Electric	C - 100 PSI	6 - 6 Gallon	V - Verticle
GC	1 - 1 HP Electric	E - 150 PSI	8 - 8 Gallon	HC - Hand Carry
GT	15 - 1-1/2 HP Electric	S - 40 PSI	15 - 15 Gallon	UM - ASME “UM” Tank
J	2 - 2 HP Electric		17 - 17 Gallon	T - Truck Mount
W	3 - 3 HP Electric		30 - 30 Gallon	PT - Portable Trailer
U	5 - 5 HP Electric		60 - 60 Gallon	SM - Skid Mount
T	75 - 7-1/2 HP Electric		80 - 80 Gallon	P2 - 2 Wheel Portable
	10 - 10 HP Electric		120 - 120 Gallon	C - Climate Control
	15 - 15 HP Electric		240 - 240 Gallon	S - Sprinkler
	20 - 20 HP Electric		B - Base Plate	DP - Dryer Package
	25 - 25 HP Electric			
	4HG - 4 HP Honda Gas			
	5HG - 5 HP Honda Gas			
	6HG - 6 HP Honda Gas			
	8HG - 8 HP Honda Gas			
	9HG - 9 HP Honda Gas			
	11HG - 11 HP Honda Gas			
	13HG - 13 HP Honda Gas			
	18HG - 18 HP Honda Gas			

Manufactured by Jenny Products, Inc., 850 North Pleasant Avenue, Somerset, PA 15501

GENERAL DESCRIPTION

The Jenny Air Compressor is a reciprocating piston oil bath crankcase air compressor driven by either an electric motor or gasoline engine mounted either on a base or air compressor receiver.

MAJOR COMPONENTS

The Reciprocating Compressor is comprised of the following major components: the air compressor pump, air control system, control box, electric motor or gasoline engine and base weldment or receiver tank.

RECIPROCATING (Piston) AIR COMPRESSOR ASSEMBLY

The air compressor is an oil bath, reciprocating (piston) type. It is powered by an electric motor

or gasoline engine V-belt drive sheave assembly. The pumping unit is either a Single Stage or Two Stage Reciprocating Pump.

SINGLE STAGE AND TWO STAGE RECIPROCATING PUMPS

Reciprocating (Piston) Compressors can be widely found in these two primary configurations; Single Stage and Two Stage.

Single stage air compressors work by drawing free air in and subsequently compressing the air to its final pressure in a single piston stroke. Single stage air compressors can attain pressures of up to 150 PSI. Typically, a single stage pump will have a higher CFM(Cubic Feet per Minute) rating than a two stage pump because every cylinder is drawing in air and compressing it with air during every rotation.

Two stage air compressors work in a very similar manner with the primary difference being that they compress the air in 2 steps or stages. During the first step or stage, air is drawn in and compressed to an intermediate pressure. After being compressed in the first stage, the air is piped, usually through an intercooler where the air is allowed to cool, to be compressed in the final or second stage. Two stage compressors are normally good for pressures up to 200psi. Two stage pumps are more efficient at higher pressures because the air is cooled between the stages.

ELECTRIC MOTOR

A single or three phase, open drip proof, electric motor, is furnished to drive the air compressor assembly. Depending on the horsepower rating of the motor and phase, the motor is capable of operating on different voltages(please see following chart) by changing the wiring in the motor and starter(if greater than 5HP). These changes should only be attempted by a qualified electrician.

Motor HP Rating	Voltage	Phase	
1/3 thru 2 HP	115V, 208V or 230V	Single	Switchable
3 thru 7-1/2 HP	208V or 230V	Single	Only
1/3 thru 25 HP	208V	Three	Only
1/3 thru 25 HP	230V or 460V	Three	Motor and Starter Switchable-Different Motor Overloads
1/3 thru 25 HP	575V	Three	Only

GASOLINE ENGINE

A Honda OHV gasoline engine can be furnished to drive the air compressor assembly. The engines are all industrial/commercial grade and can be either 5.5, 6.5, 8, 11, 13, or 18 HP depending on the requirements of the air compressor pump.

AIR CONTROL SYSTEM

Constant Run Units - Head Unloader and Discharge Unloader

The air intake is regulated by discharge air pressure demand. A pilot valve is used to operate an unloading device in the compressor head or a line discharge unloader. For most units, air pressure is fed through the pilot valve to a specially designed compressor head. The air pressure actuates the special head's unloading pins that hold the air intake valves in the closed position. For line discharge unloaders, a specially designed valve controls the flow of air. Based on the system pressure, the

valve directs the flow into the air system or to the atmosphere.

Start-Stop Control Units

As with constant run units, the air intake is controlled by air pressure demand. Instead of being controlled by a pilot valve, Start-Stop units are controllled by an electrical switching device, called a pressure switch. When the system reaches a designated pressure, or maximum pressure set point, the pressure switch de-energizes the electric motor. As air is consumed and the system pressure falls below another designated pressure, or minimum pressure set point, the pressure switch energizes the electric motor.

Unloading the pressure from the pump for Start-Stop Units is accomplished either by a pressure switch with unloading capabilities (Single Stage Units) or by a centrifical unloader(Two Stage Units).

Centrifical Unloader Units - Centrifical Unloader units use the rotation of the pump to actuate a specially designed valve. As the pump rotates, weights spin outward causing a specially designed valve to close. When the pressure switch de-energizes the electric motor, the pump stops spinning and consequently allows weights to return to their original position and open the valve. This allows the trapped air between stage one and two to escape through the valve and bleed to the atmosphere.

Dual Control Units

Dual Control Units allow the compressor to operate in both constant run and start-stop control. The unit has both a pilot valve and a pressure switch. The unit can be switched from either operating mode by opening and closing a ball valve. The pilot valve is used to control the compressor when operating in the constant run and the pressure switch is used to control the compressor when operating in the stop/start mode.

A good rule of thumb in determining which is the best mode of operation is by the amount of time the compressor will be required to supply air. If the demand for air is infrequent, then the unit should be set up for stop/start operation to minimize unnecessary run time and operational wear and tear and to save energy. If there is a frequent or extended demand for air, and/or the unit is located in a distant or remote area where access to the compressor is difficult, the unit should be set up for constant run to minimize the number of times the motor must start in an hour to ensure good motor life.

PILOT VALVE

The pilot valve is a pressure control device used to maintain system pressure within a preset range while the compressor runs contantly. The pilot valve may be used to actuate an unloading device such as a discharge line unloader or an unloading device in the head of the compressor. When the system reaches a predetermined pressure, the pilot valve actuates the unloading device and allows the system to run in the unloaded mode. When the system falls below the preset cut-in pressure, the pilot valve closes and disengages the unloading device(s) which allows the compressor to pump air into the system.

PRESSURE SWITCH

The pressure switch is a pressure control device. It functions by opening and closing an electrical switch based on the system pressure. When the system pressure reached a preset pressure, the pressure switch opens a set of electrical contacts which in turn shuts off the electric

motor. Once the air demand drops the system pressure to a predetermined set point, the pressure switch activates and closes the switch and subsequently starts the electric motor. Many pressure switches also contain a special unloading device which relieves the pressure from the compressor pump when the motor is shut off.

PRESSURE REGULATOR

The pressure regulator is used to maintain a constant outlet pressure. It allows adjustment to any desired pressure below the maximum outlet pressure of the compressor.

BASE/TANK WELDMENT ASSEMBLY

The base/tank weldment serves two primary functions. First, it gives the air compressor a rigid structure that was designed specifically for the operational requirements of the unit. Secondly, the weldment provides the mounting capability for all of the major components of the compressor assembly.

MAGNETIC STARTER

A magnetic starter is included on all models 5HP and larger on simplex and all duplex single phase units and three phase units. The magnetic starter works in conjunction with a pressure switch to start and stop the electric motor. The magnetic starter is primarily a switch which can take the full load of starting and stopping an electric motor when other switching devices are incapable of handling this load. Starters typically are made of two components; the contractor and a heater overload block.

The contractor is a switch designed to engage and disengage all the power to an electric motor.

The heater overload block is a protective device for the motor. If the motor draws over a preset number of amps, the overload will disengage the starter and shut the unit down.

CHECK VALVE (Start-Stop Units and All 2-Stage Units)

The check valve functions by allowing air to only move in one direction. This is required and accomplished when the unit switches into either unload (Constant Run Unit) or stopped (Start-Stop Unit) mode of operation. In this situation, the air receiver pressure is built up to the maximum pressure. The pilot valve or pressure switch senses the pressure and at this point either closes the air intake valves or turns off the motor.

RELIEF VALVE

A pressure relief valve is mounted on the manifold assembly or on the receiver. In the event that air pressure continues to build when the demand for compressed air has either slowed or ceased altogether, the relief valve will open at a predetermined set point and allow excess pressure to discharge into the atmosphere. In most cases, this is an indication that there has been a failure in air system somewhere and the cause should be investigated immediately.

AIR INTAKE FILTER(S)

Air filters are designed to remove foreign particles from the air entering the pump. Keeping the filters clean and free from obstructions will ensure the pump continually receives a clean air supply.

Section 3

Preparation for Use and Initial Installation Instructions

PREPARATION FOR USE

GENERAL

The Jenny Air Compressor unit was thoroughly tested at our factory as part of the manufacturing process. The machine will function as designed if properly assembled, set up, and operated. There are certain steps that must be taken prior to attempting to operate unit to assure it is ready for operation.

INSPECTION OF NEW EQUIPMENT

1.) **Check the box or crate for possible shipping damage.**

If extensive damage is apparent to the box, please notify the freight carrier immediately. Do not open the box. Wait for the freight carrier's inspector to be present before opening.

2.) **Open the shipping box and inspect for damage and missing components.**

You should find:

1 - Jenny Air Compressor
1 - Instruction Manual and Warranty Card(s)
1 - Spare parts bag (not included with all units)

Check all of the equipment against the packing list. Examine identification plates for positive identification of the equipment received. If any of these components are missing, please notify the distributor from whom the machine was purchased immediately.

Inspect the unit carefully for any possible hidden damage. If the unit or any of the components are damaged, please notify the freight carrier immediately.

⚠WARNING **Do not attempt to repair or use the unit or any of the components if the unit is damaged. Notify the distributor from whom the machine was purchased immediately.**

3.) **Record the machine model number, serial number, and specifications located on the machine. Always include unit model, unit serial number, and compressor model number when ordering spare parts.**

4.) **Fill out the enclosed warranty card.**

5.) **Inspect for and tighten any loose nuts and/or bolts.**

6.) **Inspect the controls, instruments, and gauges for damage or loose mountings.**

7.) **Inspect all hoses for kinks and loose connections.**

8.) **Inspect electrical wiring for cuts, fraying, and loose connections.**

9.) **Inspect all tubing and piping for loose connections or damage.**

10.) **Check all accessories for damage and loose mountings.**

SERVICING NEW EQUIPMENT

1.) **Remove the unit from the shipping pallet and place on a level surface.**

This can be accomplished by removing the shipping bolts or bands located at the four corners of the base weldment or receiver tank.

2.) **Check oil level in pump, safety relief valve operation, air filter cleanliness, air receiver condensate as specified in Section 4.**

3.) **Perform all the preventive maintenance servicing as specified in Section 5 of this manual.**

LUBRICATION

If the unit is portable, lubrication of the wheels may be required. Use a high quality standard grease. Maintain proper oil level in the compressor pump and gasoline engine if so equipped.

AIR CLEANER

The air cleaner is of the dry, replaceable type. One of the most important service requirements for long term maintenance free operation is to replace or clean the air cleaner element regularly.

NOTICE

Excessive wear, high oil consumption and poor performance will result if the air cleaner is clogged or allows contamination to enter the compressor. Refer to maintenance instructions in Section 4 for service instructions and intervals for cleaning or replacement of element.

INSTALLATION

Proper installation is a key factor in determining the longevity of an air compressor. Please study the installation information in this manual. This information is a guideline for a typical shop installation and is not all inclusive. If there are questions concerning the installation, please do not hesitate to contact your Jenny representative or the Jenny Compressor Company if additional information is required.

1.) **Position compressor and receiver tank in a safe work area.**

Place the compressor and receiver in the designated work area. Leave a minimum of 3 feet clearance around the unit for work space.

⚠CAUTION **This unit requires adequate ventilation and must be placed in a location which provides at least three feet of clearance to all adjacent construction. Failure to allow adequate ventilation or restrict the air flow may cause the machine to overheat. Damage to the machine, operator, and any other unit, product, and accessory in the air stream may result.**

Compressors run out of level by over 10 degrees may be permanently damaged.

Do not locate near flammable or combustible liquids or operate in flammable or combustible atmosphere. A fire or explosion may result.

2.) **Connect plumbing or air hoses.**

Tighten all connections securely. Use pipe dope or teflon tape to help seal the connections that require the use of a wrench. See **Section 4** for information on connecting and disconnecting and hoses.

⚠WARNING **Do not operate this unit with any components rated less than the maximum operating pressure of the unit.**

3.) **Connect electrical service using a fusible disconnect switch. Ensure that the machine is connected to the proper power supply both amperage and voltage.**

Ensure that all connections are properly tightened. Improper connections could result, causing damage, injury, or death of the equipment operator.

This machine must be connected in accordance with the National Electric Code (NEC) Article 422-4 - Ed-31, Except as provided for in NEC 90-4.

This machine must be properly grounded to avoid fatal electrical shock in the event of an electrical malfunction. A ground connector screw should be fastened into the chassis to facilitate supplemental grounding as permitted by NEC 250-91.

Do not connect any other equipment to the electrical circuit serving this unit.

Do not replace a fuse or circuit breaker with one of a higher rating without being certain the wire size is adequate to handle the increased electrical load.

Keep all electrical connections dry and off of the ground.

Observe all local and national codes for the installation of this type of equipment.

If the wire size being used is too small, the voltage drop will be high, and this will cause the motor to draw excessive current and overheat.

If there are any questions or problems with the electrical system being used please, do not hesitate in calling a local qualified electrician.

4.) **Ensure the new equipment service was performed prior to operation.**

5.) **Review all Danger, Warning, and Caution information located on the machine and in the Operator's Manual.**

6.) **Check to be certain that all the control switches are in the off position.**

⚠WARNING The unit is capable of starting automatically.

7.) **Turn the power on to the machine.**

8.) **Start the unit.**

Constant Run Control Equipped -

If the unit is a constant run equipped and does not have an On/Off Switch, the unit will start immediately. If the unit is equipped with an On/Off switch move the switch to the On position.

Start/Stop Control -

If the unit is Start/Stop equipped and does not have an On/Off switch turn the OFF-AUTO (MAN) switch from the OFF position to either the MAN or AUTO position. If the unit is equipped with an On/Off switch move the switch to the On position.

Dual Control -

If the unit is Dual Control equipped and does not have an On/Off switch turn the OFF-AUTO (MAN) switch from the OFF position to either the MAN or AUTO position. If the unit is equipped with an On/Off switch move the switch to the On position.

Starting Gasoline Engine (If so equipped) -

If so equipped, your air compressor is powered by a Honda® gasoline engine. Most accidents with engines can be prevented if you follow all instructions in this manual, the engine owner's manual and on the engine. Follow the instructions in the owners manual for the proper starting procedure.

1. Turn the engine switch to the On or Run position

2a. If the engine is only rope start, pull rope to start. Continue until engine is running.

2b. If electric start, turn switch past the On position to the Start position. Hold switch in Start position until engine is running, then release.

Section 4

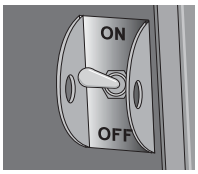
Operating Instructions

OPERATING INSTRUCTIONS

This section describes the operating controls and indicators, detail theory of operation, and operating procedures.

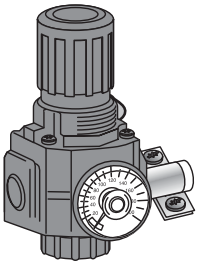
OPERATING CONTROLS AND INDICATORS

Jenny compressors are designed to be highly reliable and very simple to operate. Therefore, there are only a few operating control and indicators. They are as follows:



On/Off Switch (SW-3, SW-4, Start/Stop Control & Dual Control)- A switch which allows the operator to manually turn the machine on and off. The switch is located either on the motor, as in the case of the SW-3 and SW-4, or a rotatable lever on the pressure switch for Dual Control and Start/Stop control.

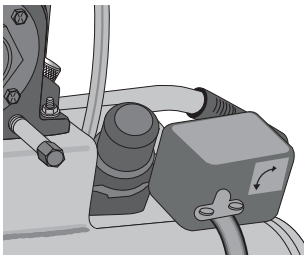
Receiver Pressure Gauge - Indicates the receiver tank air pressure in PSI. The receiver gauge is located either directly fitted to the receiver tank or on the manifold block.



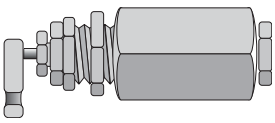
Pressure Regulator - The pressure can be increased or decreased by turning the knob on the regulator. Clockwise increases the outlet pressure and counterclockwise decreases the outlet pressure.

Pressure Regulator Gauge - Indicates the outlet or line pressure in PSI. The pressure regulator gauge is located on the pressure regulator

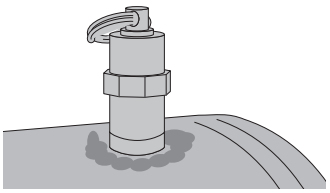
Oil Level Gauge (If so equipped) - Allows for the visual inspection of the oil level in the crankcase of the pump through a clear window or sight glass.



Pressure Switch (Start/Stop Control & Dual Control) - Starts and stops the unit at predesignated high and low pressures. The compressor will start when the pressure within the receiver tank falls below the preset low pressure setting and will stop when the system has reached the high pressure setting. Also located on the pressure switch is a rotatable lever that allows the operator of the unit to turn the unit on or off.



Pilot Valve (Constant Run and Dual Control) - Opens and closes the air intake check valves at predesignated high and low pressures while the motor or engine runs. The air intake check valves will be allowed to operate normally when the pressure within the receiver tank falls below the preset low pressure setting and will hold the intake check valves open when the system has reached the high pressure setting.

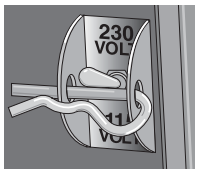


Safety Valve - A safety valve is provided on all Jenny compressor units. The purpose of the safety valve is to relieve system and tank pressure to the atmosphere at a predetermined high pressure limit. In most cases, this is an indication that there has been a failure in air system somewhere and the cause should be investigated immediately.

Dual Control Switch (If so equipped) - Dual Control Units allow the compressor to operate in both constant run and start-stop control. The unit has both a pilot valve and a pressure switch. The unit

can be switched from either operating mode by opening and closing a ball valve. The pilot valve is used to control the compressor when operating in the constant run and the pressure switch is used to control the compressor when operating in the stop/start mode.

A good rule of thumb in determining which is the best mode of operation is by the amount of time the compressor will be required to supply air. If the demand for air is infrequent, then the unit should be set up for stop/start operation to minimize unnecessary run time and operational wear and tear and to save energy. If there is a frequent or extended demand for air, and/or the unit is located in a distant or remote area where access to the compressor is difficult, the unit should be set up for constant run to minimize the number of times the motor must start in an hour to ensure good motor life.



Dual Voltage Switch (If so equipped) - The dual voltage switch allows the operator to change the operating voltage of the unit from 115VAC to 230VAC by toggling the switch to the corresponding voltage position.

Magnetic Starter (If so equipped) - A magnetic starter is included on all models 5HP and larger simplex and all duplex single phase units and three phase units. The magnetic starter works in conjunction with a pressure switch to start and stop the electric motor. The magnetic starter is primarily a switch which can take the full load of starting and stopping an electric motor when other switching devices are incapable of handling this load. Starters typically are made of two components; the contactor and a heater overload block.

The contactor is a switch designed to engage and disengage all the power to an electric motor. The heater overload blocks is a protective device for the motor. If the motor draws over a preset number of amps, the overload will disengage the starter and shut the unit down.

PREPARATION FOR USE

Read and understand the safety instructions before using any Jenny Air Compressor.

Prior to any use of the compressor, it is important to follow the check list outlined below:

1.) **Check the pump and gasoline engine (if so equipped) to ensure proper oil levels as specified in Section 5.**

⚠CAUTION **Do not operate the unit without or an inadequate amount of lubricant(s). This may cause severe damage to the air compressor pump or gasoline engine (if so equipped).**

2.) **Check oil level safety relief valve operation, air filter cleanliness, air receiver condensate as specified in Section 5.**

3.) **Perform all the preventive maintenance servicing as specified in Section 5 of this manual.**

LUBRICATION

If the unit is portable, lubrication of the wheels may be required. Use a high quality standard grease. Maintain proper oil level in the compressor pump and gasoline engine if so equipped.

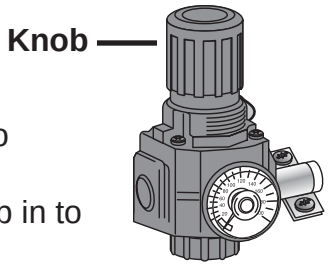
AIR CLEANER

The air cleaner is of the dry, replaceable type. One of the most important service requirements for long term maintenance free operation is to replace or clean the air cleaner element regularly.

⚠CAUTION

Excessive wear, high oil consumption and poor performance will result if the air cleaner is clogged or allows contamination to enter the compressor. Refer to maintenance instructions in Section 5 for service instructions and intervals for cleaning or replacement of element.

ADJUSTING REGULATOR



1. Pull regulator knob out
2. Turn knob clockwise to increase regulated pressure and counter clockwise to decrease regulated pressure.
3. When desired pressure is shown on the regulated pressure gauge push knob in to lock.

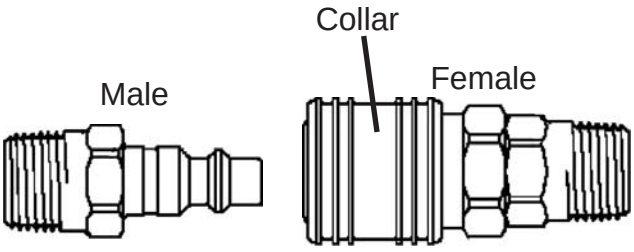
NOTICE

Never adjust the regulator down to the very bottom of adjustment range, damage to the regulator may result

CONNECTING AND DISCONNECTING HOSES

To Connect:

1. Ensure that the regulated pressure gauge reads 0 PSI and that all system pressure is relieved.
2. Hold hose in hand at the quick coupler location.
3. Pull back collar or sleeve on female quick connect coupler located on the compressor.
4. Push male connector into female connector.
5. Release female connector.
6. Grasp hose and pull to ensure couplers are seated.
7. Adjust regulator to the desired pressure.



To Disconnect:

1. Ensure that the regulated pressure gauge reads 0 PSI and that all system pressure is relieved.
2. Hold hose in hand at quick coupler location.
3. Pull back collar or sleeve on female quick connect coupler located on the compressor.
4. Pull male connector out of female connector.
5. Release female connector.

⚠WARNING

Firmly grasp hose in hand when connecting or disconnecting to prevent hose whip.

An improperly seated coupler can blow off the machine when started.

Never decouple the quick coupler when the machine is running.

⚠WARNING

Always release the pressure in the system before coupling or decoupling.

DRAINING AIR RECEIVER CONDENSATE

1. Ensure that the ON/OFF switch is in the OFF position or disconnect the power from the power source.
2. If the unit is portable, move the compressor into an inclined position so that the drain valve(s) are at the lowest point (this will assist in removing moisture, dirt, etc. from tanks)
3. Place a suitable container underneath the drain(s) to catch all of the discharge condensate.
4. Grasp black lever or the knurled drain cock on one drain valve.
5. Slowly rotate lever or drain cock so as to gradually bleed air from tank.
6. If the unit is a twin tank type, then grasp black lever or knurled drain cock on other drain valve and rotate to approximately the same position as the first.
7. When tank pressure gauge reads 10 psi, rotate valve(s) to the fully open position.
8. Close drain valve(s) when finished.

⚠WARNING

Tanks contain high pressure air. Keep face and other body parts away from outlet of drain. Use safety glasses when draining as debris can be kicked up into face. Use ear protection as air flow noise is loud when draining.

NOTICE

All compressed air systems generate condensate that accumulates in any drain point (e.g. tanks, filter, aftercoolers, dryers). This condensate may contain lubricating oil and/or substances which may be regulated and must be disposed of in accordance with local, state, and federal laws and regulations.

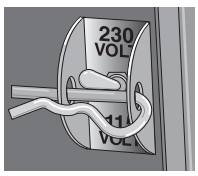
HUMID AREAS

In frequently humid areas, moisture may form in the bare pump and produce sludge in the lubricant, causing running parts to wear out prematurely. Excessive moisture is especially likely to occur if the unit is located in an unheated area that is subject to large temperature changes. Two signs of excessive humidity are external condensation on the bare pump when it cools down and a “milky” appearance in compressor lubricant. You may be able to prevent moisture from forming in the bare pump by increasing ventilation or operating for longer intervals.

DUAL VOLTAGE SWITCH (If so equipped)

The dual voltage switch allows the operator to change the operating voltage of the unit from 115VAC to 230VAC by toggling the switch to the corresponding voltage position.

To change voltage:



1. Remove the safety hitch pin from the switch guard.
2. Move the switch to the desired voltage (115VAC or 230VAC).

3. Replace the safety hitch pin in the guard.
4. Check and/or replace the plug with the UL/CSA listed plug for the rated current and voltage.

Follow the cord plug manufacturers installation instructions and procedures or contact a qualified electrician.

Ensure that all connections are properly tightened. Improper connections could result, causing damage, injury, or death of the equipment operator.

This machine must be connected in accordance with the National Electric Code (NEC) Article 422-4 - Ed-31, Except as provided for in NEC 90-4.

This machine must be properly grounded to avoid fatal electrical shock in the event of an electrical malfunction. A ground connector screw should be fastened into the chassis to facilitate supplemental grounding as permitted by NEC 250-91.

Observe all local and national codes for the installation of this type of equipment.

If there are any questions or problems with the electrical system being used please, do not hesitate in calling a local qualified electrician.

NOISE CONSIDERATIONS

Consult local officials for information regarding acceptable noise levels in your area. Hearing protection may be required if in close proximity to the compressor. To reduce excessive noise, use vibration mounts or silencers, relocate the unit away from the work area or construct total enclosures or baffle walls.

LOCATION CONSIDERATIONS

Stationary Type Compressors

Stationary compressors are permanent type installations and typically are secured in place. There are numerous ways to achieve this type of installation, the most common of which is bolting them to directly to the floor or other part of the building. Often times, vibration isolators are used to reduce noise and vibration and increase stability.

Portable Type Compressors

Portable Compressors are much more universal and can be used in almost any location as long as reasonable care is taken. Please refer to the Danger, Warning and Cautions as to location limitations and safe operation.

NOTICE **Compressors run out of level by over 10 degrees may be permanently damaged.**

Consult all local codes and standards for information regarding installation and location of compressors as they may differ from one locale to another.

TRANSPORTING (Portable Compressors)

If the unit is a portable type either hand carry or wheeled portable, care must be taken when transporting the compressor. When transporting the compressor in a vehicle, trailer, etc. ensure that the tanks are drained and the unit is secured and placed on a flat horizontal surface. Secure the machine in place by use of a rope or some type of strapping. Use care when driving so to avoid tipping the unit over in the vehicle. Damage can occur to the unit or surrounding items if unit is tipped. Use a ramp if loading or unloading the unit from a height of more than 12”.

⚠WARNING **If the unit is a hand carry type compressor, use proper lifting procedures when lifting or carring the unit. If the unit is a wheeled portable type compressor, the unit will weigh more than 160 lbs. Do not move or lift the unit without assistance.**

MOVING (Portable units only)

If the unit is a wheeled portable type; When moving the unit into a position for use, grasp handle grips at rear of compressor, and lift compressor high enough so unit can be rolled on the front tire.

If the unit is a hand carry type; When moving the unit into position for use, grasp the handle at the center of the unit and lift the unit off the ground. Use proper lifting procedures in order to avoid injury.

⚠WARNING **Ensure proper footing and use caution when moving compressor so that unit does not tip or cause loss of balance. When location is reached slowly lower rear of compressor to ground.**

NOTICE **Always store compressor in a horizontal position, on all four rubber mounts. Should the unit tip over, hard starting and smoking will occur due to oil spillage.**

COMPATIBILITY

Air tools and accessories that are run off the compressor must be compatible with petroleum based products. If you suspect that a material is not compatible with petroleum products, an air line filter for removal of moisture and oil vapor in compressed air is required.

NOTICE **Always use an air line filter to remove moisture and oil vapor when spraying paint.**

GENERAL REQUIREMENTS

The piping, fittings, receiver tank, etc. must be certified safe for at least the maximum working pressure of the unit. Use hard welded or threaded steel or copper pipes, cast iron fittings and hoses that are certified safe for the units discharge pressure and temperature. Use pipe thread sealant on all threads, and tighten joints thoroughly to prevent air leaks.

NOTICE **Do not use PVC Plastic pipe or fittings.**

CONDENSATE DISCHARGE PIPING

If installing a condensate discharge line, the piping must be at least one size larger than the connection, as short and direct as possible, secured tightly and routed to a suitable drain point. Condensate must be disposed of in accordance with local, state and federal laws and regulations.

REFUELING (If gasoline engine equipped)

The fuel tank is located on top of the gasoline engine or in an approved red gasoline container. Always refuel with care. Always allow the engine to cool.

Gasoline is extremely flammable and its vapors can explode if ignited. Store gasoline only in approved containers, in well-ventilated, unoccupied buildings, away from sparks or flames.

Do not fill the fuel tank while the engine is hot or running, since spilled fuel could ignite if it comes in contact with hot parts or sparks from ignition.

Do not start the engine near spilled fuel; wipe up spills immediately. Never use gasoline as a cleaning agent.

Do not fill the fuel tank to the point of over flowing. Allow approximately 1-1/4" of tank space for expansion.

Shut off fuel valve on engine before transporting unit to prevent fuel leaking from carburetor.
STORAGE

Always store the compressor in the horizontal position on the machine's rubber feet and/or wheels.

Always ensuring the pump is upright so that the oil does not flow into the cylinder or out the crankcase breather.

GROUNDING

In the event of a malfunction or breakdown, proper grounding provides a path of least resistance for electric current to travel and this reduces the risk of electric shock. This compressor is equipped with an electric cord having an equipment grounding conductor and grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Make sure that the electrical circuit to which the compressor is connected provides proper electrical grounding, correct voltage and adequate fuse protection.

⚠WARNING **Do not modify plug provided as this could result in electrical shock or machine electrical malfunction : if it will not fit the outlet, have the proper outlet installed by a qualified electrician.**

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment grounding conductor. If repairing or replacing the electric cord or plug is necessary, do

not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood or if in doubt as to whether the unit is properly grounded.

⚠CAUTION **Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles.**

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood or if in doubt as to whether the tool is properly grounded.

STARTING PROCEDURE

1.) **Position compressor and receiver tank in a safe work area if not already so located or if the unit is of a portable type.**

Place the compressor and receiver in the designated work area. Leave a minimum of 3 feet clearance around the unit for work space.

⚠WARNING **This unit requires adequate ventilation and must be placed in a location which provides at least three feet of clearance to all adjacent construction. Failure to allow adequate ventilation or restrict the air flow may cause the machine to overheat. Damage to the machine, operator, and any other unit, product, and accessory in the air stream may result.**

NOTICE **Compressors run out of level by over 10 degrees may be permanently damaged.**

⚠DANGER **Do not locate near flammable or combustible liquids or operate in flammable or combustible atmosphere. A fire or explosion may result.**

2.) **Inspect for and tighten any loose nuts and/or bolts.**

3.) **Inspect the controls, instruments, and gauges for damage or loose mountings.**

4.) **Inspect all hoses for kinks and loose connections.**

5.) **Inspect electrical wiring for cuts, fraying, and loose connections.**

6.) **Inspect all tubing and piping for loose connections or damage.**

7.) **Check all accessories for damage and loose mountings.**

8.) **Connect plumbing or air hoses.**

Tighten all connections securely. Use pipe dope or teflon tape to help seal the connections that require the use of a wrench. See the section on connecting and disconnecting air hoses.

⚠CAUTION **Do not operate this unit with any components rated less than the maximum operating pressure of the unit.**

9.) **If machine is electric powered, connect electrical service using a fusible disconnect switch. Ensure that the machine is connected to the proper power supply both amperage and voltage.**

Ensure that all connections are properly tightened. Improper connections could result, causing damage, injury, or death of the equipment operator.

This machine must be connected in accordance with the National Electric Code (NEC) Article 422-4 - Ed-31, Except as provided for in NEC 90-4.

This machine must be properly grounded to avoid fatal electrical shock in the event of an electrical malfunction. A ground connector screw should be fastened into the chassis to facilitate supplemental grounding as permitted by NEC 250-91.

Do not connect any other equipment to the electrical circuit serving this unit.

Do not replace a fuse or circuit breaker with one of a higher rating without being certain the wire size is adequate to handle the increased electrical load.

Keep all electrical connections dry and off of the ground.

Observe all local and national codes for the installation of this type of equipment.

If the wire size being used is too small, the voltage drop will be high, and this will cause the motor to draw excessive current and overheat.

If there are any questions or problems with the electrical system being used please, do not hesitate in calling a local qualified electrician.

10.) **Ensure preventive equipment service was performed prior to operation.**

11.) **Review all Danger, Warning, and Caution information located on the machine and in the Operator's Manual.**

12.) **Check to be certain that all the control switches are in the off position.**

NOTICE **The unit may be capable of starting automatically.**

13.) **If machine is electric powered, turn the power on to the machine.**

14.) **Start the unit.**

Constant Run Control Equipped -

If the unit is a constant run equipped and does not have an On/Off Switch, the unit will start immediately. If the unit is equipped with an On/Off switch move the switch to the On position.

Start/Stop Control -

If the unit is Start/Stop equipped and does not have an On/Off switch turn the OFF-AUTO (MAN) switch from the OFF position to either the MAN or AUTO position. If the unit is equipped with an On/Off switch move the switch to the On position.

Dual Control -

If the unit is Dual Control equipped and does not have an On/Off switch turn the OFF-AUTO (MAN) switch from the OFF position to either the MAN or AUTO position. If the unit is equipped with an On/Off switch move the switch to the On position.

Starting Gasoline Engine (If so equipped) -

If so equipped, your air compressor is powered by a Honda® gasoline engine. Most accidents with engines can be prevented if you follow all instructions in this manual, the engine owner's manual and on the engine. Follow the instructions in the owners manual for the proper starting procedure.

1. Turn the engine switch to the On or Run position

2a. If the engine is only rope start, pull rope to start. Continue until engine is running.

2b. If electric start, turn switch past the On position to the Start position. Hold switch in Start position until engine is running, then release.

SHUTDOWN PROCEDURE

1.) **Turn off the unit.**

Constant Run Control Equipped -

If the unit is a constant run equipped and does not have an On/Off Switch, the unit will continue to run until the power is removed from the unit. To stop the unit, allow the unit to reach reache its cut-out pressure. At which point, the unit will continue to run at a significantly lower amp draw and will not charge air. A slight air noise may be heard which is the unloading of the air through the pump head. Disconnect the unit from the power source.

If the unit is equipped with an On/Off switch move the switch to the OFF position.

Start/Stop Control -

If the unit is Start/Stop equipped and does not have an On/Off switch turn the OFF-AUTO (MAN) switch from either the MAN or AUTO position to the OFF position. If the unit is equipped with an On/Off switch move the switch to the OFF position.

Dual Control -

If the unit is Dual Control equipped and does not have an On/Off switch turn the OFF-AUTO (MAN)

switch from either the MAN or AUTO position to the OFF position. If the unit is equipped with an On/Off switch move the switch to the OFF position.

Stopping Gasoline Engine (If so equipped) -

If so equipped, your air compressor is powered by a gasoline engine. Most accidents with engines can be prevented if you follow all instructions in this manual, the engine owner's manual and on the engine. Follow the instructions in the owners manual for the proper stopping procedure.

A. Turn the engine switch to the OFF position

B. Close the fuel shutoff valve.

2.) **If machine is electric powered, disconnect the machine from the electrical service.**

3.) **Inspect for and tighten any loose nuts and/or bolts.**

4.) **Check all accessories for damage and loose mountings. Replace or repair any damaged accessories.**

4.) **Inspect the controls, instruments, and gauges for damage or loose mountings. Replace or repair any damaged controls, instruments, or gauges.**

7.) **Inspect all hoses for kinks and loose connections. Replace or repair any damaged hoses.**

8.) **Inspect electrical wiring for cuts, fraying, and loose connections. Replace or repair any damaged electrical wire(s).**

9.) **Inspect all tubing and piping for loose connections or damage. Replace or repair any damaged tubing or piping.**

10.) **Drain Condensate from tanks(s). Follow the procedure for Draining Air Receiver condensate.**

11.) **If the unit is portable, relocate compressor to suitable storage location.**

Section 5

Maintenance Instructions

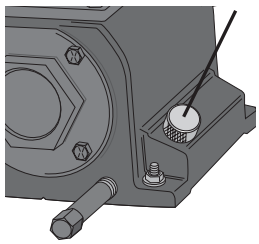
PREVENTIVE MAINTENANCE CHECKS

CHECKING COMPRESSOR PUMP OIL LEVEL

⚠WARNING **Aftercooler, pump head, and surrounding parts are very hot, do not touch.**

⚠CAUTION **Do not operate without lubricant or with inadequate lubricant. Jenny can not be responsible for compressor failure caused by inadequate lubrication.**

1. Ensure Unit is off and disconnect from the power source
2. Locate unit onto a flat horizontal surface.
3. Remove knurled oil fill plug from crankcase.
4. Insert a clean screwdriver into the crankcase and remove it.
5. Look for visual signs of contaminants (water, dirt, etc.) Change pump oil if contaminants are present.
6. Oil should not exceed top raised line on side of crankcase (oil will be even with bottom of threads in crankcase fill port). If necessary fill with Jenny Ultimate Blue synthetic oil.

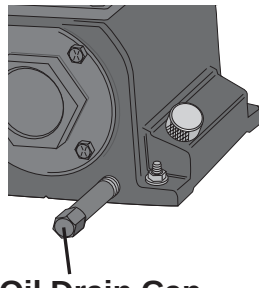


CHANGING COMPRESSOR PUMP OIL

⚠WARNING **Aftercooler, pump head, and surrounding parts are very hot, do not touch.**

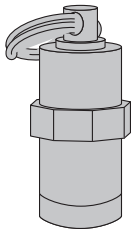
⚠CAUTION **Do not operate without lubricant or with inadequate lubricant. Jenny can not be responsible for compressor failure caused by inadequate lubrication.**

1. Ensure unit is off and disconnected from the power source
2. Locate unit onto a flat horizontal surface.
3. Remove knurled oil fill plug from crankcase.
4. Place approved oil collection container underneath the oil drain cap. The use of a funnel may be required to help the oil collection and drainage procedure.
5. Remove the oil drain cap.
6. Allow oil to drain from compressor pump.
7. Look for visual signs of contaminants (water, dirt, etc...). This might help in identifying irregular running conditions, maintenance issues or potential future problems.
8. Replace oil drain cap on the oil drain pipe. Tighten the connection securely. Use pipe dope or teflon tape to help seal the connection.
9. Fill the crankcase with Jenny Ultimate Blue synthetic oil. Oil should not exceed top raised line on side of crankcase (oil will be even with bottom of threads in crankcase fill port).



CHECKING SAFETY RELIEF VALVE OPERATION

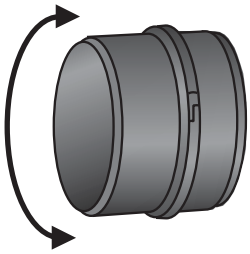
⚠WARNING **Aftercooler, pump head, and surrounding parts are very hot, do not touch.**



1. Ensure unit is off and disconnected from the power source.
2. Ensure tanks are empty by looking at tank pressure gauge. Drain tanks if necessary.
3. Grasp wire ring on safety valve.
4. Pull and release ring a few times to ensure plunger moves in and out.

CHECKING AIR FILTER ELEMENT

⚠WARNING **Aftercooler, pump head, and surrounding parts are very hot, do not touch.**



1. Ensure unit is off.
2. Allow unit to cool.
3. Unscrew filter top from filter base by turning counter clockwise about 5 degrees.
4. Separate filter top from base.
5. Remove element from filter base.
6. If element needs cleaning, blow out with air. Replace element if unsure.
7. Place element back in filter base.
8. Reconnect filter top to filter base and while pushing in, rotate top clockwise 5 degrees.

PILOT VALVE CUT-OUT PRESSURE ADJUSTMENT

NOTICE **Unit can remain running while performing this adjustment.**

⚠WARNING **Aftercooler, pump head, and surrounding parts are very hot; do not touch.**

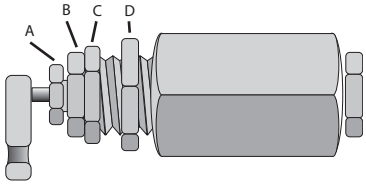
Moving Parts: Keep your hair, clothing and gloves away from moving parts. Loose clothing, jewelry, or long hair can be caught in moving parts. Air vents may cover moving parts and should be avoided as well. Do not remove the protective covers from this product.

⚠CAUTION **The pilot valve is brass which is a soft metal. Do not overtighten screw as threads can strip out.**

1. Hold “C” firmly and loosen nut “B”.

⚠WARNING **Do not loosen screw “A” more than 1 revolution as screw is subjected to tank pressure and can burst out which can harm the user or surrounding personnel.**

2. Turn screw “A” clockwise to increase cut-out pressure limit or counter clockwise to decrease cut-out pressure. (example: if the cut-out pressure on the tank gauge reads 120 psi. and desired cut out is 130 psi, turn screw “A” clockwise)
3. Drain air from tanks through drain valves until pump begins to charge tanks.
4. Close drain valves.
5. Monitor cut-out pressure to verify the new setting
6. Once setting is complete hold screw “A” firmly
7. Hold “C” firmly and tighten nut “B”



PILOT VALVE PRESSURE DIFFERENTIAL ADJUSTMENT

NOTICE **Unit can remain running while performing this adjustment.**

⚠WARNING **Aftercooler, pump head, and surrounding parts are very hot; do not touch.**

Moving Parts: Keep your hair, clothing and gloves away from moving parts. Loose clothing, jewelry, or long hair can be caught in moving parts. Air vents may cover moving parts and should be avoided as well. Do not remove the protective covers from this product.

1. Hold “C” firmly and loosen nut “D”

⚠CAUTION **Do not loosen barrel “C” more than 1 revolution as barrel is subjected to tank pressure and can burst out which can harm the user or surrounding personnel.**

2. Turn barrel “C” clockwise to increase differential or counter clockwise to decrease differential. (for example: if pressure differential is 100 –130 psi and 100–120 psi is desired, turn “C” counterclockwise)

NOTICE **Too narrow of a differential can cause chatter of the pilot valve. Increase differential to eliminate chatter.**

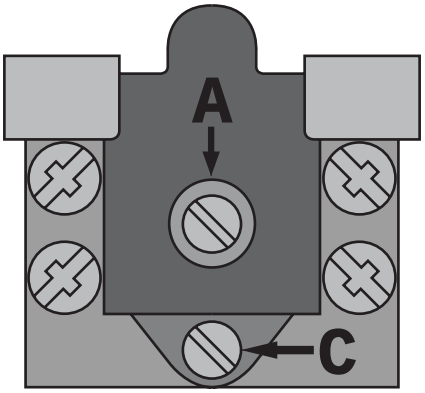
3. Hold barrel “C”
4. Hold “C” firmly and tighten nut “D”

PRESSURE SWITCH ADJUSTMENT

NOTICE **Unit can remain running while performing this adjustment**

There is live electrical power on the four contact points on the switch. Use only electrically insulated tools to perform this adjustment in case of accidental contact with the electrical system.

Pressure Range Adjustment



To increase the pressure range: Turn screw A clockwise to increase the overall system pressure range (both cut-in and cut-out).

To decrease the pressure range: Turn screw A counter clockwise to decrease the overall system pressure range (both cut-in and cut-out).

Differential Pressure Range Adjustment

To increase the cut-in pressure: Turn screw C clockwise to increase the differential cut in pressure.

To decrease the cut-in pressure: Turn screw C counterclockwise to decrease the differential cut in pressure.

⚠CAUTION **Do not set the pressure switch cut-out pressure higher than the maximum factory setting. This will cause the motor to draw excessive amps and cause damage to the electrical system and motor.**

DRIVE BELT ADJUSTMENT

Check tension of compressor drive v-belts. The first 24 hours of operation and check tension of v-belts frequently. Make adjustments as follows:

1.) **Shut down unit.**

2.) **Disconnect unit from power supply.**

3.) **Check to be certain that all the control switches are in the off position.**

4.) **Allow unit to cool down so pump can be touched.**

5.) **Remove the belt guard from the machine.**

6.) **Attach a belt tension gauge to the center of the span between the motor and compressor sheaves.**

7.) **Follow the operational directions of the belt drive tension gauge.**

8.) **Scribe a mark on the deck of the unit along the edge of the motor base to be used as a**

reference location.

9.) **If the deflection of belt too great, then loosen the motor or engine bolts and slide the motor or engine away from the pump. If the deflection of belt too small, then loosen the motor or engine bolts and slide the motor or engine toward the pump.**

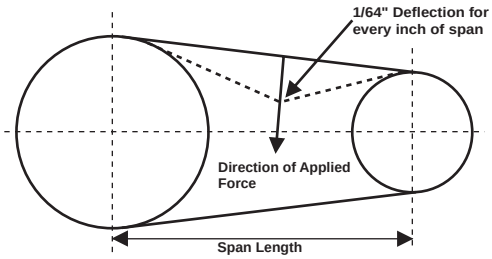
A.) Remove the Belt
B.) Scribe a mark approximately 1/8” from the original reference mark.
C.) Loosen the 4 screws holding the electric motor or gasoline engine.
D.) Slide the motor or engine to the new mark.
E.) Ensure that the pulleys are in alignment. Use a straight edge to check.
F.) Properly tighten the 4 screws to hold the electric motor or gasoline engine in place.
G.) Roll the belt onto motor pulley and then the pump flywheel.

Care must be taken when rolling the belt onto the pulleys, as fingers can get caught between the belt and the pulleys.

10.) **Recheck the belt tension with the gauge.**

11.) **Repeat steps 6 & 7 until the proper belt tension is achieved.**

If no belt tension gauge is available, then use this figure to roughly approximate the belt drive tension. The amount of forced to be applied is approximately 8 lbs. Use a ruler to measure the deflection. This is only a temporary solution and a belt drive tension gauge should be used as soon as possible.



⚠WARNING **Drive pulleys must be properly aligned and belt drive tension must be set to specification. Improper pulley alignment and belt tension can cause motor overloading, excessive vibration and premature belt and/or bearing failure.**

CHECKING FOR AIR LEAKS

NOTICE **Unit must be pressurized while performing this task.**

1.) **Start unit and allow it to come up to pressure.**

2.) **Apply a solution soapy water around all the joints, fittings and hose connections.**

3.) **Look for air bubbles.**

4.) **If air bubbles are found, shut the unit down, bleed off all the air, and allow to cool.**

4.) **Tighten or replace any joints, fittings or hose connections that are found to be leaking.**

⚠CAUTION **Do not attempt to tighten or repair any joints, fittings or hoses while the unit is pressurized.**

PREVENTIVE MAINTENANCE SCHEDULE

GENERAL

Preventive maintenance pays off in many ways. Avoid long serious downtimes, costly delays, and harmful effects to intricate parts of compressor. Do all repair work at your convenience without jeopardizing manufacturing and shipping schedules, and preventive maintenance will reduce the chances of industrial accidents.

To ensure efficient maintenance free life span, the Jenny compressor must be serviced and maintained by the operator and qualified maintenance personnel on a periodic and systematic basis. Preventive Maintenance Checks and Services are outlined below. By following this inspection schedule, most defects will be discovered and corrected, or avoided, before they result in serious damage.

Dirt is the most common cause of faulty operation and excessive wear. Every precaution should be taken to prevent contamination from entering the compressor. The most essential preventive measures are proper maintenance of the air cleaner element and compressor oil. Detailed preventive maintenance checks and services follows:

Procedure	Daily	Weekly	Monthly	Annually (200 Hrs.)
Check pump oil level	X			
Oil leak inspection	X			
Drain condensation in air tanks	X			
Check for unusual noise/vibration	X			
Check for air leaks	X			
Inspect belt(s)	X			
Inspect air filter(s). Clean or replace if necessary		X		
Clean exterior of compressor		X		
Check safety relief valve			X	
Check belt adjustment			X	
Check and tighten all bolts			X	
Check air connections and compressor joints for leaks			X	
Change pump and/or engine oil				X

NOTICE **The pump oil must be changed after the first 20 hours of operation. The will remove contaminants contained in the crankcase due to break-in.**

⚠CAUTION **In the presence of harsh operating conditions and environments, the oil change and air cleaner change interval should be performed on a more accelerated schedule.**

SERVICE INFORMATION

Please have the following information available for all service calls:

Model Number: _____

Serial Number: _____

Date of Purchase: _____

Place of Purchase: _____

REPAIRS

To assure product SAFETY and RELIABILITY, repairs, maintenance and adjustment should be performed by authorized service centers or other qualified service organizations, always using identical replacement parts. For the closest warranty repair center, please contact us.

WARRANTY

Full One Year Warranty - Jenny Compressors are warranted for one year from date of purchase. We will repair, without charge, any defects due to faulty materials or workmanship.

For warranty repair information, call 1-888-4-A-Jenny.

This warranty does not apply to accessories or damage caused where repairs have been made or attempted by others. This warranty gives you specific legal rights and you may have other rights which vary in certain states or provinces.

FREE WARNING LABEL REPLACEMENT

If your warning labels become illegible or are missing, call 1-888-4-A-Jenny for a free replacement.

Jenny Products, Inc.
850 North Pleasant Avenue
Somerset, PA 15501

Ph: (814) 445-3400
Fx: (814) 445-2280
Web: www.jennycompressor.com
e-mail: info@ jennycompressor.com

Section 6

Troubleshooting Instructions

TROUBLESHOOTING

The following chart lists the malfunctions that occur most commonly when operating an industrial air compressor. It gives the symptoms, their causes and the corresponding corrective actions. In some cases, the operator or maintenance personnel can perform the corrective actions, while others may require the assistance of a qualified Jenny compressor technician or dealer.

This procedure has been written assuming that the unit has been installed correctly, has been operating and functioning correctly. The voltage or pressure ratings listed within the troubleshooting tables are ± 5% unless otherwise specified. The dependent sequence of events are illustrated as they must occur and to determine at what point in the troubleshooting to begin you must know what mode of operation the malfunction is occurring. To accomplish this, the operator must read and understand the theory of operation in chapter 4. Once you can observe the unit and recognize the modes as the unit automatically switches into them, you should be very successful in determining what to do using these procedures.

⚠DANGER **This unit contains lethal voltages, hazardous temperatures, dangerous pressure and moving parts which may cause serious injury to personnel. Perform troubleshooting with extreme caution.**

Troubleshooting Guide

Problem	Possible Cause	Possible Solution
Compressor does not start or restart	Power cord not plugged in.	Plug cord into grounded outlet.
	Motor thermal overload switch has tripped.	Turn air compressor off, wait until motor is cool, if motor is a manual reset type, then press motor thermal overload button firmly until click is heard. (Located on motor)
	Fuse blown or circuit has tripped.	Replace fuse or reset circuit breaker. Check for proper fuse; only “Fusetron” type T fuses are acceptable. Check for low voltage conditions. Disconnect any other electrical appliances from circuit or operate air compressor on its own branch circuit.
	Wrong gauge wire or length of extension cord.	Check chart for proper gauge wire and cord length. If possible, eliminate extension cord.
	Defective motor, motor capacitor or pressure switch.	Contact Jenny Customer Service at 1-888-4-A-JENNY.
	Tanks have air pressure in them.	Bleed tanks fully.
	Engine oil too low. Low oil shut off is on.	Add engine oil.
	Manual lock on pilot valve is in the loaded position.	Move manual lock into an in-line position.
	Engine idle speed too low.	Increase idle speed.
	Engine problem.	See “Taking care of unexpected problems” in engine owners manual.
Compressor Stalls	Air compressor on unlevel surface.	Do not incline the air compressor more than 10° in any direction while running.
	Engine idle speed too low.	Increase idle speed.
	Engine problem.	See “Taking care of unexpected problems” in engine owners manual.
Unit does not or is slow to come up to speed.	Lubricant viscosity too high.	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Carbon build up on top of piston.	Clean piston. Repair or replace as required.
	Connecting rod, piston pin, or crank wrist pin bearings worn or scored.	Inspect all. Repair or replace as required.
	Crankshaft seal worn or crankshaft scored.	Replace seal or crankshaft assembly.

Problem	Possible Cause	Possible Solution
	Ambient temperature too low.	Relocate unit to warmer environment. Ensure Jenny Ultimate Blue Synthetic Oil is in crankcase.
	Worn cylinder finish.	Deglaze cylinder with 180 grit flex-hone
	Defective motor, motor capacitor or pressure switch.	Contact Jenny Customer Service at 1-888-4-A-JENNY.
	Air compressor is not large enough for air required.	Check the accessory air requirement. If it is higher than the CFM or pressure supply of the air compressor, you need a larger air compressor.
	Possible defective safety/relief valve.	Operate safety relief valve manually by pulling on test ring. If it still leaks, replace.
	Defective gaskets.	Replace and torque head bolts to 6 - 7 ft lb.
	Fittings not tight enough or leaking.	Warning drain air before tightening: tighten fittings where air can not be heard escaping. Check joint with soap solution. Do not overtighten.
	Crankcase overfilled with oil.	Drain oil. Refill to proper level with Jenny Ultimate Blue Synthetic Oil.
	Manual lock on pilot valve is in the loaded position.	Move manual lock into an in-line position.
	Engine idle speed too low.	Increase idle speed.
	Engine problem.	See “Taking care of unexpected problems” in engine owners manual.
Air compressor not making enough air.	Clogged or dirty inlet and or discharge line filter.	Clean or replace.
	Lubricant viscosity too high	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Compressor check valve leaky, broken, carbonized or loose.	Clean or replace as required. Inspect valves.
	Carbon build up on top of piston.	Clean piston. Repair or replace as required.
	Piston rings damaged or worn (broken, rough, or scratched). Excessive end gap or side clearance. Piston rings not seated, are stuck in grooves or end gaps not staggered.	Install new rings.
	Cylinder or piston scratched, worn, or scored.	Repair or replace as required.

Problem	Possible Cause	Possible Solution
	Connecting rod, piston pin, or crank wrist pin bearings worn or scored.	Inspect all. Repair or replace as required.
	Air compressor is not large enough for air required.	Check the accessory air requirement. If it is higher than the CFM or pressure supply of the air compressor, you need a larger air compressor.
	Defective gaskets.	Replace and torque head bolts to 6 - 7 ft lb.
	Fittings not tight enough or leaking.	Warning drain air before tightening: tighten fittings where air can not be heard escaping. Check joint with soap solution. Do not overtighten.
	Hose or hose connections are to small or long.	Replace with larger hose or connectors.
	Possible defective reed valve. (Hand Carry Units)	Remove pump head and inspect valve plate and (reed) valve. Clear or replace valves as required.
Insufficient pressure at air tool or accessory	Clogged or dirty inlet and or discharge line filter.	Clean or replace.
	Lubricant viscosity too high	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Compressor check valve leaky, broken, carbonized or loose.	Clean or replace as required. Inspect valves.
	Carbon build up on top of piston.	Clean piston. Repair or replace as required.
	Piston rings damaged or worn (broken, rough, or scratched). Excessive end gap or side clearance. Piston rings not seated, are stuck in grooves or end gaps not staggered.	Install new rings.
	Cylinder or piston scratched, worn, or scored.	Repair or replace as required.
	Connecting rod, piston pin, or crank wrist pin bearings worn or scored.	Inspect all. Repair or replace as required.
	Air compressor is not large enough for air required.	Check the accessory air requirement. If it is higher than the CFM or pressure supply of the air compressor, you need a larger air compressor.
	Defective gaskets.	Replace and torque head bolts to 6 - 7 ft lb.

Problem	Possible Cause	Possible Solution
	Fittings not tight enough or leaking.	Warning drain air before tightening: tighten fittings where air can not be heard escaping. Check joint with soap solution. Do not overtighten.
	Pressure regulator knob not turned to high enough pressure or defective pressure regulator.	Adjust pressure regulator knob to proper setting or replace.
	Hose or hose connections are to small or long.	Replace with larger hose or connectors.
	Possible defective reed valve. (Hand Carry Units)	Remove pump head and inspect valve plate and (reed) valve. Clear or replace valves as required.
High oil consumption.	Lubricant viscosity too low	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Extremely light duty cycles.	Run unit for longer duty cycles
	Piston rings damaged or worn (broken, rough, or scratched). Excessive end gap or side clearance. Piston rings not seated, are stuck in grooves or end gaps not staggered.	Install new rings.
	Cylinder or piston scratched, worn, or scored.	Repair or replace as required.
	Connecting rod, piston pin, or crank wrist pin bearings worn or scored.	Inspect all. Repair or replace as required.
	Crankshaft seal worn or crankshaft scored.	Replace seal or crankshaft assemby.
	Worn cylinder finish.	Deglaze cylinder with 180 grit flex-hone.
	Air compressor on unlevel surface.	Do not incline the air compressor more than 10° in any direction while running.
	Plugged oil crankcase vent.	Clean.
Unit runs excessively hot.	Clogged or dirty inlet and or discharge line filter.	Clean or replace.
	Lubricant viscosity too low	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Lubricant level too low	Add Jenny Ultimate Blue Synthetic Oil to crankcase to proper level. Check for bearing damage.
	Detergent type lubricant being used.	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Cylinder or piston scratched, worn, or scored.	Repair or replace as required.

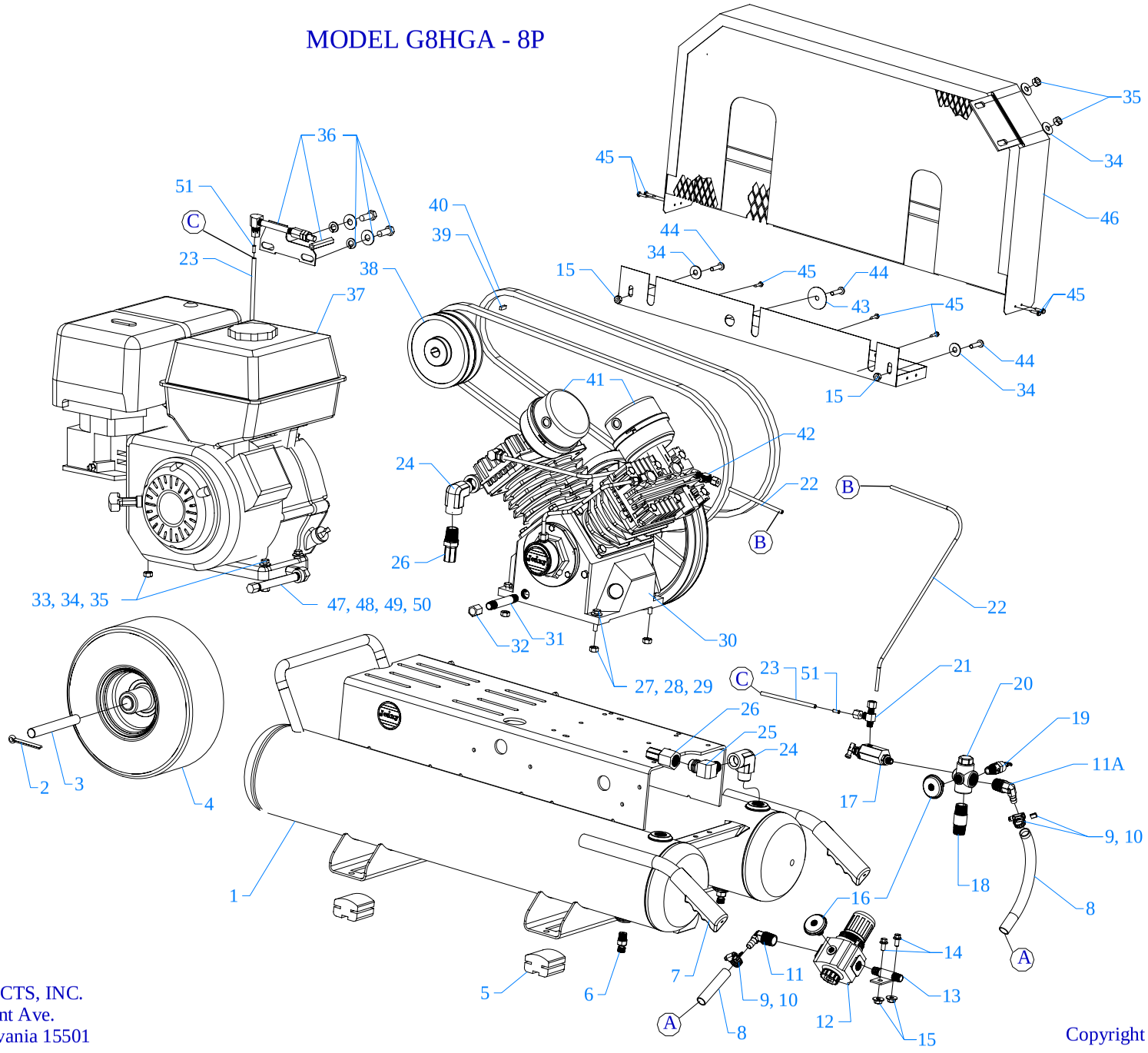
Problem	Possible Cause	Possible Solution
	Connecting rod, piston pin, or crank wrist pin bearings worn or scored.	Inspect all. Repair or replace as required.
	Crankshaft seal worn or crankshaft scored.	Replace seal or crankshaft assembly.
	Extremely dusty atmosphere.	Install more effective filtration or relocate unit.
	Worn cylinder finish.	Deglaze cylinder with 180 grit flex-hone.
	Wrong gauge wire or length of extension cord.	Check chart for proper gauge wire and cord length. If possible, eliminate extension cord.
	Air compressor on unlevel surface.	Do not incline the air compressor more than 10° in any direction while running.
Excessive starting and stopping	Compressor check valve leaky, broken, carbonized or loose.	Clean or replace as required. Inspect valves.
	Defective motor, motor capacitor or pressure switch.	Contact Jenny Customer Service at 1-888-4-A-JENNY.
	Air compressor is not large enough for air required.	Check the accessory air requirement. If it is higher than the CFM or pressure supply of the air compressor, you need a larger air compressor.
	Defective gaskets.	Replace and torque head bolts to 6 - 7 ft lb.
	Fittings not tight enough or leaking.	Warning drain air before tightening: tighten fittings where air can not be heard escaping. Check joint with soap solution. Do not overtighten.
	Possible defective reed valve. (Hand Carry Units)	Remove pump head and inspect valve plate and (reed) valve. Clear or replace valves as required.
Excessive noise during operation	Lubricant viscosity too low	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Lubricant viscosity too high.	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Lubricant level too low	Add Jenny Ultimate Blue Synthetic Oil to crankcase to proper level. Check for bearing damage.
	Detergent type lubricant being used.	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Carbon build up on top of piston.	Clean piston. Repair or replace as required.

Problem	Possible Cause	Possible Solution
	Piston rings damaged or worn (broken, rough, or scratched). Excessive end gap or side clearance. Piston rings not seated, are stuck in grooves or end gaps not staggered.	Install new rings.
	Cylinder or piston scratched, worn, or scored.	Repair or replace as required.
	Connecting rod, piston pin, or crank wrist pin bearings worn or scored.	Inspect all. Repair or replace as required.
	Crankshaft seal worn or crankshaft scored.	Replace seal or crankshaft assembly.
	Worn cylinder finish.	Deglaze cylinder with 180 grit flex-hone.
	Fittings not tight enough or leaking.	Warning drain air before tightening: tighten fittings where air can not be heard escaping. Check joint with soap solution. Do not overtighten.
	Possible defective reed valve. (Hand Carry Units)	Remove pump head and inspect valve plate and (reed) valve. Clear or replace valves as required.
	Air compressor on unlevel surface.	Do not incline the air compressor more than 10° in any direction while running.
	Crankcase overfilled with oil.	Drain oil. Refill to proper level with Jenny Ultimate Blue Synthetic Oil.
Moisture in discharge air.	Condensation in air tank caused by high level of atmospheric humidity.	Drain air tank after every use. Drain air tank more often in humid weather and use an air line filter.
	Unit located in damp or humid location.	Relocate unit.
Moisture in crankcase or “milky” appearance in petroleum lubricant or rusting in cylinders.	Extremely light duty cycles.	Run unit for longer duty cycles
	Compressor check valve leaky, broken, carbonized or loose.	Clean or replace as required. Inspect valves.
	Piston rings damaged or worn (broken, rough, or scratched). Excessive end gap or side clearance. Piston rings not seated, are stuck in grooves or end gaps not staggered.	Install new rings.
	Cylinder or piston scratched, worn, or scored.	Repair or replace as required.
	Worn cylinder finish.	Deglaze cylinder with 180 grit flex-hone.

Problem	Possible Cause	Possible Solution
	Fittings not tight enough or leaking.	Warning drain air before tightening: tighten fittings where air can not be heard escaping. Check joint with soap solution. Do not overtighten.
	Defective or rusted air tank	Air tank must be replaced. Do not attempt to repair air tank
	Water in oil due to condensation.	Drain oil. Refill to proper level with Jenny Ultimate Blue Synthetic Oil.
	Unit located in damp or humid location.	Relocate unit.
Oil in discharge air (oil pumping)	Lubricant viscosity too low	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Extremely light duty cycles.	Run unit for longer duty cycles
	Carbon build up on top of piston	Clean piston. Repair or replace as required.
	Piston rings damaged or worn (broken, rough, or scratched). Excessive end gap or side clearance. Piston rings not seated, are stuck in grooves or end gaps not staggered.	Install new rings.
	Cylinder or piston scratched, worn, or scored.	Repair or replace as required.
	Connecting rod, piston pin, or crank wrist pin bearings worn or scored.	Inspect all. Repair or replace as required.
	Worn cylinder finish.	Deglaze cylinder with 180 grit flex-hone.
	Crankcase overfilled with oil.	Drain oil. Refill to proper level with Jenny Ultimate Blue Synthetic Oil.
	Plugged oil crankcase vent.	Clean.
Oil leaking from shaft seal	Crankshaft seal worn or crankshaft scored.	Replace seal or crankshaft assembly.
Safety relief valve “pops” or reliefs pressure.	Possible defective safety/relief valve	Operate safety relief valve manually by pulling on test ring. If it still leaks, replace.
	Excessive air tank pressure	Adjust pilot valve or pressure switch. If problem still exists replace pilot valve or pressure switch.
Air leaks at pump.	Defective gaskets.	Replace and torque head bolts to 6 - 7 ft lb.
	Fittings not tight enough or leaking.	Warning drain air before tightening: tighten fittings where air can not be heard escaping. Check joint with soap solution. Do not overtighten.

Problem	Possible Cause	Possible Solution
Air leaks at fittings.	Fittings not tight enough or leaking.	Warning drain air before tightening: tighten fittings where air can not be heard escaping. Check joint with soap solution. Do not overtighten.
Air leaks from tank.	Defective or rusted air tank.	Air tank must be replaced. Do not attempt to repair air tank
Abnormal piston ring or cylinder wear.	Lubricant viscosity too low	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Lubricant level too low	Add Jenny Ultimate Blue Synthetic Oil to crankcase to proper level. Check for bearing damage.
	Detergent type lubricant being used.	Drain existing lubricant and refill with Jenny Ultimate Blue Synthetic lubricant.
	Extremely light duty cycles.	Run unit for longer duty cycles
	Piston rings damaged or worn (broken, rough, or scratched). Excessive end gap or side clearance. Piston rings not seated, are stuck in grooves or end gaps not staggered.	Install new rings.
	Cylinder or piston scratched, worn, or scored.	Repair or replace as required.
	Connecting rod, piston pin, or crank wrist pin bearings worn or scored.	Inspect all. Repair or replace as required.
	Extremely dusty atmosphere.	Install more effective filtration or relocate unit

MODEL G8HGA - 8P



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Somerset, Pennsylvania 15501

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Parts List for Model G8HGA-8P

NOTE: The quantity number indicates the total number of pieces required for a complete unit repair.
When ordering parts give compressor model, serial number and part number. Order assemblies when possible.

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	411-1014	TANK,PORTBL,8G,NON,K&G&GTG,RPLMT,Gas	1
2	120-1286	PIN,COTTER,PLATED,3/16 DIAX2 LONG	2
3	150-1218	AXLE,STEEL,PLATED,8P,5/8"DIAX5"LONG	1
4	150-1219	WHEEL,PNEUM,410/350X4,4"CNTRD,5/8"ID	1
5	104-1249	PAD,RUBBER,40D,11GA,1-1/4X1-7/8X2-1/2,WP	4
6	141-1058	DRAIN,PETCOCK,BRASS,1/4"NPTM,DC14	2
7	104-1072	GRIP,HANDLE,RUBBER,YELLOW,7/8",STERILE	2
8	104-1001	HOSE,AIR,200 PSI,3/8"IDX18"LONG	1
9	120-1173	CLAMP,HOSE,GEAR,WORM,SS,5/16" TO 7/8"	2
10	104-1075	CAP,COVER,PLASTIC,RED,0.40 X 1/4"X 3/8"	2
11	121-1145	BARB,HOSE,ELBOW,MALE,BRASS,3/8HSX3/8NPTM	1
11A	121-1143	BARB,HOSE,ELBOW,MALE,BRASS,3/8HSX1/2NPTM	1
12	160-1001	REGULATOR,PRESSURE,AIR,3/8"NPT	1
12A	360-1109	REGULATOR,PRESSURE,AIR,W/PG14,3/8"N,R38 INCLUDES 12,16,3/8 PLUG	1
13	150-1083	BRACKET,REGULATOR,STEEL,PLATED,3/8",BR	1
13A	320-1029	BRACKET,REGULATOR,W/HARDWARE,ASSY,BR INCLUDES 13,14,15	1
14	120-1243	SCREW,FLANGE,HEX,SERR,ST,PL,1/4-20X 1/2	2
15	120-1116	NUT,LOCK,FLANGE,HEX,SERR,ST,PLTD,1/4-20	4
16	142-1003	GAUGE,PSI,200#,BK MT,JENNY,1.5,1/4",PG14	2
17	141-1047	VALVE,PILOT,W/HAND UNLOADER,125PSI,1/4"M	1
18	122-1145	NIPPLE,STEEL,SCH 80,PLTD,1/2" X 1-1/2" L	1
19	141-1004	VALVE,SAFETY,ASME,1/4",165 PSI,54 SCFM	1

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Parts List for Model G8HGA-8P

NOTE: The quantity number indicates the total number of pieces required for a complete unit repair.
When ordering parts give compressor model, serial number and part number. Order assemblies when possible.

REF. NO.	PART NO.	DESCRIPTION	QTY.
20	220-1121	BLOCK,MANIFOLD,ZINC,5 HOLE,TAPPED,MC-5	1
21	121-1038	TEE,RUN,BRASS,1/4"TBX1/4TBX1/8"NPTM	1
22	610-1086	TUBE,CONTROL,COPPER,W/SLEEVE,1/4"X22"LG	1
23	610-1223	TUBE,UNLOADER,NYLON,W/SLV&INSERT,1/4X32	1
24	122-1052	ELBOW,STREET,STEEL,PLTD,90 DEG,1/2"NPT	2
25	121-1015	ELBOW,MALE,BRASS,5/8-45SAEX1/2"NPTM	1
26	360-1396	AFTERCOOLER,HOSE,SS,TEFLON,5/8"ODX25.75"	1
27	120-1116	NUT,LOCK,FLANGE,HEX,SERR,ST,PLTD,1/4-20	4
28	120-1009	SCREW,CAP,HEXHD,GR5,ST,PLTD,1/4-20X1-1/4	4
29	120-1071	WASHER,FLAT,STEEL,PLATED,USS,1/4"	4
30	421-1824	PUMP,CMPRSR,PISTON,REPLCMT,BLUE,GU	1
31	122-1037	NIPPLE,STEEL,SCH 40,3/8" X 2" L	1
32	122-1084	CAP,FEMALE,MI,3/8"NPT	1
33	120-1018	SCREW,FLANGE,HEX,SERR,ST,PLD,5/16-18X3/4	4
34	120-1075	WASHER,FLAT,STEEL,PLATED,5/16"	12
35	120-1119	NUT,LOCK,FLANGE,HEX,SERR,ST,PLTD,5/16-18	6
36	320-1020	CONTROL,IDLE,HONDA,8HP,ASSY,TIC-8HG	1
37	131-1116	ENGINE,GAS,HONDA,8 HP,R/S,GX240K1QA2	1
38	154-1220	PULLEY,CI,DG,2.6PDA,1ID,2AK28X1	1
39	120-1109	KEY,STEEL,BLACK,5/16X5/16X 1-1/2" LENGTH	1
40	154-4I510	BELT,VEE,A56,4L-510	2
41	320-1121	FILTER,AIR,2PC,W/SILENCER&FILTER,G154	2
42	121-1039	TEE,BRANCH,BRASS,1/4"TBX1/4"TBX1/8"NPTM	1

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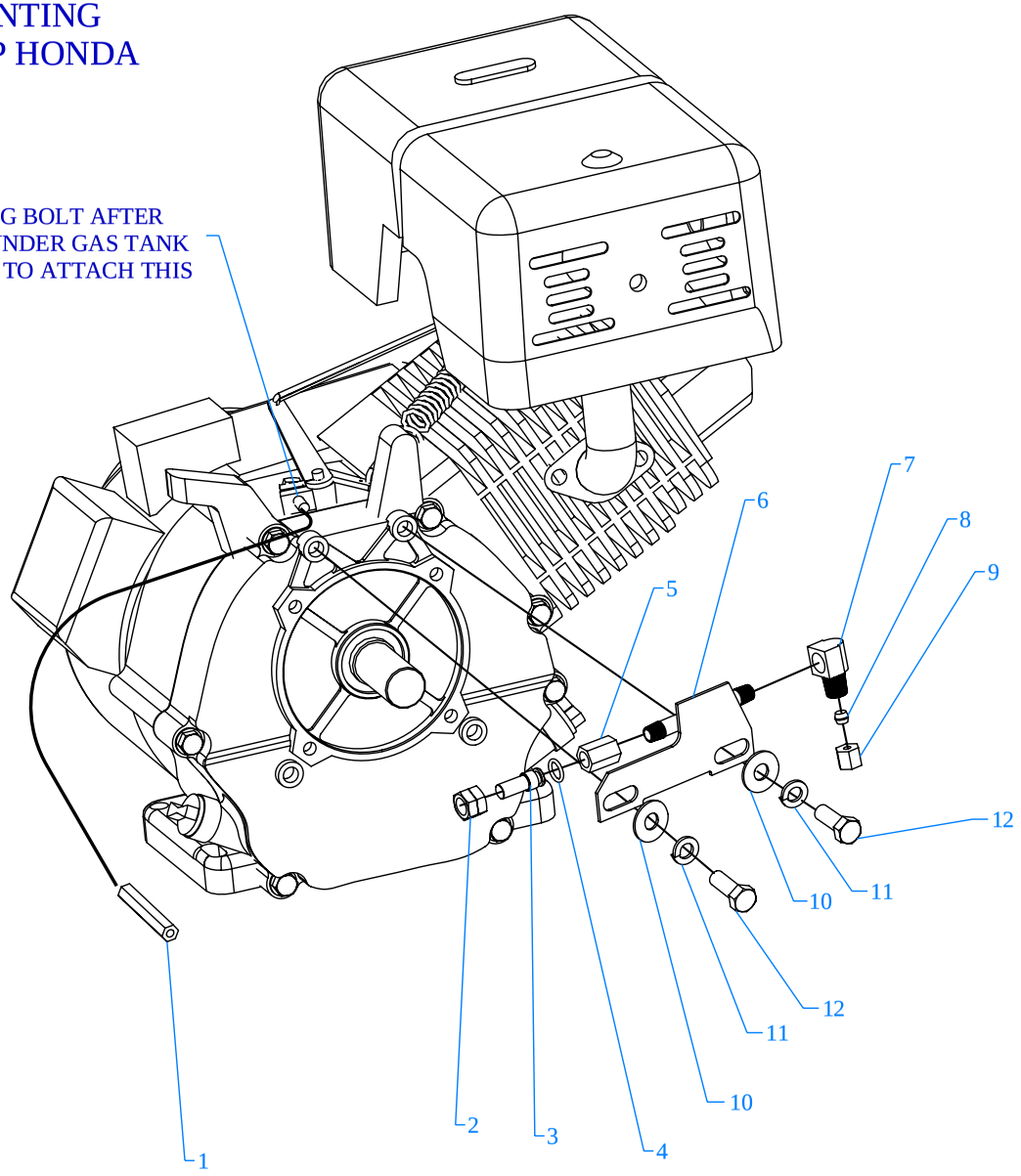
Parts List for Model G8HGA-8P

NOTE: The quantity number indicates the total number of pieces required for a complete unit repair.
When ordering parts give compressor model, serial number and part number. Order assemblies when possible.

REF. NO.	PART NO.	DESCRIPTION	QTY.
43	120-1072	WASHER,FENDER,ST,PLATED,1/4"X1-1/2"OD	1
44	120-1267	SCREW,PAN HD,PHIL,STEEL,PLTD,1/4-20 X 1"	3
45	120-1177	SCREW,SELF DRILL,HEX,ST,PL,12 X 3/4	7
46	320-1179	BELTGUARD,G&GC,W/PAN,3.38WX14.63HX28LG	1
47	150-1183	ADAPTER,DRAIN,OIL,BRASS,8&11HP,HONDA	1
48	121-1049	ELBOW,STREET,BRASS,1/4"NPT	1
49	122-1034	NIPPLE,STEEL,SCH 40,1/4" X 5" L	1
50	122-1126	CAP,HEX,STEEL,PLATED,1/4"NPT	1
51	121-1048	INSERT,TUBING,BRASS,1/4"OD NYLON	2
NOT SHOWN	634-17210-ZE2-821	FILTER,AIR,HONDA,8HP,17210-ZE2-821	1
NOT SHOWN	610-1225	KIT,ELEMENT,FILTER,G54E,PKG OF 4,G54EP	1
NOT SHOWN	105-1209	OIL,PUMP,SYNTHETIC,BLUE,1 QUART,ESQ	1

IDLE CONTROL MOUNTING INSTRUCTIONS FOR 8HP HONDA

ASSEMBLE ITEM (1) ONTO EXISTING BOLT AFTER REMOVING NUT ON IDLE CONTROL UNDER GAS TANK NOTE TANK DOESN'T NEED REMOVED TO ATTACH THIS PART.



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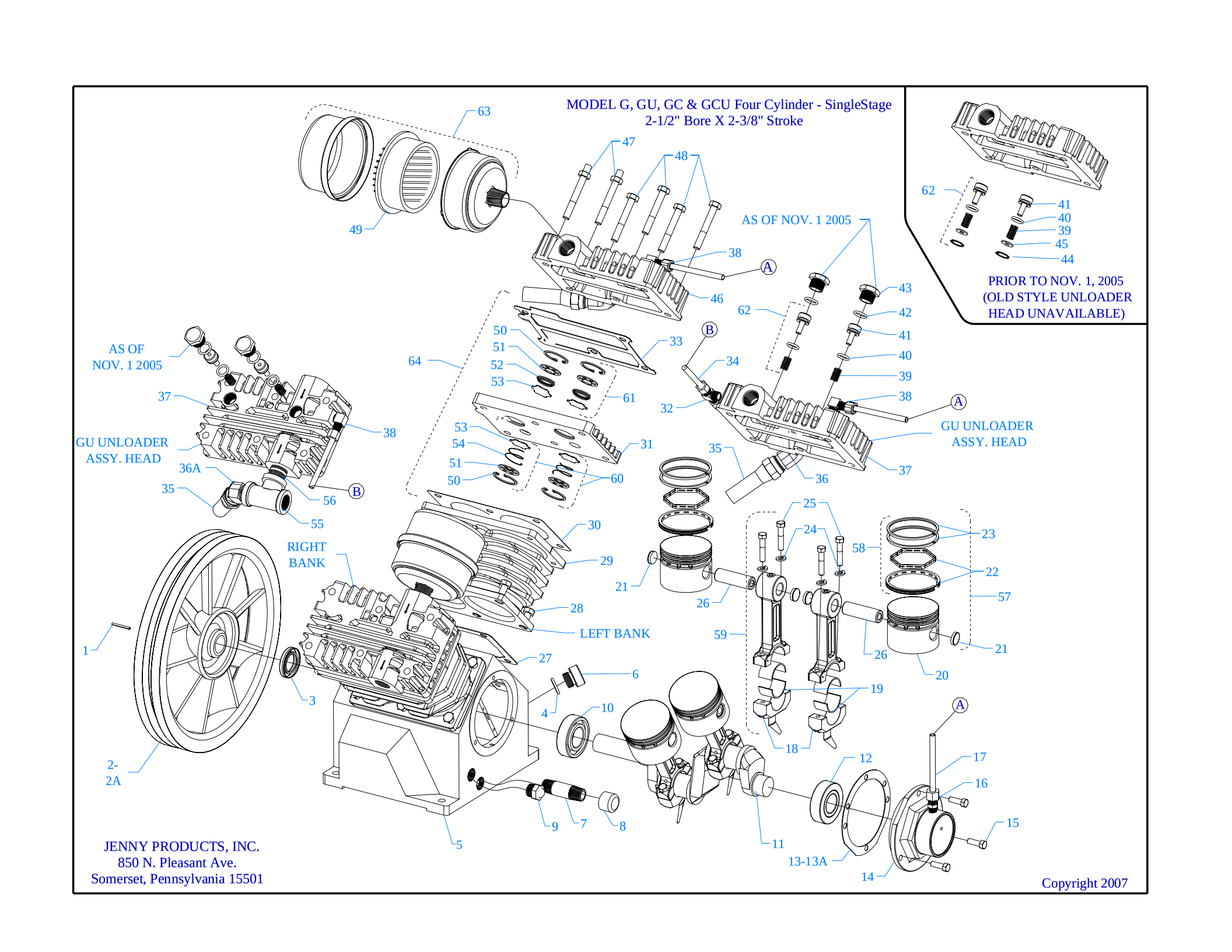
Parts List for 8HP Honda Throttle Idle Control

NOTE: The quantity number indicates the total number of pieces required for a complete unit repair.
When ordering parts give compressor model, serial number and part number. Order assemblies when possible.

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	220-1061	LEVER,CONTROL,IDLE,HONDA,8HP,LIC-8HG	1
2	121-1083	NUT,COMPRESSION,TUBING,BRASS,3/8"	1
3	150-1064	PISTON,CONTROL,IDLE,THROTTLE,HONDA	1
4	104-1021	RING,O,BUNA-N,5/16"IDX7/16"ODX1/16"THK	1
5	150-1063	CYLINDER,CONTROL,IDLE,THROTTLE,BRASS,TIC	1
6	150-1085	BRACKET,CONTROL,IDLE,8HP,HONDA,MIC-8HG	1
7	121-1037	ELBOW,FEMALE,COMPRESSION,BR,1/4TBX1/8"N	1
8	121-1080	SLEEVE,COMPRESSION,BRASS,1/4"	1
9	121-1082	NUT,COMPRESSION,TUBING,BRASS,1/4"	1
10	120-1078	WASHER,FLAT,STEEL,PLATED,USS,3/8"	2
11	120-1077	WASHER,LOCK,SPLIT,STEEL,PLATED,3/8"	2
12	120-1032	SCREW,CAP,HEXHD,GR5,ST,PLTD,3/8-16X1	2

MODEL G, GU, GC & GCU Four Cylinder - SingleStage
2-1/2" Bore X 2-3/8" Stroke



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Parts List for Model G, MG, GU, MGU, GC, & GCU Assembly

NOTE: The quantity number indicates the total number of pieces required for a complete unit repair.
When ordering parts give compressor model, serial number and part number. Order assemblies when possible.

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	120-1163	PIN,ROLLED,COILED,STL,BLK,1/4ODX1L,K25	1
2	220-1095	FLYWHEEL,G PUMP,CI,10-3/8,2 GROOVE,L23A	1
2A	220-1090	FLYWHEEL,GT PUMP,CI,13-1/4,2 GROOVE,G23	1
3	150-1036	SEAL,OIL,LIP,SINGLE,0.875 DIA,K11E	1
4	104-1016	RING,O,BUNA-N,5/8"IDX13/16"ODX3/32"THK	1
5	220-1034	CRANKCASE,Y PUMP,CI,MACHINED,Y1A	1
6	610-1029	PLUG,CRANKCASE,FILL,OIL,W/O-RING,K14	1
7	122-1037	NIPPLE,STEEL,SCH 40,3/8" X 2" L	1
8	122-1084	CAP,FEMALE,MI,3/8"NPT	1
9	160-1052	GAUGE,SIGHT,LEVEL,OIL,1/2"NPT	1
10	150-1000	BEARING,BALL,K9	1
11	220-1079	CRANKSHAFT,G PUMP,CI,MACHINED,D20	1
12	150-1008	BEARING,BALL,L9	1
13	104-1000-01	GASKET,CAP,BEARING,F&K&G PUMP,1/32THK,L3	1
13A	104-1000-02	GASKET,CAP,BEARING,F&K&G PUMP,1/64THK,L4	1
14	220-1076	CAP,BEARING,D PUMP,CI,MACHINED,D2	1
15	120-1004	SCREW,CAP,HEXHD,GR5,ST,BLK,1/4-20X3/4	3
16	121-1025	CONNECTOR,MALE,COMPRESSION,BR,1/4TBX1/8"	1
17	610-1137	TUBE,BREATHER,CU,BENT,MGU&GCU&GTU,L18	1
18	310-1043	ROD,CONNECTING,W/BEARNG INSERT,L21L&L21K	4
19	150-1011	BEARING,ROD,CONNECTING,PUMP,F,K,G	8
20	220-1005	PISTON,PUMP,ALUMINUM,MACHINED,K32	4
21	104-1103	BUMPER,WRIST PIN,PLASTIC,K36A	8

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NOTE: The quantity number indicates the total number of pieces required for a complete unit repair.
When ordering parts give compressor model, serial number and part number. Order assemblies when possible.

REF. NO.	PART NO.	DESCRIPTION	QTY.
22	610-1065	KIT,RING,OIL,W/EXPANDER,ASSY,K34	4
23	150-1003	RING,COMPRESSION,PISTON,STEEL,EBA 22,K33	8
24	120-1068	WASHER,LOCK,SPLIT,ST,BLK,HIGH CLLR,1/4"	8
25	120-1010	SCREW,CAP,HEXHD,GR5,ST,BLK,1/4-20X1-1/4	8
26	150-1005	PIN,PISTON,STEEL,HARDENED,K35	4
27	104-1006	GASKET,CYLINDER,K&G&W PUMP,1/32THK,K31	2
28	120-1017	SCREW,CAP,HEXHD,GR5,ST,BLK,5/16-18X3/4 (15FT-LB)	12
29	360-1150	CYLINDER,K PUMP,CI,PAINTED,BLUE,K30	2
30	104-1007	GASKET,PLATE,VALVE,K&G&W PUMP,1/32TK,L41	2
31	220-1013	PLATE,VALVE,L PUMP,CI,MACHINED,L40	2
32	121-1039	TEE,BRANCH,BRASS,1/4"TBX1/4"TBX1/8"NPTM	1
33	104-1008	GASKET,HEAD,K&G&W PUMP,1/32THK,L51	2
34	610-1121	TUBING,UNLOADER,HEAD-HEAD,MGU PUMP,LU88	1
35	610-1334	TUBE,MANIFOLD,COPPER,G,W/NUT,5/8,MS,MG59	1
36	121-1015	ELBOW,MALE,BRASS,5/8-45SAEX1/2"NPTM	1
36A	121-1021	ELBOW,BRASS,MALE,45DEG,5/8-45SAEX1/2"NPT	1
37	310-1008	HEAD,UNLOADING,K&G,W/1/2"PRT 7 HLE,LU180	2
38	121-1032	ELBOW,MALE,COMPRESSION,BR,1/4TBX1/8"NPTM	2
39	150-1020	SPRING,VALVE,UNLOADER,INTAKE, KU83	4
40	104-1020	RING,O,SILICON,7/16"IDX5/8"ODX3/32"THK	4
41	150-1028	PISTON,UNLOADER,VALVE,BRASS,KU81	4
42	104-1015	RING,O,BUNA-N,1/2"IDX11/16"ODX3/32"THK	4
43	122-1051	PLUG,HEX ,BRASS,11/16-16 UN-2B X .550	4

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Parts List for Model G, MG, GU, MGU, GC, & GCU Assembly

NOTE: The quantity number indicates the total number of pieces required for a complete unit repair.
When ordering parts give compressor model, serial number and part number. Order assemblies when possible.

REF. NO.	PART NO.	DESCRIPTION	QTY.
44	120-1167	RETAINER,INTERNAL,ST,0.035X 0.665,KU85	4
45	150-1042	WASHER,BRASS,1/32X 0.605ODX1/4 ID,KU84	4
46	310-1004	HEAD,START/STOP,G PUMP,REPLACEMNT,L50	1
47	120-1252	BOLT,STUD,HEX,ST,5/16-18X2-1/4X5/8,K52-1	2
48	120-1028	SCREW,CAP,HEXHD,GR5,ST,BLK,5/16-18X2-1/4	10
49	150-1104	ELEMENT,FILTER,AIR,COMPRESSOR,JENNY,G54E	2
50	150-1041	RETAINER,VALVE,STEEL,PAS,0.062"THK,K43	8
51	109-1010	VALVE,BUMPER,STEEL,K44	8
52	150-1018	SPRING,CONE,SS,VALVE,DISCHARGE,K46	4
53	109-1011	VALVE,DISC,STAINLESS STEEL,K47	8
54	150-1017	SPRING,CONE,SS,VALVE,INTAKE,K45	4
55	122-1060	TEE,FEMALE,MI,PLTD,1/2"NPT	1
56	122-1042	NIPPLE,CLOSE,STEEL,SCH 80,1/2"NPTM	1
		Assemblies	
57	610-1028	PISTON,W/RINGS&PIN,ASSY,K132 INCLUDES 20, 21(2), 22, 23, 26	4
58	610-1020	KIT,PUMP,RING,PISTON,F&K&G&W PUMP,K133 INCLUDES 22(2), 23(4)	2
59	610-1411	ROD,CONNECTING,W/BEARNG INSERT,L21L&L21K INCLUDES 18, 19(2), 24(2), 25	4
60	610-1031	VALVE,SUCTION,ASSY,K145 INCLUDES 50, 51, 53, 54	4
61	610-1032	VALVE,DISCHARGE,ASSY,K146 INCLUDES 50, 51, 52, 53	4
62	610-1042	VALVE,UNLOADER,HEAD,PUMP,ASSY, KU181 INCLUDES 39, 40, 41, 44, 45	4
63	320-1121	FILTER,W/DECALS,ASSY,G154S	2

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NOTE: The quantity number indicates the total number of pieces required for a complete unit repair.
When ordering parts give compressor model, serial number and part number. Order assemblies when possible.

REF. NO.	PART NO.	DESCRIPTION	QTY.
64	610-1045	PLATE,VALVE,W/VALVES,ASSY,L140 INCLUDES 30, 31, 33, 60(2), 61(2)	2
65	610-1044	KIT,GASKET,L PUMP,ASSY,L100 13, 13A, 27(2), 30(2), 33(2)	1
66	610-1298	KIT,BASIC,REPAIR,G PUMP,G101 INCLUDES 49(2), 58(2), 60(4), 61(4), 65	1
NOT SHOWN	610-1297	KIT,BASIC,REPAIR,GU&GCU PUMP,GU101 INCLUDES 49(2), 58(2), 60(4), 61(4), 62(4), 65	1
NOT SHOWN	105-1209	OIL,PUMP,SYNTHETIC,BLUE,1 QUART,ESQ	1
NOT SHOWN	610-1226	KIT,FILTER,ASSY,G154,PKG OF 4,G154P	1
NOT SHOWN	610-1186	KIT,ELEMENT,FILTER,L54E,PKG OF 4,L54EP	1
NOT SHOWN	150-1010	ELEMENT,FILTER,AIR,COMPRESSOR,JENNY,L54E	1

VERSA-MATIC PRODUCT WARRANTY

Versa-Matic* warrants to the original end-use purchaser that no product sold by Versa-Matic that bears a Versa-Matic brand shall fail under normal use and service due to a defect in material or workmanship within five years from the date of shipment from Versa-Matic's factory. Versa-Matic brands include ELIMA-MATIC®, TEF-MATIC®, THERMO-MATIC® and FUSION™.

If Versa-Matic determines that a Versa-Matic brand product has failed during normal use and service due to a defect in material or workmanship within the warranty period for such product, Versa-Matic will repair or replace such product at no charge to the original end-use purchaser. The determination to repair or replace shall be made by Versa-Matic in its sole discretion. The repaired or replacement product shall be shipped to the original end-user purchaser freight collect unless the original end-user purchaser makes other arrangements for shipment. The original end user purchaser shall bear all risk of loss or damage during shipment. Repair or replacement does not extend the original warranty period for a product, and any warranty repair or replacement is warranted only for the balance of the original warranty period.

Statements and data relating to products on Versa-Matic's website and in promotional marketing and technical literature and materials are not intended to define the performance of any product under actual conditions or when used for specific applications, are not warranties, and should not be relied upon in determining the performance of products under actual conditions or the suitability of products for specific applications.

The above warranty and repair or replacement obligation does not apply to or include:

- Any product that is not sold by Versa-Matic as new
- Any accessory or other product that does not bear a Versa-Matic brand (In the case of such products, any warranty is limited to a pass through to the original end-use purchaser of any warranty received from the manufacturer to the extent such pass through is permitted by the manufacturer)
- Any product that fails other than during normal use and service or that fails outside the warranty period for such product
- Normal wear and tear
- Any product that Versa-Matic determines (a) was tampered with, disassembled, repaired, modified or altered without the prior written authorization of Versa-Matic (b) damaged during or after shipment (c) used to pump material that the product was not designed to pump or otherwise used for a purpose or under conditions that differ from those for which it was designed (d) not properly maintained or operated or otherwise misused or (e) subjected to abnormal use or service.
- Any party other than the original end-use purchaser
- Field repair, removal, reinstallation, labor, freight or other similar items

To be eligible for warranty repair or replacement, the original end-use purchaser must notify Versa-Matic of the product failure in writing within the warranty period for such product and, if requested by Versa-Matic, the product must be promptly returned for inspection, freight prepaid, to either Versa-Matic's factory at 800 North Main Street; Mansfield, OH 44902 USA or to a Versa-Matic authorized distributor. The original end-user purchaser must also promptly provide Versa-Matic or its authorized distributor with all such information as either of them may request concerning the maintenance, operation, use and failure of any product that is claimed to have failed due to a defect in material or workmanship. Return of a product to Versa-Matic's factory requires a Return Goods authorization (RGA) from Versa-Matic, and the RGA No. must be included with the returned product. The original end-user purchaser shall bear all risk of loss or damage during shipment.

THIS PRODUCT WARRANTY IS VERSA-MATIC'S SOLE AND EXCLUSIVE WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH OTHER WARRANTIES ARE EXPRESSLY EXCLUDED.

THE RIGHTS AND REMEDIES UNDER THIS PRODUCT WARRANTY ARE THE SOLE AND EXCLUSIVE RIGHTS AND REMEDIES AGAINST VERSA-MATIC WITH RESPECT TO ALL PRODUCTS. EXCEPT FOR THE SPECIFIC LIABILITIES AND OBLIGATIONS PROVIDED UNDER THIS PRODUCT WARRANTY, VERSA-MATIC SHALL HAVE NO LIABILITY OR OBLIGATION WITH RESPECT TO ANY PRODUCT.

UNDER NO CIRCUMSTANCES SHALL VERSA-MATIC HAVE ANY LIABILITY FOR ANY CLAIM, LOSS, DAMAGE, INJURY, LIABILITY, OBLIGATION, COST OR EXPENSE THAT DIRECTLY OR INDIRECTLY RELATES TO OR ARISES OUT OF THE USE OR FAILURE OF ANY PRODUCT OR ANY LIABILITY FOR INDIRECT, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF SALES, LOSS OF PROFITS, LOSS OF MATERIAL BEING PUMPED, DOWN TIME, LOSS OF PRODUCTION, LOSS OF CONTRACTS, OR DAMAGE TO REPUTATION OR GOOD WILL, WHETHER OR NOT VERSA-MATIC WAS AWARE OF OR ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

IN ANY EVENT, VERSA-MATIC'S LIABILITY IN CONNECTION WITH ANY INDIVIDUAL PRODUCT SHALL BE LIMITED TO THE ORIGINAL PRICE PAID TO VERSA-MATIC FOR SUCH PRODUCT.

No Versa-Matic authorized distributor or other person is authorized to modify this Product Warranty or impose any liability or obligation on Versa-Matic other than as expressly provided herein.

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*Versa-Matic is a tradename and registered trademark of IDEX AODD, Inc., Mansfield, Ohio USA

PUMPER PARTS PRODUCT WARRANTY

Pumper Parts* warrants to the original end-use purchaser that no Pumper Parts® brand product shall fail under normal use and service due to a defect in material or workmanship within five years from the date of shipment from Pumper Parts' factory.

If Pumper Parts determines that a Pumper Parts® brand product has failed during normal use and service due to a defect in material or workmanship within the warranty period for such product, Pumper Parts will repair or replace such product at no charge to the original end-use purchaser. The determination to repair or replace shall be made by Pumper Parts in its sole discretion. The repaired or replacement product shall be shipped to the original end-user purchaser freight collect unless the original end-user purchaser makes other arrangements for shipment. The original end user purchaser shall bear all risk of loss or damage during shipment. Repair or replacement does not extend the original warranty period for a product, and any warranty repair or replacement is warranted only for the balance of the original warranty period.

Statements and data relating to products on Pumper Parts' website and in promotional marketing and technical literature and materials are not intended to define the performance of any product under actual conditions or when used for specific applications, are not warranties, and should not be relied upon in determining the performance of products under actual conditions or the suitability of products for specific applications.

The above warranty and repair or replacement obligation does not apply to or include:

- Any product that fails other than during normal use and service or that fails outside the warranty period for such product
- Normal wear and tear
- Any product that Pumper Parts determines (a) was tampered with, disassembled, repaired, modified or altered without the prior written authorization of Pumper Parts (b) damaged during or after shipment (c) used to pump material that the product was not designed to pump or otherwise used for a purpose or under conditions that differ from those for which it was designed (d) not properly maintained or operated or otherwise misused or (e) subjected to abnormal use or service.
- Any party other than the original end-use purchaser
- Field repair, removal, reinstallation, labor, freight or other similar items

To be eligible for warranty repair or replacement, the original end-use purchaser must notify Pumper Parts of the product failure in writing within the warranty period for such product and, if requested by Pumper Parts, the product must be promptly returned for inspection, freight prepaid, to either Pumper Parts' factory at 800 North Main Street; Mansfield, OH 44902 USA or to a Pumper Parts authorized distributor. The original end-user purchaser must also promptly provide Pumper Parts or its authorized distributor with all such information as either of them may request concerning the maintenance, operation, use and failure of any product that is claimed to have failed due to a defect in material or workmanship. Return of a product to Pumper Parts' factory requires a Return Goods authorization (RGA) from Pumper Parts, and the RGA No. must be included with the returned product. The original end-user purchaser shall bear all risk of loss or damage during shipment.

THIS PRODUCT WARRANTY IS PUMPER PARTS' SOLE AND EXCLUSIVE WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH OTHER WARRANTIES ARE EXPRESSLY EXCLUDED.

THE RIGHTS AND REMEDIES UNDER THIS PRODUCT WARRANTY ARE THE SOLE AND EXCLUSIVE RIGHTS AND REMEDIES AGAINST PUMPER PARTS WITH RESPECT TO ALL PRODUCTS. EXCEPT FOR THE SPECIFIC LIABILITIES AND OBLIGATIONS PROVIDED UNDER THIS PRODUCT WARRANTY, PUMPER PARTS SHALL HAVE NO LIABILITY OR OBLIGATION WITH RESPECT TO ANY PRODUCT.

UNDER NO CIRCUMSTANCES SHALL PUMPER PARTS HAVE ANY LIABILITY FOR ANY CLAIM, LOSS, DAMAGE, INJURY, LIABILITY, OBLIGATION, COST OR EXPENSE THAT DIRECTLY OR INDIRECTLY RELATES TO OR ARISES OUT OF THE USE OR FAILURE OF ANY PRODUCT OR ANY LIABILITY FOR INDIRECT, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF SALES, LOSS OF PROFITS, LOSS OF MATERIAL BEING PUMPED, DOWN TIME, LOSS OF PRODUCTION, LOSS OF CONTRACTS, OR DAMAGE TO REPUTATION OR GOOD WILL, WHETHER OR NOT PUMPER PARTS WAS AWARE OF OR ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

IN ANY EVENT, PUMPER PARTS' LIABILITY IN CONNECTION WITH ANY INDIVIDUAL PRODUCT SHALL BE LIMITED TO THE ORIGINAL PRICE PAID TO PUMPER PARTS FOR SUCH PRODUCT.

No Pumper Parts authorized distributor or other person is authorized to modify this Product Warranty or impose any liability or obligation on Pumper Parts other than as expressly provided herein.

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*Pumper Parts is a tradename and registered trademark of IDEX AODD, Inc., Mansfield, Ohio USA

NEALCO™ EQUIPMENT, LLC SOLD BY DISTRIBUTORS

Warranty

NEALCO™ Equipment, LLC, through its distributor, warrants that each item of equipment manufactured by it and delivered hereunder to the initial user to be free of defects in material and workmanship for a period of six (6) months from the date of shipment to the initial user, or six (6) months from date of warranty registration by its dealer, whichever occurs first.

NEALCO™ Equipment, LLC will provide a new part or repaired part, at its election, in place of any part which is found upon its inspection to be defective in material and workmanship during the period prescribed above. Such part will be repaired or replaced without charge to the initial user during normal working hours at the place of business of a NEALCO™ distributor authorized to sell the type of equipment involved or other establishment authorized by NEALCO™. User must present proof of purchase and date at the time of exercising warranty.

This warranty does not apply to failures occurring as a result of abuse, misuse, negligent repairs, corrosion, erosion and normal wear and tear, alterations or modification made to the product without express written consent of NEALCO™; or failure to follow the recommended operating practices and maintenance product's operating and maintenance publications.

Accessories or equipment furnished by NEALCO™, but manufactured by others, including, but not limited to, engines, tires, batteries, engine electrical equipment, hydraulic transmissions, carriers, shall carry whatever warranty the manufacturers have conveyed to NEALCO™ and which can be passed on to the initial user.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES (EXCEPT OF TITLE), EXPRESSED OR IMPLIED, AND THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Liability

THE REMEDIES OF THE USER SET FORTH UNDER THE PROVISIONS OF WARRANTY OUTLINED ABOVE ARE EXCLUSIVE AND THE TOTAL LIABILITY OF NEALCO™ OR ITS DISTRIBUTORS WITH RESPECT TO THIS SALE OR THE EQUIPMENT AND SERVICE FURNISHED HEREUNDER, IN CONNECTION WITH THE PERFORMANCE OR BREACH THEREOF, OR FROM THE SALE, DELIVERY, INSTALLATION, REPAIR OR TECHNICAL DIRECTION COVERED BY OR FURNISHED UNDER THIS SALE WHETHER BASED ON CONTRACT, WARRANTY, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHERWISE SHALL NOT EXCEED THE PURCHASE PRICE OF THE UNIT OF EQUIPMENT UPON WHICH SUCH LIABILITY IS BASED.

Nealco™ , ITS SUPPLIER(S) AND ITS DISTRIBUTORS SHALL IN NO EVENT BE LIABLE TO THE USER, ANY SUCCESSORS IN INTEREST OR ANY BENEFICIARY OR ASSIGNEE RELATING TO THIS SALE FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, SPECIAL OR PUNITIVE DAMAGES ARISING OUT OF THIS SALE OR ANY BREACH THEREOF, OR ANY DEFECTS IN, OR FAILURE OF, OR MALFUNCTION OF THE EQUIPMENT UNDER THIS SALE WHETHER BASED UPON LOSS OF USE, LOST PROFITS OR REVENUE, INTEREST, LOST GOODWILL, WORK STOPPAGE, IMPAIRMENT OF OTHER GOODS, LOSS BY REASON OF SHUTDOWN OR NON-OPERATION, INCREASED EXPENSES OF OPERATION OF THE EQUIPMENT, COST OF PURCHASE OF REPLACEMENT POWER OR CLAIMS OF USERS OR CUSTOMERS OF THE USER FOR SERVICE INTERRUPTION WHETHER OR NOT SUCH LOSS OR DAMAGE IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHERWISE.