



QGV Series

Variable Speed Drive Air Compressors



Instruction Manual

This manual contains important safety information and should be made available to all personnel who operate and/or maintain this product. Carefully read this manual before attempting to operate or perform maintenance on this equipment.

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Important Requirements for New Installation

To insure a safe installation of the equipment it is important to make sure final inspection checks of the equipment are made before running for the first time.

With all electrical power removed from the equipment and per OSHA requirements for lock-out and tag-out you can safely make the following inspection checks.

The electrical installation must be done by qualified personnel. Inspect all electrical connections to verify there are no loose connections and all electrical connections are tight. Verify that the power requirement for the package has been provided for by referencing the package power label on the inside of the electrical cabinet door on the package. The branch circuit protection and supply cable size for the compressor must be sized to meet the package power requirement per local electrical codes. Also verify that the package is correctly grounded using the proper size wire connected to a tested earth ground. An improper electrical installation can result in damage to or failure of the equipment. This could also result in a fire and fatalities.

The piping installation must be done by qualified personnel. Inspect all piping sizes and pressure ratings to insure the proper pipe has been used for the compressor package being installed. Undersized pipe or poor routing of pipe will degrade the performance of the compressor package. Inspect all connections to insure they are tight, sealed, and secured. A shut-off valve must be installed at the package discharge to insure that the compressor package can be isolated from the system air pressure for safe maintenance of the equipment. You cannot rely on a check valve to provide safe isolation of the compressor package. A check valve in the air piping from the compressor can interfere with the proper operation of the compressor controls.

Compressor package metal or nylon tubing must be checked. Visually inspect these tubes located in the compressor package. Tubes can come loose or get damaged in shipping so look for loose or damaged tubes. Verify the flexibility of the nylon tubes while inspecting for any damage. Verify that all tubes are secure in their tube fittings to insure that none of the tubing might leak at or come loose from there fittings when the compressor is in operation. Damaged or loose tubes can result in lubricant being sprayed on hot surfaces when the compressor is in operation and result in damage to the compressor or a fire.

After the installed compressor package has been inspected you can restore power to the package. With the proper power applied to the package you can verify proper rotation of the compressor and the cooling fan.

Important Requirements for Safety

The drive in this unit contains capacitors that will maintain a high voltage charge after power is removed. Before performing any maintenance on the compressor package allow at least 5 minutes for the capacitors to discharge after removing power to the package. Verify that there are no indicator lights or displays on the drive that are in an on state indicating power is still in the drive before working on the unit. Remember to always lock out and tagout the power source to the package per OSHA regulations.

- Safety Alert Symbols
- Spare Parts Ordering Information
- Serial/Model Identification Plate
- Royal Blue Warranty

Safety Alert Symbols

IMPORTANT!

Throughout this manual we have identified key hazards. The following symbols identify the level and seriousness:



DANGER!

This symbol identifies immediate hazards which **will** result in severe personal injury, death or substantial property damage.



WARNING!

This symbol identifies hazards or unsafe practices which **could** result in personal injury, death or substantial property damage.



DANGER!

This symbol identifies life threatening electrical voltage levels which **will** result in severe personal injury or death. All electrical work **must** be performed by a qualified electrician.



CAUTION!

Identifies hazards or unsafe practices which **could** result in minor personal injury or property damage.



NOTICE!

Identifies important installation, operation or maintenance information which is not hazard related.



CAUTION!

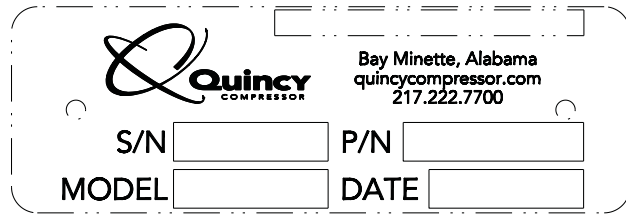
This symbol identifies hot surfaces which **could** result in personal injury or property damage.

Section I - General Information

Spare Parts Ordering Information

Quincy Compressor maintains replacement parts for Quincy compressors and accessories. A repair parts list is shipped with all new machines. Order parts from your Authorized Quincy distributor. Use only genuine Quincy replacement parts. Failure to do so may void warranty.

Serial/Model Identification Plate



Reference to the machine MODEL, SERIAL NUMBER and DATE OF ORIGINAL START-UP must be made in all communication relative to parts orders. A model/serial number plate is located on the frame or in the upper right corner of the control panel door.

NOTICE!

Every effort has been taken to ensure complete and correct instructions have been included in this manual, however, possible product updates and changes may have occurred since this printing. Quincy Compressor reserves the right to change specifications without incurring any obligation for equipment previously or subsequently sold. Not responsible for typographical errors.

Manual Updates - March 2006:

Pages 3 & 4 - Revised Warranty - Added Royal Blue Warranty.

Page 35 - Corrected fluid level checking instructions.

Page 69 - Added QGV-50 water-cooled dimensional.

Pages 80-81 - Added Standard Terms & Conditions.

Manual Updates - May 2007:

Page 2 - Updated serial tag picture.

Page 3 - Revised Airend coverage on Royal Blue Warranty.

Page 15 - Revised 'Electrical'.

Pages 44-59 - Revised Section VI - Compressor Fluids.

Manual Updates - October 2007:

Pages 38-39 - Revised Separator Element instructions & added QGV-150/200 Separator Installation.

Royal Blue Warranty Quincy Compressor® Industrial Screw Products QGV Variable Speed Air Compressors

Seller warrants products of its own manufacture against defects in workmanship and materials under normal use and service, as follows:

Packaged Compressors - Twelve (12) months from date of start-up or eighteen (18) months from date of shipment from the factory, whichever occurs first.

Airend on Packaged Compressors (for service at full-load pressure at or below 150 psig) - Ten years (120 months) from date of startup (not to exceed 126 months from date of shipment from the factory).

Airend on Packaged Compressors (for service at full-load pressure above 150 psig) - Twelve (12) months from date of start-up or twenty-four (24) months from date of shipment from the factory, whichever occurs first. **Five (5) and ten (10) year Extended Airend Warranties are available on 150 psig full-load pressure airends.**

Air/fluid Reservoir Tanks - Five years (60 months) from date of start up (not to exceed 66 months from date of shipment), including parts and labor. In the event of a reservoir tank failure, the parts and labor coverage is limited to the reservoir tank itself and does not cover the separator element(s) or loss of fluid.

Air and Fluid Heat Exchangers - Five years (60 months) from date of start up (not to exceed 66 months from date of shipment), including parts and labor for the first twelve (12) months, parts only after twelve (12) months. In the event of a heat exchanger failure, the parts and labor coverage is limited to the heat exchanger itself and does not cover the loss of fluid.

Drive Motors - Five years (60 months) from date of start up (not to exceed 66 months from date of shipment), including parts and labor. Royal Blue warranty does not cover medium voltage (above 575 volt, 3 phase) or customer specified motors. Before any motor repairs or replacements are performed, the factory must be contacted at the time of failure in order to approve any further action.

Drive Coupling Elements - Five years (60 months) from date of start up (not to exceed 66 months from date of shipment), including parts and labor. (Machine must be installed and operated in accordance with the Operator's Manual.)

Variable Speed Drives (if applicable) - Five years (60 months) from date of start up (not to exceed 66 months from date of shipment), including parts & labor for the first year (12 months), parts only for the remainder of the warranty period. Unit must be installed indoors in a well ventilated environment & a line reactor purchase (from Quincy Compressor) is required.

Remanufactured Airend - Twelve (12) months from date of shipment from the factory.

Parts - Ninety (90) days from date of Distributor sale or one (1) year from date of factory shipment.

With respect to products not manufactured by Seller, Seller will, if practical, pass along the warranty of the original manufacturer.

The terms of coverage for the Royal Blue Warranty are listed below. Failure to follow the terms will invalidate the Royal Blue Warranty.

AUTHORIZED START-UP REQUIRED:

A properly completed start-up report and the Royal Blue Warranty registration form must be submitted by an authorized Quincy distributor to the Quincy Compressor Bay Minette office within thirty (30) days of start-up. Start-up reports must be submitted on Q-Serv.

GENUINE PARTS AND FLUIDS

The compressor must be maintained with QuinSyn-PG (8,000 hours maximum), QuinSyn-XP (12,000 hours maximum), QuinSyn-Plus (8,000 hours maximum) or QuinSyn-F fluid (4,000 hours maximum). Maximum fluid change intervals are noted per fluid. Actual fluid change interval is to be determined by fluid sampling report, not to exceed maximum fluid change interval. Fluid samples must be taken every 2,000 hours or as directed by the analysis report.

Only genuine Quincy Compressor maintenance and replacement parts may be used.

Section I - General Information

Royal Blue Warranty (continued) Quincy Compressor® Industrial Screw Products QGV Variable Speed Air Compressors

Normal rules of warranty apply regardless of coverage length. Inlet valves, fluid pumps and shaft seals are covered by the standard (1 year) warranty terms and are not included in the Royal Blue Warranty program. The Royal Blue Warranty is non-transferable.

The customer and/or Quincy Distributor must keep copies of all maintenance records, parts purchases and sampling reports. The following records will be required for warranty air end replacement and/or warranty claim consideration and should be submitted to the Quincy Compressor Customer Service Department:

- A completed Air End Failure Information form.
- A copy of the Royal Blue Warranty Registration/ Agreement form.
- Copies of all maintenance logs for the unit.
- Proof of purchase of genuine Quincy parts and fluids.
- Copies of all fluid analysis reports.

Notice of the alleged defect must be given to Seller in writing with all identifying details including serial number, model number, type of equipment and date of purchase, within thirty (30) days of the discovery of same during the warranty period.

Seller's sole obligation on this warranty shall be, at its option, to repair, replace or refund the purchase price of any product or

part thereof which proves to be defective. If requested by Seller, such product or part thereof must be promptly returned to Seller, freight collect for inspection.

Seller warrants factory repaired or replaced parts of its own manufacture against defects in material and workmanship under normal use and service for ninety (90) days or for the remainder of the warranty on the product being repaired, whichever is longer.

This warranty shall not apply and Seller shall not be responsible nor liable for:

- a) Consequential, collateral or special losses or damages;
- b) Equipment conditions caused by fair wear and tear, abnormal conditions of use, accident, neglect or misuse of equipment, improper storage or damages resulting during shipment;
- c) Deviation from operating instructions, specifications, or other special terms of sales;
- d) Labor charges, loss or damage resulting from improper operation, maintenance or repairs made by person(s) other than Seller or Seller's authorized service station.
- e) Improper application of product.

In no event shall Seller be liable for any claims, whether arising from breach of contract or warranty of claims of negligence or negligent manufacture, in excess of the purchase price.

NOTICE!

Quincy Compressor reserves the right to modify or withdraw this Royal Blue Warranty program at any time on units not already covered by this ROYAL BLUE WARRANTY program.

Section II - Description

- General Description
- The Compression Cycle
- Air Flow
- Capacity Control System
- Cooling System
- Electrical System
- Control Panel

General Description

Quincy QGV series compressors are single stage, positive displacement, fluid-flooded rotary screw compressors with variable frequency drives. The drive motor directly drives the male rotor through a flexible drop out type coupling with no step up or step down gearing. The compressor airend contains two precision-machined rotors, a male rotor with four lobes in constant mesh with a female rotor consisting of six flutes. The rotors are housed in a cast iron cylinder with two

parallel adjoining bores. The airend has an inlet port at the power input end and a discharge port at the opposite end. All parts are machined to exacting tolerances.

QGV model compressors use positive pressure in the reservoir to circulate the compressor fluid through the system.

All compressor components are mounted on a heavy-duty steel frame. Controls and indicators are arranged on a control panel and acoustical cabinets are available to reduce sound levels.

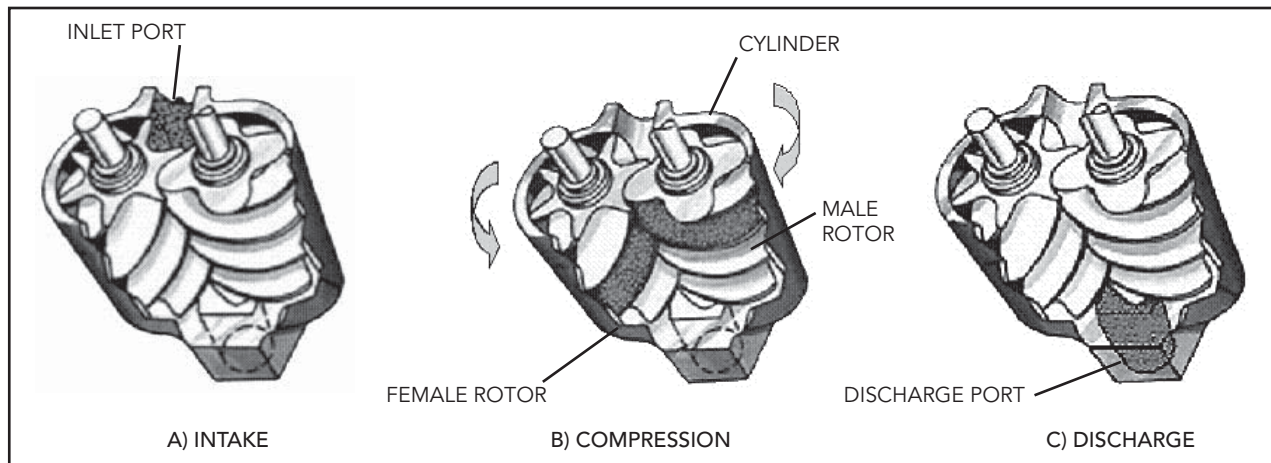


Figure 2-1. Compression Cycle

The Compression Cycle

The compression cycle of a rotary compressor is a continuous process from intake to discharge with no reciprocating mechanisms starting and stopping as found in reciprocating compressors.

As the rotors rotate, (male-clockwise as viewed from the power input end) air is drawn into the cylinder through the inlet port located at the power input end. A volume of air is trapped as the rotor lobes pass the inlet cut off points in the cylinders. Compression occurs as the male rotor rolls into the female flute, progressively reducing the space thereby raising the pressure. Compression continues until the lobe and flute pass the discharge port. The compressed air is then discharged into the air/fluid reservoir. There are four complete compression cycles for each complete rotation of the male rotor.

Air Flow

With the compressor operating, a partial vacuum is produced at the compressor inlet. Air entering via the compressor air filter flows through the air inlet valve into the rotor housing where it is compressed, then discharged into the air/fluid reservoir. Compressed air passes through the complete system then through a minimum pressure check valve to the service connection.

Capacity Control System

The capacity control system on QGV compressors is a start/stop control which varies air delivery based on target pressure (usage).

As the motor begins driving the compressor rotors, air is drawn in, compressed and discharged into the air/fluid reservoir. When the air pressure in the reservoir exceeds the set point, the QGV variable speed drive begins controlling the speed of the compressor. The drive matches air delivery of the compressor to air usage in the plant, maintaining pressure at the target pressure (± 1 psi).

If a reduction in usage is experienced, the drive will slow to compensate for the reduction. If the drive speed slows to 600 RPM (indicating that no air is needed), the drive will shut down the compressor. The compressor will restart automatically when demand returns.



Never assume it is safe to work on a compressor because it is not operating. It may be in standby mode and could restart at any time. Follow all safety instructions in the "Preparing for Maintenance or Service" section.

Section II - Description

Cooling System

Fluid Coolers

Fluid coolers may use either air or water as a cooling medium. The following descriptions point out the major differences between the two types of coolers.

Air-cooled Fluid Coolers

The air-cooled fluid cooler and aftercooler are of the finned aluminum tube, one piece design. Ambient air is forced through the fins by a motor driven fan, cooling the fluid and air in the tubes. To maintain proper compressor operation, the ambient air temperature should not exceed the temperatures listed in Appendix B - Technical Data. The cooler fins must be kept clean at all times. Fluid leaving the reservoir passes through a thermal mixing valve before traveling on to the cooler. The purpose of the thermal valve is to maintain a minimum fluid discharge temperature at the compressor of approximately 180°F.

Water-cooled Fluid Coolers

Water-cooled fluid coolers are of the shell and tube design. Fluid passes through the shell transferring its heat to the water flowing through the tubes. Fluid leaving the cooler does not pass through a thermal mixing valve as in an air-cooled unit, but

goes directly to the fluid filter and the compressor. Fluid discharge temperature at the compressor is maintained by a water temperature regulating valve located in the discharge water line. The water temperature regulating valve uses a probe to sense fluid temperature and opens and closes, governing water flow through the cooler.

Aftercoolers

Aftercoolers reduce the amount of water in the discharge air. They are used to lower the temperature of the discharge air thereby condensing water vapor from the compressed air. This allows most of the contained water to be trapped and expelled from the unit, reducing water related problems downstream.

Air-cooled aftercoolers are part of the air-cooled fluid cooler. Cooling air from the fan is blown through the aftercooler and the fluid cooler.

Water-cooled aftercoolers are placed in series with the fluid cooler. Incoming water is first directed through the aftercooler and then on to the fluid cooler.

A combination moisture separator and water trap is provided for collecting and expelling water to the customer's drain.

Electrical System

A diagram of the electrical system is shown in the parts manual sent with the compressor. A wiring diagram is also included in the control panel on all Quincy QGV compressors.

NOTICE!

Due to continuing product improvements and updates, it is suggested that the wiring diagram included in the control panel be used when servicing the electrical control.

Standard drive motors are open drip proof 1800 RPM with a maximum ambient temperature rating of 104°F. They are not suitable for salt laden, corrosive, dirty, wet or explosive environments.

The QGV series compressors utilize 460V incoming power through a magnetic starter. A transformer in the control panel reduces this voltage to 120 VAC for various electronic controls on the unit. These controls include the pressure transducer, high air temperature safety switch and probe, solenoid valve and various indicator lights.

Other incoming line voltages are available as options. The compressor is provided with a NEMA 1 enclosure. Optional panels include NEMA 4.

Air-cooled models utilize a second magnetic starter for protection of the fluid cooler fan motor. This starter is connected to the compressor starter through an interlock which insures the fan motor is

operating with the compressor motor. If the fan motor starter trips out for any reason, the compressor unit will shut down.



High voltage could cause death or serious injury. Disconnect all power supplies before opening the electrical enclosure or servicing.

Safety Sensors

Two high air temperature (HAT) sensors are standard on QGV units. These sensors protect the unit by sensing unusually high temperatures and shutting the unit down. One is located in the discharge line from the compressor to the air/ fluid reservoir. The second is located in the top of the air/fluid reservoir. These sensors are set to trip at approximately 225°F. The sensors are nonadjustable.

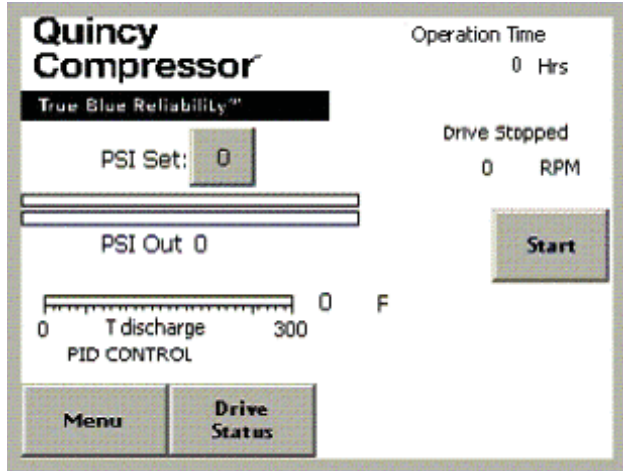


Never remove, bypass or tamper with the safety HAT switch. Failure to provide this safety feature could cause death or serious injury and property damage. If the compressor is shutting down due to high discharge temperature, contact a qualified service technician immediately.

Section II - Description

Control Panel

QGV compressors are equipped with an electronic control with a touch screen control panel.



Once power is applied to the unit (after going through several self test routines) the touch screen (shown above) will indicate

the set point (target pressure), package output pressure, discharge temperature, operating mode, total hours of operation, and the operating speed of the compressor. A bar graph show the degree of loading of the compressor. When the bars match, the delivery pressure equals the pressure set point.

Messages indicating service items that need attention will appear on the touch screen as they are tripped. The touch screen menu also provides access to various information and settings for the compressor.

Only trained and knowledgeable service personnel should alter the compressor settings. Reference 'Section IV - Operating Procedures' and 'Section V - Servicing' for more information about QGV compressor settings and menu options.

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Section III - Installation

- Receiving
- Moving the Unit to the Installation Site
- Location
- Piping Connections
- Relief Valves
- Electrical
- Guards
- Manual Vent and Shutoff Valves
- Water and Sewer Facilities at the Installation Site (Water-cooled models only)
- Compressor Rotation
- Fan Rotation

Receiving

Upon receipt, immediately inspect the compressor for any visible damage that may have occurred during shipment. If visible damage is found, the delivering carrier should make a notation on the freight bill and the customer should request a damage report. If the shipment is accepted and damage is found later, it is classified as concealed damage. Concealed damage should be reported to the delivering carrier within 15 days of delivery. The delivering carrier must prepare a damage report. Itemized supporting papers are essential to filing a claim.

Read the compressor nameplate to be sure the compressor is the model and size ordered and that optionally ordered items are included.

Check the reservoir and pressure relief valves to be sure they are adequate for the pressure at which you intend to operate.

Moving the Unit to the Installation Site

Forklift slots are provided in one side and one end of the main frame. Use of chains and slings should be limited to the main frame. Do not attempt to lift the unit by attaching to any components. Optional lifting eyes are available.



CAUTION!

Improper lifting may result in component, system damage or personal injury. Follow good shop practices and safety procedures when moving the unit.



WARNING!

Removal or painting over safety labels will result in uninformed conditions. This could result in personal injury or property damage. Warning signs and labels shall be provided with enough light to read, conspicuously located and maintained for legibility. Do not remove any warning, caution or instructional material attached.

Location

Locate the compressor on a level surface in a clean, well-lit and well-ventilated area. Allow sufficient space (four feet of clearance on all sides and top of the compressor) for safe and proper daily inspection and maintenance. The entire length of the frame base must be supported. Shim where necessary but do not use wood.

Ambient temperature should not exceed 110°F. High ambient temperatures may result in a high air temperature shutdown. All models are intended for indoor installation; however, it is possible, with certain modifications, to accommodate some outdoor locations. Cabinet models are water-resistant but not water tight. Sheltering from rain, snow and freezing temperatures is mandatory.



Do not operate in temperatures below 32°F or above the limits outlined in Appendix B - Technical Data.

Do not locate the unit where the hot exhaust air from other compressors or heat generating equipment may be

drawn into the unit. Never restrict the flow of exhaust air from the fluid cooler or cooling fan. Heated exhaust air must be exhausted outside to prevent high temperature conditions in the compressor room. If the room is not properly ventilated, compressor operating temperatures will increase and cause a high temperature shutdown.



Clean, fresh air, of sufficient quantity, is required for proper compressor operation.

Clean air is essential for your Quincy QGV compressor. Always select a source providing the cleanest air possible. When an outside air source is used, keep all piping as short and direct as possible. Use vibration isolators and support all piping correctly. Piping size should be at least as large as the inlet valve opening and increased several sizes for extremely long piping runs. The piping must be leak free and clean after fabrication.

In high humidity areas, avoid placing the compressor in a basement or other damp locations. Control the compressor temperatures and monitor compressor fluid for signs of water contamination. Fluid and filter changes may need to be increased in high humidity areas. Increased operating temperatures may be required.



Removal or modification of sound insulation could result in dangerously high sound levels.

Quincy QGV compressors are essentially vibration free, however, some customers may choose to bolt the unit to the floor to prevent the accidental breakage of piping or electrical connections as a result of being bumped. Use only lag bolts to secure the unit. Do not pull the bolts down tight. Overtightening the lag bolts may place the frame in a twist or bind causing breakage of fluid coolers, piping and reservoirs.



Under no circumstances should a compressor be installed in an area exposed to a toxic, volatile or corrosive atmosphere, nor should toxic, volatile or corrosive agents be stored near the compressor.

Section III - Installation

Piping Connections

Never join pipes or fittings by soldering. Lead-tin solders have low strength, a low creep limit, and may, depending on the alloy, start melting at 360°F. Silver soldering and hard soldering are forms of brazing and should not be confused with lead-tin soldering. Never use plastic, PVC, ABS pipe or rubber hose in a compressed air system.

Piping Fit-up

Care must be taken to avoid assembling the piping in a strain with the compressor. Piping should line up without having to be sprung or twisted into position. Adequate expansion loops or bends should be installed to prevent undue stress at the compressor resulting from the changes between hot and cold conditions. Pipe supports should be mounted independently of the compressor and anchored, as necessary, to limit vibration and prevent expansion strains. Piping should never be of smaller size than the connection on the compressor unit.

Relief Valves

Pressure relief valves are sized to protect the system. Never change the pressure setting or tamper with the valve. Only the relief valve manufacturer or an approved representative is qualified to make such a change.



Relief valves must be placed ahead of any potential blockage point. That includes, but is not limited to, such components as shutoff valves, heat exchangers and discharge silencers. Ideally, the relief valve should be threaded directly into the pressure point it is sensing (not connected with tubing or pipe) and pointed away from personnel.



DANGER!

Relief valves are installed to protect system integrity in accordance with ANSI/ASME B19 safety standards. Failure to provide properly sized relief valves will result in death or serious injury.



CAUTION!

ASME coded pressure vessels must not be modified, welded, repaired, reworked or subjected to operating conditions outside the nameplate ratings. Such actions will negate code status, affect insurance status and may cause death, serious injury and property damage.

Electrical

Before installation, the electrical supply should be checked for adequate wire size and capacity. During installation, a suitable fused disconnect switch with semiconductor fuses (AJT or LPJ type) or circuit breaker should be provided. Any unreasonable voltage unbalance (5%) between the legs must be eliminated and any low voltage corrected to prevent excessive current draw. The installation, electric motor, wiring and all electrical controls must be in accordance with National Electric Code, and all state and local codes. A qualified electrician should perform all electrical work. Air compressors must be grounded in accordance with applicable codes. See control panel for the proper wiring diagram.

Quincy Compressor would like to emphasize the importance of providing adequate grounding for air compressors. The common practice of grounding units

to building structural steel may not actually provide adequate grounding protection, as paint and corrosion buildup may exist.



NEMA electrical enclosures and components must be appropriate to the area in which they are installed.

Pneumatic Circuit Breakers or Velocity Fuses

The Occupational Safety and Health Act, Section 1926.303 Paragraph 7 published in Code of Federal Regulations 29 CFR 1920.1 (revised 07/01/1982), states "all hoses exceeding 1/2" inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of a hose failure." These pneumatic safety devices are designed to prevent hoses from whipping, which could result in a serious or fatal accident.

Guards

All mechanical action or motion is hazardous in varying degrees and needs to be guarded. Guarding shall comply with OSHA Safety and Health Standards 29 CFR 1910.219 in OSHA manual 2206 (revised 11/07/1978) and any state or local codes.

Manual Vent and Shutoff Valve

Install a manual valve to vent the compressor and the compressor discharge line to atmosphere. If the air receiver tank services a single compressor, the manual valve can be installed in the receiver. When a manual shutoff valve (block valve) is used, a manual valve should be installed upstream from the valve, and a pressure relief valve installed upstream from the manual vent valve. These valves are to be designed and installed to permit maintenance to be performed in a safe manner. Never substitute a check valve for a manual shutoff valve (block valve) if the purpose is to isolate the compressor from a system for servicing.

Section III - Installation

Water and Sewer Facilities at the Installation Site (water-cooled models)

Clean, soft and/or treated water is required to ensure the efficient, long service life of the water-cooled heat exchangers.

It is strongly recommended that a reputable, local water treatment company be engaged prior to start-up to establish the corrosion, scale forming and fouling tendency of the cooling water and remedy the situation if a problem exists.

NOTICE!

Failure to develop a water treatment plan may result in increased maintenance and operating expense, reduced equipment life and emergency shutdown.

Make sure the water supply is connected and open. Piping supplied by the user should be at least equal to the connections provided on the compressor. Sewer facilities should be readily accessible to the installation site and meet all the requirements of local sewer codes, plus those of the compressor. Make sure water inlet and discharge connections are correct.

NOTICE!

A water temperature regulating valve is located in the discharge water line.

Compressor Rotation

Compressor rotation is controlled by the variable speed drive (drive motor only). Correct connection of the drive motor (to the drive) is verified at the factory. If the drive motor is disconnected for any reason, follow the wiring diagram supplied with the drive motor when reconnecting the motor to the drive to ensure proper rotation.



WARNING!

Operating the compressor with incorrect rotation will result in extreme damage to the compressor and warranty coverage will be voided.

Fan Rotation (air-cooled only)

Check the fan rotation prior to start-up. Fan airflow should be outward, that is, pushing the air through the coolers.

Section IV - Operating Procedures

- Prior to Starting
- Starting the Compressor
- Control Panel Operation
- Stopping the Compressor - Normal Operation
- Stopping the Compressor - Emergency

Prior to Starting



This instruction manual should be readily available to all operators and maintenance personnel. If any part of the manual become illegible or the manual is lost, have it replaced immediately. The instruction manual should be reviewed periodically to prevent a serious accident.

Before starting the compressor, review Sections II and III of this manual. Be certain that all installation requirements have been met and that the purpose and use of the controls are thoroughly understood. Before placing the compressor into operation, do the following:

- Remove all loose items and tools from around the compressor.
- Check fluid level in the air/fluid reservoir. See Compressor Fluid Section.
- Check the fan and fan mounting for tightness.
- Manually rotate the compressor through enough revolutions to be certain there are no mechanical interferences.
- Check all pressure connections for tightness.
- Check to make sure all relief valves are in place.
- Check to make sure all panels and guards are in place and securely mounted.
- Check fuses, circuit breakers and thermal overloads for proper size.
- Close the main power disconnect switch and jog the starter switch button to check the rotational direction of the compressor.
- Check the fan rotation (air flows through the coolers).
- Water-cooled models - Check inlet and discharge water piping for proper connections.

Starting the Compressor

- Secure all enclosure panels on compressor.
- Open the service valve to the plant air distribution system.
- Connect power to the compressor.
- When power is applied to the compressor, the QGV control panel will go through several self-test routines. After applying power to the compressor, wait for the start-up screen (figure 4-1) to appear.

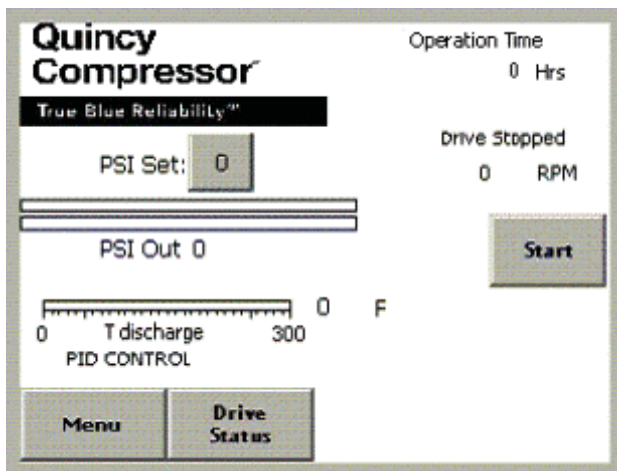


Figure 4-1. Start-up Screen

- Before touching 'Start', touch the gray button next to 'PSI Set:' to set the target operating pressure.

NOTICE!

The 'PSI Set:' button is password protected. The factory default password is 777 (which has a password level of 7).

- Touching the 'PSI Set:' button will bring up the password login screen. Enter an appropriate password, then touch 'Return' to return to the start-up screen.

NOTICE!

When setting up your own passwords, note that the 'PSI Set:' button requires a password level greater than 1. Read 'Password Setup' on page 26 to learn more about setting passwords and password levels.

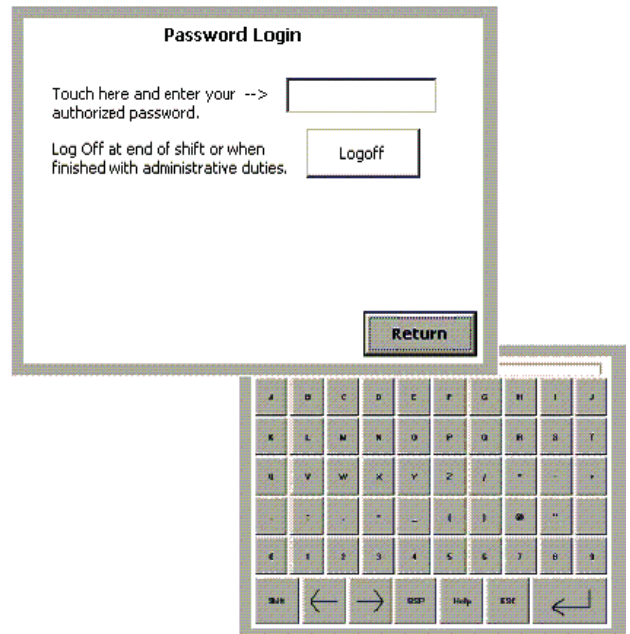


Figure 4-2. Password Login Screen

- Once a password (with an appropriate password level) has been entered, touch the 'PSI Set:' button again to set the target pressure.
- Touch 'Start' (at the start up screen) to start the compressor. (This will change to 'Stop' when the compressor is running.)
- Watch for excessive vibration, unusual noises or air/fluid leaks. If anything unusual develops, stop the compressor immediately and correct the condition.

Section IV - Operating Procedures

- Control settings have been adjusted at the factory; however, they should be checked during start-up and adjusted, if necessary. Some applications may require a slightly different setting than those provided by the factory. Refer to the Service Adjustment Section VIII. Never increase air pressure settings beyond factory specifications.
- **Water-cooled units** - Adjust the water temperature regulating valve to maintain 180°F discharge air temperature.
- Observe compressor operation closely for the first hour of operation and frequently for the next seven hours. Stop compressor and correct any noted problems.

Control Panel Operation

Drive Status

The 'Drive Status' informational screen is accessed from the Start-up Screen (figure 4-1) and is not a password protected screen. This screen shows the current operating conditions on the motor including supplied voltage(s), current draw, computed torque and resultant horsepower.

The screenshot shows the 'Drive Status/Data' screen with the following fields:

- I_motor: 0.0 Amps
- V_motor: 0.0 Volts
- Torque: 0 Ft/Lbs, 0 Nm, 0 HP
- Spd Ref: 0 RPM
- Spd Act: 0 RPM
- Frequency: 0.0 Hz
- DC Bus: 0 Volts
- CPU Avail.: 0
- Drive FW Version: 0.0
- Max CFM: na
- Min. CFM: na (@ 110 psig)
- %CAP: 0
- Operation Time: 0 Hrs
- Drive Status: 0

Buttons: View Events, Return

The Max CFM and Min CFM are taken from the model data sheets and show the rated delivery at 110 psig.

NOTICE!

Other pressure settings will alter these numbers and will not be shown here.

The %CAP is a rough indication of the current delivery of the compressor. This value is taken from the speed of the motor.

Touch 'View Events' to display a list of the last eight logged drive events.

The screenshot shows the 'List of Recent Events' screen with the following table:

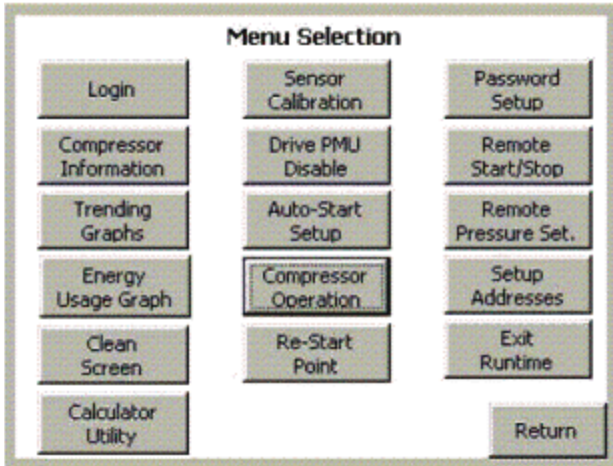
		Days	Hours
1	NO FAULT INDICATED	@ 0	0
2	NO FAULT INDICATED	@ 0	0
3	NO FAULT INDICATED	@ 0	0
4	NO FAULT INDICATED	@ 0	0
5	NO FAULT INDICATED	@ 0	0
6	NO FAULT INDICATED	@ 0	0
7	NO FAULT INDICATED	@ 0	0
8	NO FAULT INDICATED	@ 0	0

Return button

Each logged drive event is listed with an associated date stamp. The date stamp is stored in the drive as the internal time in days and hours from the drive setup time. The most recent event will be at the top of the list.

Menu Selections

Touch 'Menu' on the main start-up screen (figure 4-1) to access the 'Menu Selection' screen which provides access to various settings and information about the compressor.



'Compressor Information', 'Trending', 'Energy Usage' and 'Clean Screen' are general information and service screens which do not require a minimum password level for access.

The remaining menu selections require an access level 5 password (minimum). These options will affect the way the compressor works and should be made available only to authorized service personnel. Reference 'Password Setup' on page 26 for more information on setting passwords and password levels.

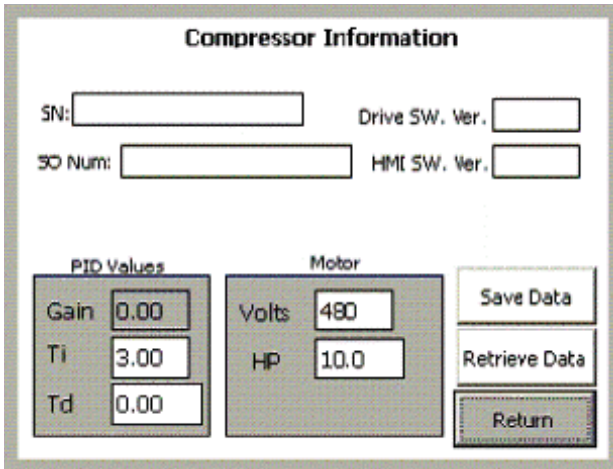
Login -

Service personnel should touch the 'Login' button to access the 'Password Login' screen (figure 4-2) and enter a password with an acceptable password level. Logging in enables service personnel to move through the various menu selections without having to re-enter the password.

NOTICE!

Once the 'Menu Selection' screen is exited (by touching 'Return'), the user will automatically be logged out.

Compressor Information -



This screen shows the compressor serial number, shop order number, drive version, controller version, motor information and other service related items.

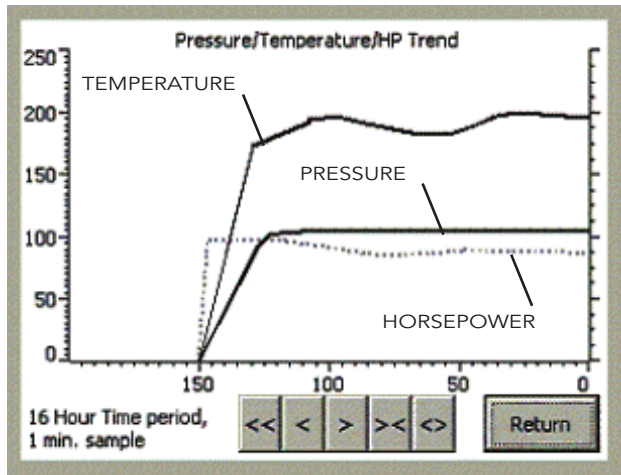
If no valid data is present, touch 'Retrieve Data' to pull the information from the compact flash card. This screen is for information only and no data can be changed here.

'Save Data' is used during factory setup to save the model information.

Touch 'Return' to return to the 'Menu Selection' screen.

Section IV - Operating Procedures

Trending -



The trending screen is a graphical display of the compressor operation over the previous 16 hours (samples taken every minute).

The lines indicate pressure (dark, solid line), temperature (dark, solid line), and calculated horsepower (gray, broken line) and are plotted from right to left (leftmost values being most recent).

The scale on the left indicates the plotted value and the scale along the bottom, is the sample number.

The control buttons allow the graph to be viewed in varying frames (from all 16 hours at one time to expanded sections that may be scrolled left or right).

> < Compress the scale (increase the number of points displayed)

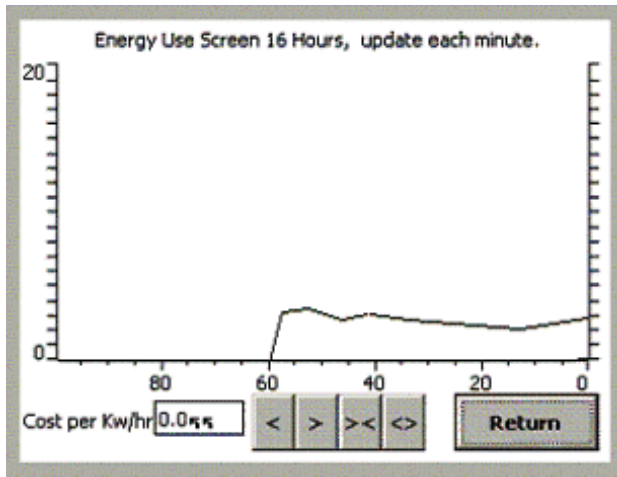
< > Expand the scale (decrease the number of points displayed)

< & > Scroll through the graph to the desired section

< < Return the graph to the extreme left (most recent) point

Touch 'Return' to return to the 'Menu Selection' screen.

Energy Usage -



This screen shows the power consumed by the compressor during the last 16 hours of operation.

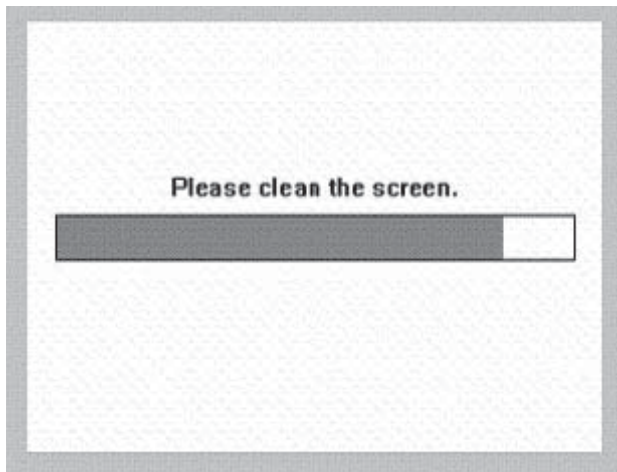
By entering the cost per KW/h, the graph will indicate an estimate of the operating cost of running the compressor.

The vertical scale indicates dollars. The horizontal scale is the number of minutes.

The control buttons at the bottom of the screen are the same as in the 'Trending' screen.

Touch 'Return' to return to the 'Menu Selection' screen.

Clean Screen -



'Clean Screen' is a short duration utility that allows cleaning of the touch screen surface to remove oil and fingerprints and

improve clarity. This utility may be used at any time without stopping the drive. No input from the screen is received while the 'Clean Screen' utility is active. A timer bar indicates the available time until the program returns to the 'Menu Selection' screen.



Use only mild, water based cleaners to clean the touch screen. Do not apply cleaner directly to the panel - use a damp cloth. Do not use solvents for cleaning the screen. Use of solvents may permanently destroy the clarity or operation of the touch input and will void the warranty.

Section IV - Operating Procedures

Calculator Utility -

The 'Settings Calculator' interface is divided into several sections. At the top, there is a 'Pipe Calculations' section with a dark grey background, containing 'CF' and 'CF/psi' fields, both showing '0.0'. To the right of this section is a question mark button. Below this is a 'Receivers (gal)' section with three input fields labeled '1', '2', and '3', each showing '0'. The next section is 'Total CF', 'Gal', and 'CF/psi', all showing '0'. To the right of this is a 'Press. Decay' section with a '0.0' field. The bottom section contains 'Inlet °F' (72), 'Demand %' (0), 'Amb. Psia' (14.3), 'scfm' (0), 'Dscfm' (0), 'Rated CFM' (0), and 'Dcy (min)' (0.0). A 'Calculate' button is located at the bottom right of this section, and a 'Return' button is at the bottom right of the entire interface.

Once the required information is entered on this screen, return to the settings calculator, enter the rest of the required information and press 'Calculate'. (The dark grey squares require information, the white squares show the results of the calculations.)

NOTICE!

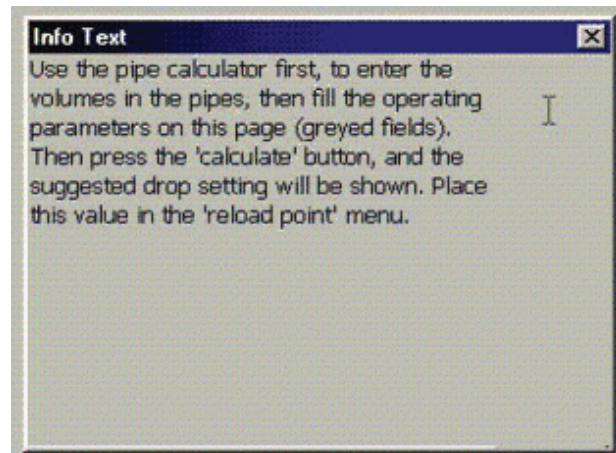
Rated CFM is the compressor's maximum output. Demand is the plant usage as a % of the maximum. Dcy is the blow-down time of the sump (in minutes).

The calculator utility will calculate an estimate of the total capacity of the system and the pressure decay that may be expected over a specified time interval. This information can assist in setting the restart point on the compressor if it should unload.

From the calculator utility screen, select Pipe Calculations to find the overall volume of the piping in the system.

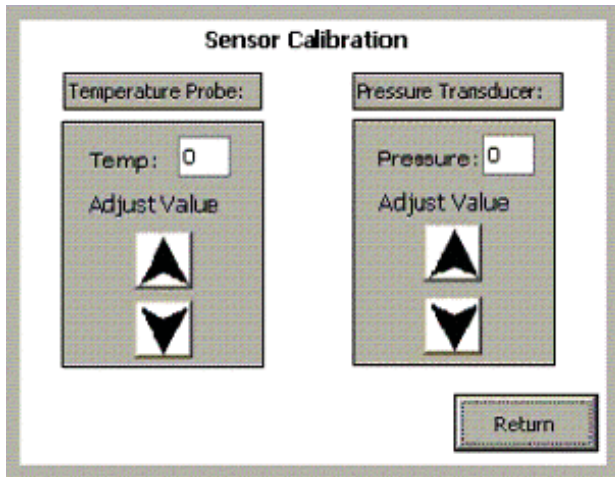
The 'Pipe Calculations' interface consists of a grid of input fields. Each row contains three fields: 'Pipe I.D.' (showing '0.0'), 'Pipe Length' (showing '0'), and 'Cf/Psi' (showing '0.0'). There are four such rows. At the bottom left, there is a text instruction: 'Enter Pipe ID in inches and length in feet.' To the right of this instruction is a 'Return' button.

These are only suggested settings, and are to be used as a guide in configuring the compressor to a stable operating condition.



The ? button brings up this information screen.

Sensor Calibration -



This screen allows adjustment of the offset for the temperature and pressure sensors. This setting should only be adjusted when the sensors are replaced.

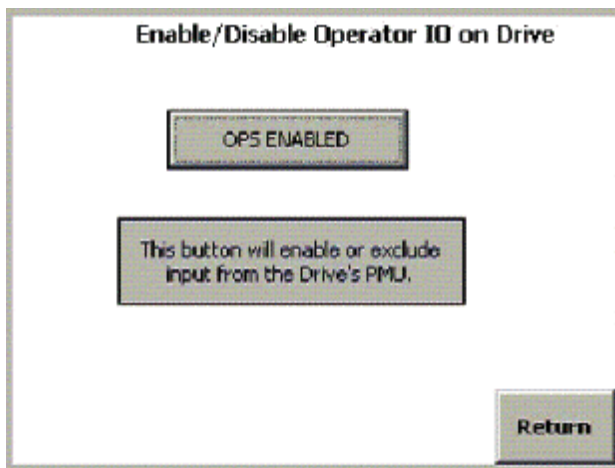
Touch the up or down arrows to adjust the reading (in 1 unit increments) to match the calibration inputs.

NOTICE!

The numbers displayed are the actual numbers for the temperature or pressure that the transducer should be displaying.

Touch 'Return' to return to the 'Menu Selection' screen.

Drive PMU Disable -

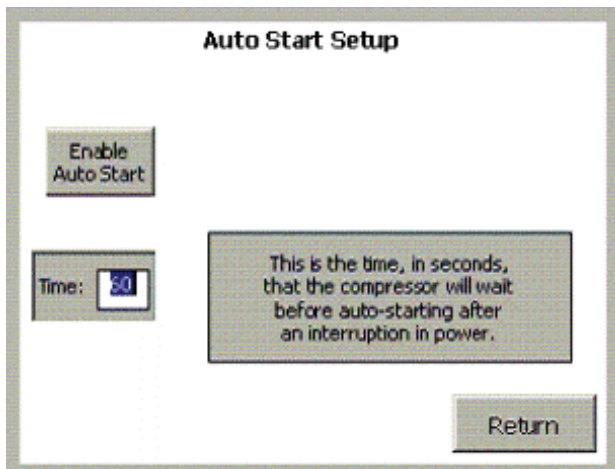


Touch the top button to toggle between 'OPS enabled' and 'OPS disabled'.

When 'OPS disabled' is selected, no changes can be made to the drive settings through the operator panel. This prevents inadvertent setting alterations that could drastically affect the drive operations.

Touch 'Return' to return to the 'Menu Selection' screen.

Auto Start Setup -

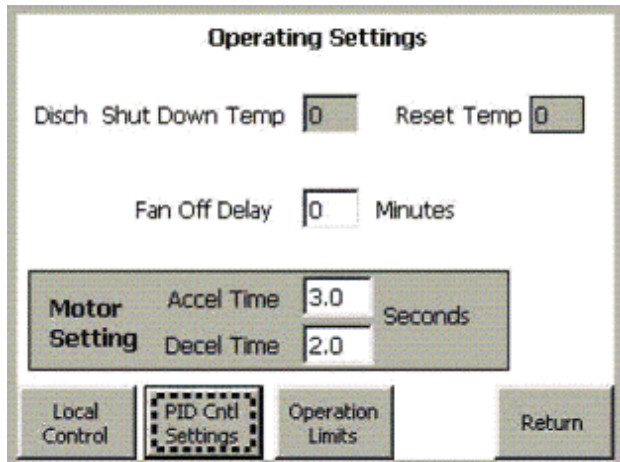


This option enables the automatic start feature. Enter the delay time (in seconds) and touch 'Enable Auto Start' to set the compressor to automatically start upon application of power (following an interruption in power).

Touch 'Return' to return to the 'Menu Selection' screen.

Section IV - Operating Procedures

Compressor Operation -



Some drive settings can be altered in this menu selection, however, the appropriate settings are set at the factory and should not be changed without approval from the factory.

Touch 'Return' to return to the 'Menu Selection' screen.

Default operational settings for QGV compressors:

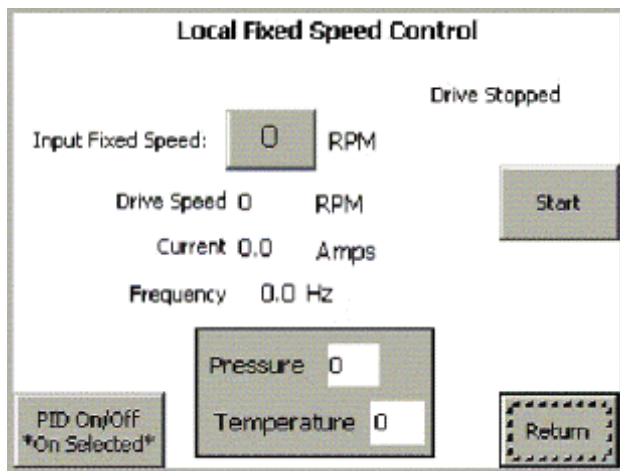
Discharge Shutdown Temperature: 235°F

Reset Temperature (temperature to which the compressor needs to cool before restarting): 200°F

Fan Off Delay (time that the drive fan will run after the drive has stopped): 2 minutes

The motor settings are for its ramp times, and should be similar to the PID loop's integral time, so that the motor speed may track the PID control output more closely.

Local Control -



The 'Local Fixed Speed Control' screen is accessed by touching the 'Local Control' button at the compressor operation screen. This screen is used primarily for test purposes.

To observe the motor power consumption and delivered pressure at a fixed speed:

Touch the 'PID On/Off' button to turn the PID control off.

Touch the button next to 'Input Fixed Speed' to enter the desired fixed speed (within limits of the motor).

NOTICE!

If the PID controller is off, the pressure is not regulated and may, therefore, climb higher than the relief valve setting.

Touch 'Return' to return to the 'Compressor Operation' screen, then 'Return' again to return to the 'Menu Selection' screen.

PID Controller Settings -

PID Controller Settings

Gain: 5.00 Value 0.1-10

Ti: 1.00 Value 0.3-30

Td: 0.02 Value 0.0-30

PSI Set: 0

Drive Stopped: 0 RPM

PSI Out: 0 PID Out: 0.0 Error: 0.0

PID On/Off *On Selected*

Start, Restore Defaults, Return

The PID Controller Settings are accessed by touching the 'PID Cntl Settings' button at the compressor operation screen. PID stands for Proportional/Integral/Derivative.

QGV compressors are designed to adjust the speed of the compressor to maintain a target pressure. The compressor speed changes in response to changes

in measured pressure or target pressure. Error is the difference between target pressure and measured pressure. (i.e.: Error = Target Pressure - Measured Pressure)

Default PID settings: Gain: 5.00
Ti: 1.00
Td: 0.02

Changing the PID settings is not recommended since such changes can greatly affect the response to pressure changes on the compressor. If changes have been made and the default settings need to be restored, touch 'Restore Defaults'.

Touch the 'PID On/Off' button to toggle between on and off.

Touch 'Return' to return to the 'Compressor Operation' screen, then 'Return' again to return to the 'Menu Selection' screen.

Operation Limits -

Operating Limits

Blow Down Timer: 15 Seconds

600 rpm Starting Timer: 10 Seconds

Over-Pressure Hold point Target Pres. + This value: 15 Psi

Return

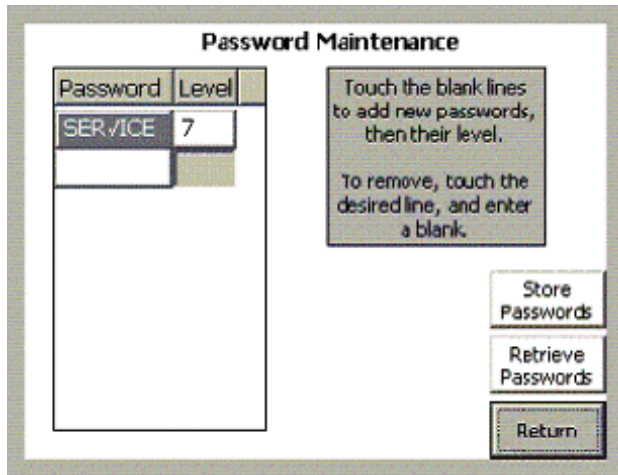
Blow Down Timer determines how long the compressor will continue to run when the minimum speed has been reached.

Starting Timer determines how long the compressor will sit at the minimum speed before activating the PID loop and increasing the delivery.

Over Pressure Hold Point is the pressure at which the compressor will hold at minimum speed and activate the Blow Down Timer. This allows some over-pressure before entering the shutdown sequences.

Section IV - Operating Procedures

Password Setup -



NOTICE!

The default password is 'quincy' which has an access level of 7.

Each unit may be assigned up to eight passwords with access levels from 0 to 7. Level 0 is the lowest level (the public level), level 7 is the highest (provides access to all password protected menus).

Certain menu selections require a minimum access level to enter, thereby providing strict control over who can change the settings of the compressor. Passwords can be set using any combination of up to eight characters (letters and numbers).

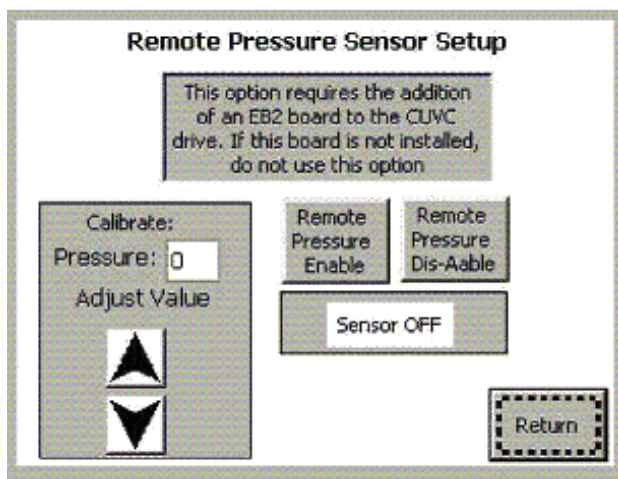
The password list is stored on the Compact Flash card. Touch 'Retrieve Passwords' to display a list of current passwords. To reset the passwords, follow the instructions on the 'Password Maintenance' screen and touch 'Store Passwords' to save.

Touch 'Return' to return to the 'Menu Selection' screen.

To access 'Password Maintenance', touch 'Password Setup' at the 'Menu Selection' screen.

To prevent casual alterations in the settings several entry points in the menu selections are password protected. Since all passwords are maintained here, 'Password Maintenance' requires a password level of 7 to access.

Remote Pressure Sensor Setup -



This option can be used to add an additional pressure sensor to the system, typically located on the storage tank, to assist the compressor in adapting to pressure changes.

As indicated on the screen, this option requires the installation of an EB2 board in the drive.

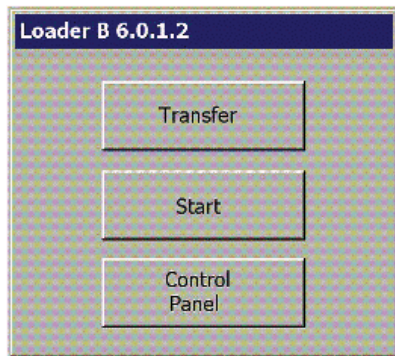
Access this screen to enable or disable the sensor and to display the current status.

The remote sensor may be calibrated as well.

NOTICE!

This is only to ZERO pressure offsets, and not for scales, which are assumed to be fixed at 300 psig.

Exit Runtime -



Touching 'Exit Runtime' accesses the system menu shown above. In this menu:

- 'Transfer' enables downloading of a new program (from a laptop).

- 'Start' returns to the control panel program.
- 'Control Panel' accesses Windows CE operating system to allow the program to be saved to the compact flash card or restored (uploaded) to the control panel. Service screens are also available to adjust the contrast of the display, calibration of the touch input and other items associated with the panel.

NOTICE!

Programs may be uploaded without requiring the drive to be shutdown, however, all values in the trend buffer and local variable storage will be lost when the new program is downloaded.

Stopping the Compressor - Normal Operation

- Close the service valve to the plant air distribution system.
- Allow the pressure to build within the reservoir and the compressor to fully unload.
- Touch the 'Stop' button on the touch screen or remove power at the main disconnect switch or panel.

NOTICE!

Close the service valve when the compressor is not being used to prevent the system's air pressure from leaking back into the compressor if the check valve leaks or fails.

Stopping the Compressor - Emergency

Press the red stop button on the electrical enclosure door or remove power at the main disconnect switch or panel.

Section V - Servicing

- Preparing for Maintenance or Service
- Maintenance Schedule
- Safety
- Water Removal
- Service Adjustments
- Compressor Fluid
- Fluid Filter
- Fluid Level
- Fluid Scavenging System
- Fluid Cooler/Aftercooler (air-cooled)
- Fluid Tubing
- Air Filter
- Air/Fluid Separator Element
- Replacing Sensors or Transducers
- Control Panel Fault or Service Messages
- Replacing the Control Panel
- Shaft Seal

Preparing for Maintenance or Service

When preparing for maintenance or service, take the following steps to ensure maximum safety of service personnel:

- Disconnect and lockout the main power switch and hang a sign at the switch of the unit being serviced.
- Close shutoff valve (block valve) between receiver and plant air system to prevent any backup of air flow into the area to be serviced. NEVER depend upon a check valve to isolate the system.
- Open the manual vent valve and wait for the pressure in the system to be completely relieved before starting service. DO NOT close the manual vent valve at any time while servicing.



WARNING!

Relieve compressor and system air pressure by opening the appropriate manual relief valve prior to servicing. Failure to relieve all system pressure could result in death or serious injury and property damage.

- (Water-cooled units) - Shut off water and depressurize system.



WARNING!

Never assume the compressor is ready for maintenance or service because it is stopped. The automatic start feature may start the compressor at any time. Death or serious injury could result.

Important Maintenance Requirements

To maintain warranty and to insure the compressor operates correctly and safely you must use genuine Quincy Compressor parts. Failure to correctly install equipment, use of non-genuine Quincy Compressor parts, or perform recommended scheduled maintenance, will void warranty and result in damage to or failure of the equipment. This could also result in a fire and fatalities.

Before performing any maintenance, stop the compressor, close the shut-off valve at the package discharge, remove all electrical power from the equipment per OSHA requirements for lock-out and tag-out, and verify the receiver tank on the package is at zero pressure. You can now safely work on the package.

If the branch circuit protection is provided using a fused disconnect to supply power to the compressor package then verify that all the fuses are of the same type and properly sized. If a circuit breaker is used to supply power then verify that it is properly sized. Visually inspect and verify that the connections at the branch circuit protection device are tight and the wire insulation is not degraded. Visually inspect the wire from the branch circuit protection device to the compressor starter to verify that it is sized correctly and in good order. Verify the power wire and ground connections at the compressor starter are tight and in good order. Also verify the wire connections from the compressor starter to the compressor motor are tight and in good order. Document and correct any issues found.

Inspect all tubing in the compressor package for possible leaks, or normal aging and replace with genuine Quincy Compressor parts as needed. Verify all tube fittings are tight and tubes are securely held in the fittings. Also check all nylon tubes for chaffing, cracks, and flexibility. Replace with genuine Quincy Compressor parts to insure safe operation.

Drain any condensation that may have collected in the receiver tank. Take oil sample for evaluation and be sure to mark sample with customer name, compressor model, compressor serial number, and running hours on the compressor. Replace oil with genuine Quincy Compressor oil of the same type when needed. Low oil will result in oil foaming, oil carryover, and higher compressor temperatures that could result in a fire.

Replace all consumables at recommended service intervals or sooner if operating conditions warrant.

Normal service intervals

Air Filter 2000 Hours

Oil/Fluid Filter 1000 Hours

Oil/Fluid 8000 Hours * Based on fluid type and sample testing this time can be different.

Or replace all consumables every 12 months.

Replace annually or as the separator differential indicates if sooner.

Poor maintenance or the use of non-genuine Quincy Compressor parts will cause equipment failure and possibly result in fire.

Important Requirements for Safety

The drive in this unit contains capacitors that will maintain a high voltage charge after power is removed. Before performing any maintenance on the compressor package allow at least 5 minutes for the capacitors to discharge after removing power to the package. Verify that there are no indicator lights or displays on the drive that are in an on state indicating power is still in the drive before working on the unit. Remember to always lock out and tagout the power source to the package per OSHA regulations.

Section V - Servicing

Maintenance Schedule

THIS SCHEDULE IS INTENDED TO BE USED AS A GUIDELINE ONLY. DEPENDING ON THE SPECIFIC OPERATING CONDITIONS OF YOUR QGV COMPRESSOR, MAINTENANCE REQUIREMENTS MAY VARY. THE INSTRUCTIONS ON THE FOLLOWING PAGES WILL GIVE MORE DETAILS ABOUT DETERMINING WHEN SPECIFIC SERVICE SHOULD BE PERFORMED.

PERIODICALLY/DAILY: (8 HOURS MAXIMUM)	MONITOR ALL GAUGES AND INDICATORS FOR NORMAL OPERATION. CHECK FLUID LEVEL. DRAIN WATER FROM AIR/FLUID RESERVOIR. OBSERVE FOR FLUID LEAKS. OBSERVE FOR UNUSUAL NOISE OR VIBRATION.
MONTHLY:	REPLACE AIR FILTER. (DAILY OR WEEKLY SERVICE MAY BE REQUIRED UNDER CERTAIN CONDITIONS.) CLEAN FLUID COOLER FINS (AIR-COOLED). WIPE DOWN ENTIRE UNIT TO MAINTAIN APPEARANCE.
EVERY 6 MONTHS OR 1000 RUNNING HOURS:	TAKE FLUID SAMPLE. REPLACE FLUID FILTER.
PERIODICALLY/YEARLY:	CHECK ALL BOLTS FOR TIGHTNESS. LUBRICATE MOTORS. CHECK SAFETY (HAT) SHUTDOWN SYSTEM. TEST PRESSURE RELIEF VALVE FOR PROPER OPERATION. REPLACE AIR/FLUID SEPARATOR ELEMENT. REPLACE FLUID. CONTACT A QUALIFIED SERVICEMAN.

NOTICE!

Reference pages 32 thru 43 for specific instructions on performing general maintenance. Reference Section VI - Compressor Fluids for instructions regarding taking fluid samples and selecting an appropriate fluid for your machine.

NOTICE!

Failure to follow these maintenance and service recommendations may adversely affect your warranty. Copy the Maintenance Record (Appendix C - page 75) and maintain accurate and complete maintenance records to ensure warranty compliance.



- | | |
|--|---|
| | <ol style="list-style-type: none"> 1. Read the instruction book. Drain the condensate to reduce the risk of corrosion. 2. Drain the vessel daily by opening the manual drain valve. 3. Inspect the vessel wall-thickness yearly and note down the inspection date. |
|--|---|

Component	Description	Number of Cycles (1)	Minimum wall thickness	Inspection frequency (2)
147752-200	Oil separator vessel	2 x 10	.094 in (shell) .094 in (head)	10 years
147753-200	Oil separator Vessel	2 x 10	.094 in (shell) .094 in (head)	10 years
147535-200	Air Receiver	2 x 10	.184 in (shell) .149 in (head)	1 year
128848-200	Air Receiver	2 x 10	.181 in (shell) .149 in (head)	1 year
147792-200	Air Receiver	2 x 10	.184 in (shell) .149 in (head)	1 year
147330-175	Oil separator vessel	2 x 10	.140 in (shell) .115 in (head)	10 years

- (1) The number of cycles refers to the number of cycles from 0 PSI to maximum pressure.
- (2) The minimum wall thickness must be respected at all times. Inspection techniques such as ultrasonic or X-ray are equivalent to hydrostatic testing for this equipment.

Section V - Servicing

Safety

Safety procedures while servicing the compressor are important to both the service personnel and to those who may be around the compressor and the system it serves. Listed below are some, but not all, procedures that should be followed:

- Wait for the unit to cool before starting service. Temperatures may exceed 180°F when the compressor is operating.
- Clean up fluid spills immediately to prevent slipping.
- Loosen, but do not remove, flange or component bolts. Carefully pry apart to be sure there is no residual pressure before removing bolts.
- Never use a flammable solvent such as gasoline or kerosene for cleaning air filters or compressor parts.

- Safety solvents are available and should be used in accordance with their instructions.

NOTICE!

Maintenance or service should be performed by trained and qualified service technicians only.

CAUTION!

Unusual noise or vibration indicates a problem. Do not operate the compressor until the source has been identified and corrected.

Water Removal

Water vapor may condense in the reservoir and must be removed. Water is heavier than the compressor fluid and will collect at the bottom of the reservoir.

The frequency with which the water must be removed is determined by the ambient air conditions. During hot and humid conditions, water should be drained off the bottom of the reservoir daily. In cold and dry conditions, water may only need to be drained weekly.

WARNING!

Water content in the compressor fluid in excess of 200 PPM could cause bearing damage and/or airend failure.

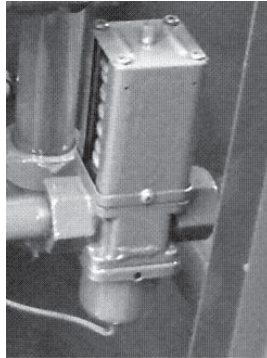
To drain water from the reservoir:

- Turn the compressor off by the main switch and perform proper lockout/tagout procedure.
- Completely depressurize the compressor circuits (reference 'Preparing for Maintenance or Service' on page 28 and 'Safety' instructions on page 30).
- Allow compressor to sit idle for at least 5 minutes.
- Open the drain valve.
- Close the valve when the water flow changes to compressor fluid. (When the drain is first opened some compressor fluid may come out before the water starts to flow.)
- Since this water will contain some compressor fluid, dispose of the water in accordance with Local, State, and Federal environmental regulations.

Service Adjustments

Water Temperature Regulating Valve (75 & 100 hp, water-cooled units only)

The water temperature regulating valve senses fluid temperature and opens or closes, regulating water flow from the unit. It is factory set to maintain 180°F discharge temperature.



Due to variations of incoming water temperatures and/or pressures at each location, check valve adjustment during start-up to maintain 180°F discharge temperature.

- To increase fluid temperature: turn the adjustment screw clockwise to decrease water flow.
- To decrease fluid temperature: turn the adjustment screw counterclockwise to increase water flow.

Water-cooled Heat Exchangers

Most water-cooled heat exchanger problems result from underestimating the importance of water treatment and heat exchanger maintenance. Cleaning the heat exchanger tubes on a regular basis and providing a clean, soft and/or treated water supply will ensure the efficient, long service life of the heat exchangers.

Impurities in the cooling water supply can impact the service life of the heat exchanger. It is strongly recommended that a reputable, local water treatment company be engaged prior to start-up to establish the corrosion, scale forming and fouling tendency of the cooling water and remedy the situation if a problem does exist.

NOTICE!

Failure to develop a water treatment plan may result in increased maintenance and operating expense, reduced equipment life and emergency shutdown.

Water treatment may involve filtration (screening) to remove debris, sand and/or silt in the water supply or, in more severe cases, chemical treatment methods may be necessary to inhibit corrosion and/or remove suspended solids to reduce the water's tendency to form scale deposits or prevent growth of microorganisms.

The normal maintenance program for the unit should include periodic cleaning of the tube side (water side) of the heat exchanger to remove deposits that enhance fouling and corrosion.

NOTICE!

The user is responsible for ensuring adequate water quality and keeping the heat exchanger clean. Heat exchanger failure caused by plugging or corrosion is not covered by warranty.

Section V - Servicing

Compressor Fluid

The interval for changing the compressor fluid depends on the type of fluid used and the operating conditions of the unit. See Section VI - Compressor Fluids for more specific information concerning fluid life of specific fluids.

Fluid change instructions:

- Turn the compressor off by the main switch and perform proper lockout/tagout procedure.
- Completely depressurize the compressor circuits (reference 'Preparing for Maintenance or Service' on page 28 and 'Safety' instructions on page 30).
- Slowly unscrew the plugs at the fluid fill and discharge port.
- Attach a pipe to the drain valve, open the drain valve and allow all the fluid to drain from the unit. In order for all fluid to be removed, fluid should be at running temperature (between 140°F and 175°F).
- Dispose of the fluid in accordance with Local, State, and Federal environmental regulations.
- Remove the pipe, close the draincock and reinstall the plug.
- Fill the compressor with the appropriate amount of new fluid through the fluid inlet port.
- Check the fluid level at the sightglass.
- Replace the o-ring on the fluid filler cap and reinstall.

Fluid Filter

The fluid filter is a spin on, full flow unit. Replacement of the filter requires spinning off the cartridge and replacing it with a new one.



The initial filter change should occur after the first 500 hours of operation. During normal service, the filter cartridge should be replaced under the following conditions, whichever occurs first:

- every 1,000 hours
- every fluid change

Replacing the fluid filter:

- Turn the compressor off by the main switch and perform proper lockout/tagout procedure.
- Completely depressurize the compressor circuits (reference 'Preparing for Maintenance or Service' on page 28 and 'Safety' instructions on page 30).
- Using a suitable band spanner, unscrew and remove the fluid filter.
- Lubricate the new filter gasket and install the filter.

NOTICE!

Use genuine Quincy replacement filters only.

- Tighten using the band spanner.
- Dispose of the used fluid filter cartridge in accordance with Local, State, and Federal environmental regulations.

Fluid Level

The correct fluid level is important for the reliability of the compressor. The fluid level is monitored by a sightglass while the compressor is in operation. The fluid level should be checked daily and should be in the middle of the sightglass (between 'minimum' & 'maximum') when the compressor is running loaded. If a low fluid level is observed, add enough fluid to bring the fluid back to the proper level. **DO NOT OVER FILL.** The correct fluid capacity of QGV compressors is indicated in the parts book supplied with the unit.



To avoid damage to the compressor, it is very important that the same type of fluid be used when topping off the fluid level in the compressor. Never mix different types of fluid.

To top off the fluid level (add fluid):

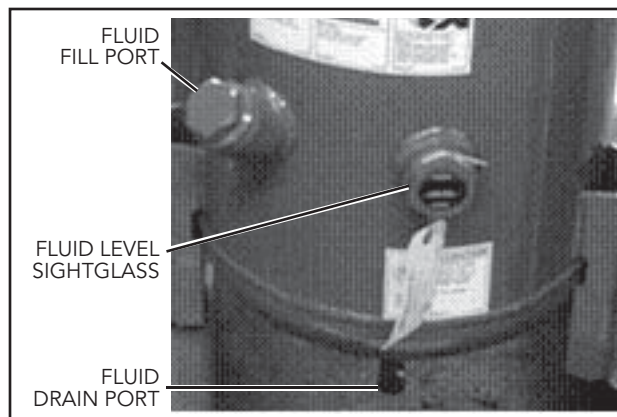
- Turn the compressor off by the main switch and perform proper lockout/tagout procedure.

- Completely depressurize the compressor circuits (reference 'Preparing for Maintenance or Service' on page 28 and 'Safety' instructions on page 30).
- Wait one minute and check the fluid level.
- Unscrew the fluid fill plug.



Hot fluid under pressure could cause death or serious injury. Do not remove the fluid fill plug and attempt to add fluid to the reservoir while the compressor is in operation or when the system is under pressure.

- Add the required amount of fluid through the fluid fill opening.
- Reinstall the fluid fill plug.
- Restart the compressor and recheck the fluid level.

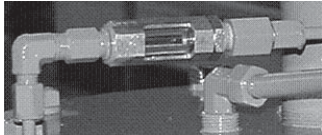


Section V - Servicing

Fluid Scavenging System

Fluid from inside the separator element is returned to the inlet valve or airend by a scavenger tube positioned inside the separator element, through an orifice and tube connected to the compressor. Failure to keep the orifice clean will result in excessive fluid carryover. Cleaning of the orifice should be performed as follows:

- When no fluid is seen moving through the scavenge line sight glass.



- When excessive fluid carryover is detected.
- Every fluid change.
- Once per year.

NOTICE!

Do not ream the orifice or change the orifice size. Do not install the orifice reversed.

Fluid Cooler/Aftercooler (air-cooled)

The exterior of the fluid cooler/aftercooler should be cleaned periodically to ensure sufficient cooling capability. Dirty fins in the cooler degrade the ability for the cooler to work properly.

To clean the cooler fins:

- Switch the compressor off by the main switch and perform proper lockout/tagout procedure.
- Clean the cooler fins using compressed air.

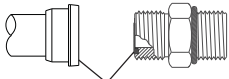
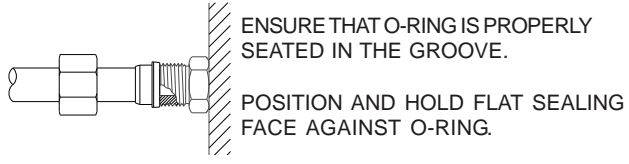
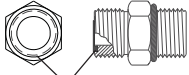
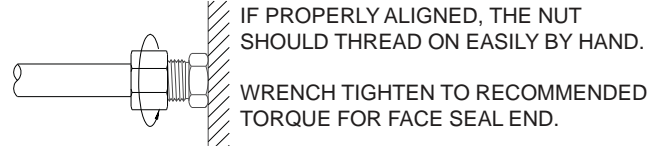
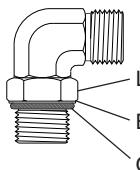
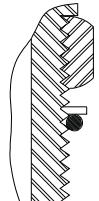
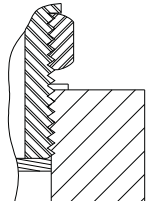
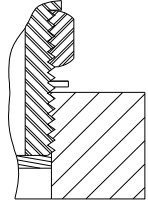
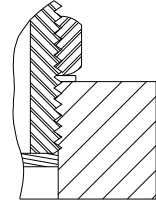
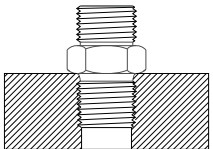
Fluid Tubing

Flareless tubing is used in the fluid piping to eliminate pipe joints and provide a cleaner appearance.

Replacement tubing and fittings are available; however, special installation procedures must be followed. Your authorized distributor has the necessary instructions and experience to perform these repairs.



Failure to install flareless tubing or fittings correctly may result in the tubing coming apart under pressure. Serious injury and property damage may result.

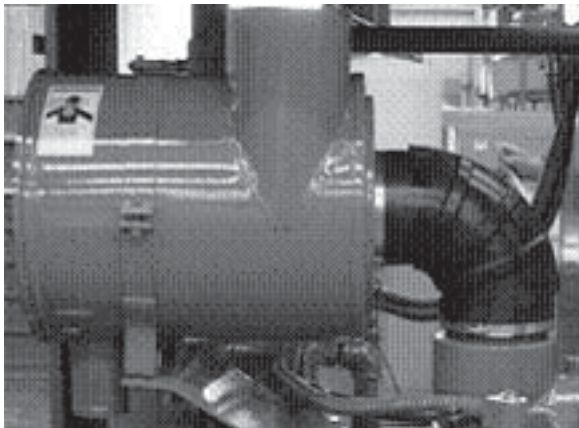
ASSEMBLING THE FACE SEAL END			
<p>1) CHECK SEALING SURFACES</p>  <p>CHECK SEALING SURFACE AND GROOVE FOR DAMAGE OR MATERIAL BUILDUP.</p>	<p>3) POSITION TO FITTING</p>  <p>ENSURE THAT O-RING IS PROPERLY SEATED IN THE GROOVE. POSITION AND HOLD FLAT SEALING FACE AGAINST O-RING.</p>		
<p>2) INSTALL O-RING</p>  <p>CORRECTLY SIZED O-RING IS 0.070" THICK AND ITS O.D. TOUCHES THE OUTSIDE EDGE OF THE GROOVE.</p>	<p>4) THREAD NUT ON BY HAND & 5) WRENCH TIGHTEN</p>  <p>IF PROPERLY ALIGNED, THE NUT SHOULD THREAD ON EASILY BY HAND. WRENCH TIGHTEN TO RECOMMENDED TORQUE FOR FACE SEAL END.</p>		
ASSEMBLING ADJUSTABLE END TO PORT			
<p>1) CHECK SEALING SURFACES & INSTALL O-RING</p>  <ul style="list-style-type: none"> • INSPECT FITTING FOR DAMAGE • USE O-RING INSTALLATION TOOL TO INSTALL O-RING • APPLY SMALL AMOUNT OF LUBRICANT TO O-RING 			
<p>2) BACK OFF NUT</p>  <p>BACK OFF LOCKNUT TO ITS UPPERMOST POSITION</p>	<p>3) THREAD INTO PORT</p>  <p>THREAD FITTING INTO THE PORT UNTIL THE BACKUP WASHER CONTACTS THE SURFACE</p>	<p>4) BACK OFF FOR ALIGNMENT</p>  <p>POSITION FITTING FOR ATTACHING LINE BY UNTHREADING UP TO 360°</p>	<p>5) WRENCH TIGHTEN</p>  <p>WRENCH TIGHTEN LOCKNUT</p>
ASSEMBLING NON-ADJUSTABLE PORT END			
 <ul style="list-style-type: none"> • INSPECT SEALING SURFACES FOR DAMAGE • INSTALL O-RING • THREAD FITTING INTO PORT AND WRENCH TIGHTEN 			

SEAL-LOK ASSEMBLY TORQUES (IN/LBS.)								
DASH SIZE	4	6	8	10	12	16	20	24
FACE SEAL END	220±10	320±25	480±25	750±35	1080±45	1440±90	1680±90	1980±100

Section V - Servicing

Air Filter

A heavy-duty air filter is standard on all QGV models. The heavy-duty air filter is a two stage, dry type element. The first stage is cyclonic. That is, centrifugal airflow spins the larger dirt particles to the outside walls of the filter canister. In the second stage, air passes through the filter element with an efficiency of 99.9% as tested by SAE J7266 test code specifications.



To replace the air filter element:

- Turn the compressor off by the main switch and perform proper lockout/tagout procedure.
- Remove the cover from the end of the air filter canister.
- Remove the old filter and replace with a new one.
- Secure the cover after making certain the element is seated correctly in the canister.

NOTICE!

Intake filtration equipment supplied from the factory may not be adequate for extremely dirty applications or some forms of dust or vapors. It is the customer's responsibility to provide adequate filtration for those conditions. Warranty will be voided if inadequate filtration causes a failure.

Air/Fluid Separator Element

The separator element is a one piece construction that coalesces the fluid mist, passing through the filtering media, into droplets that fall to the bottom of the separator element to be picked up by a scavenging tube and returned to the compressor. Use care when handling the separator element to prevent it from being damaged. Denting may destroy the effectiveness of the filtering media and result in excessive fluid carryover. Even a very small hole punctured through the element will result in a high fluid carryover.

WARNING!

QGV-50 thru 100 horsepower: Do not remove the staples from the separator element. Their function is to prevent an electrostatic buildup which could spark a fire. Use genuine Quincy replacement separators.

Continuity Testing of Separator Elements

NOTICE!

Electrical continuity between all separator element metal surfaces must be checked prior to replacing any separator element. Do not install if continuity is not present. Return the separator element to your Quincy Distributor for replacement.

Prior to installation, test the separator element as follows:

- 1) Locate a continuity test light or a volt-ohm-meter (v-o-m) capable of reading 20 ohms.
- 2) Assure that the battery has proper charge. Touch the probe leads together to assure the light works or to zero calibrate the meter.
- 3) Contact the grounding staple (on the separator element gasket) or grounding spring clip (on separator elements that do not require a gasket) with the ground probe of the test indicator.
- 4) Touch the top cap of the separator element with the other probe. The indicator light should illuminate on the test or the v-o-m test must read no more than 20 ohms.
- 5) Touch the bottom cap of the separator element. The indicator light should illuminate on the test or the v-o-m test must read no more than 20 ohms.
- 6) Touch the outside wire mesh. The indicator light should illuminate on the test or the v-o-m test must read no more than 20 ohms.
- 7) Touch the inside wire mesh (do not puncture the element media). The indicator light should illuminate on the test or the v-o-m test must read no more than 20 ohms.
- 8) If the separator element has a gasket on each side of the flange, repeat steps 3 through 7.
- 9) If the separator element fails any of the above test , return it to your Quincy Distributor for replacement.
- 10) Make sure the compressor is bonded (wired) to an earth ground to dissipate static electricity.

QGV-150/200 Separator Installation

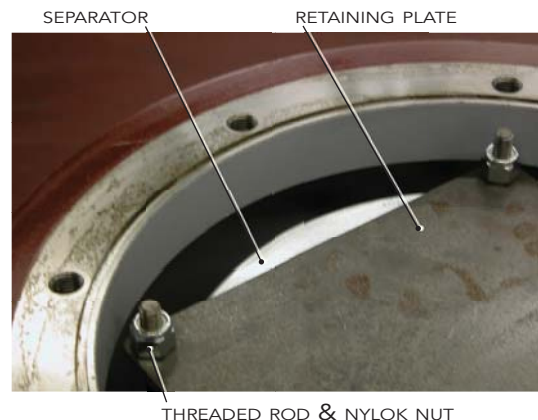
The 150 and 200 horsepower models utilize an inside/out flow requiring the separator seal to be located on the inlet to the separator. The sealing surface is located inside the pressure vessel and is coated to prevent corrosion. Remove any loose material prior to separator installation.

After the continuity verification procedure is complete install the separator as follows:

1. Lubricate the separator o-ring with compressor fluid and place separator inside the reservoir with o-ring end facing down, centered inside studs.
2. Place the square separator compression plate over the 4 studs.
3. Install the (4) Nylok nuts on studs and tighten as follows:

Turn nuts down until they're touching the compression plate. **Do not overcompress o-ring.**

Tighten nuts by turning clockwise $\frac{1}{2}$ turn in a cross pattern. Over tightening the compression plate will deform the separator, reducing performance.



Section V - Servicing

Replacing Sensors or Transducers

To replace a temperature sensor (HAT probe):

- Disconnect conduit from elbow of probe.
- Cut wires and remove probe from discharge tube.
- Install new probe into discharge tube.
- Connect wires of new probe to existing wires using suitable splice and insert in to conduit.
- Connect conduit to elbow of probe.
- Complete HAT test to verify correct installation.

To replace a pressure transducer:

- Open enclosure door and locate the pressure transducer (in the upper left-hand corner of the panel).
- Remove wire channel cover
- Trace wires from transducer to the microprocessor.

NOTICE!

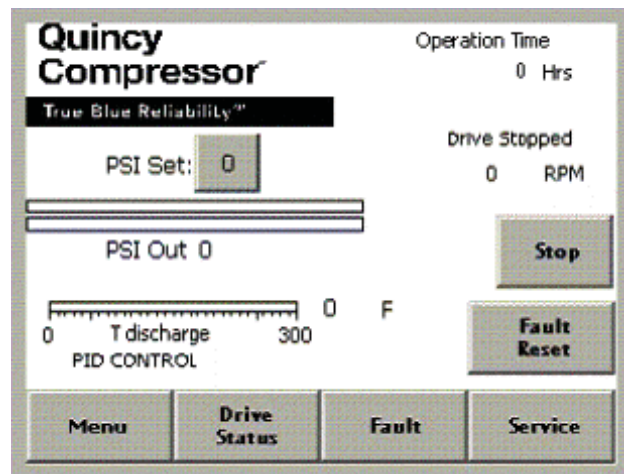
Prior to touching any portion of the printed circuit board, ground yourself using a grounding wrist strap to remove any static electricity.

- After assuring the compressor is properly grounded, clip the grounding wrist strap to any exposed metal on the frame of the compressor.
- Disconnect transducer wires at microprocessor.
- Remove transducer from delrin bushing.
- Replace the delrin bushing.
- Install new Teflon bushing and transducer.
- Connect transducer wires to microprocessor and reinstall wire channel cover.

Control Panel Fault or Service Messages

The control panel screen will display a 'Fault' or 'Service' button to indicate any alarms or service requirement messages.

Touch the gray button ('Fault' or 'Service') to access the message(s), touch 'Fault Reset' to clear the message after service has been performed or the fault has been corrected.



Replacing the Control Panel



WARNING!

Prior to attempting repairs of the electronic control or related components, disconnect and lock out all power supplies to the compressor as well as any remote controllers.

Assure that power is removed from the compressor

by checking for AC voltage at the line side of the motor starter.



NOTICE!

Prior to replacing the control panel, document the existing information regarding total running hours, separator hours, air filter hours, fluid filter hours and fluid service/sample hours. This data will be transferred to the replacement control prior to start-up.

- Remove screws attaching control to door of enclosure.
- Remove and discard wire tiewraps.



NOTICE!

Prior to touching any portion of the printed circuit board, ground yourself using a grounding wrist strap to remove any static electricity.

- After assuring the compressor is properly grounded, clip the grounding wrist strap to any exposed metal on the frame of the compressor.
- Identify individual wire location(s). (Reference the electrical wiring diagram found in the control panel of the unit.)
- Install new electronic control panel and install wiring in accordance with electrical wiring diagram.
- Attach new control to enclosure door using existing hardware.
- Install new wire tiewraps to secure wiring to wire bundle.

Operational Test

- Remove tag and lock out tools.
- Restore power to unit.
- If the control panel was replaced, reference Section IV - Operating Procedures to program the replacement control.
- Perform an operational test to assure unit is operating correctly.

Section V - Servicing

Shaft Seal

Compressor shaft seals are wear items that may eventually have to be replaced. Special tools and a complete understanding of the installation procedure are required for a successful seal replacement. Ask your Quincy distributor for complete illustrated instructions (available as a Service Alert) at the time you order the seal and special tools, if you decide to replace the seal yourself. If your distributor does not have a copy of these instructions, they can be ordered from Quincy Compressor at no charge.

QGV compressors incorporate a fluid scavenge system to complement the use of a triple lip seal assembly. Any complaint of shaft seal leakage requires that the scavenge system be inspected for proper operation prior to the replacement of the shaft seal. Proper inspection consists of the following:

- Assure that the scavenge line itself is not plugged.
- Inspect the performance of the scavenge line check valve by removing the fitting located at the bottom of the motor adapter. Remove the check ball and inspect for wear. If the check valve is stuck open, fluid can backflush from the airend into the seal cavity and appear as a leak. If the check valve is stuck closed the seal cavity will not scavenge. Replace if necessary.
- Remove the coupling guards and coupling halves
- Remove the drive coupling hub and key from the compressor shaft.
- Remove the drive motor.
- Remove the four bolts securing the seal adapter to the suction housing.
- Insert two of the seal adapter retaining bolts into the seal adapter jack holes and turn clockwise (pushing the seal adapter away from the suction housing).
- After the seal adapter outer o-ring has cleared the seal adapter bore, remove the adapter for inspection.
- Disassemble the seal adapter as follows:
 - a. With the face of the seal adapter up, insert two small, flat screwdrivers under the outer lip of the fluid slinger and pop the slinger from the seal adapter bore.
 - b. Using a brass drift, tap the shaft seal assembly from the seal bore.
 - c. Inspect both seal lips for excessive wear, lip flaws or damage.
 - d. Inspect the outer o-ring on the fluid slinger for cuts or nicks.
 - e. Inspect the outer o-ring on the seal adapter for cuts and nicks.
 - f. Slide the wear sleeve removal tool over the end of the shaft and allow the jaws of the tool to snap on the backside of the wear sleeve. Tighten the outer shell of the tool down over the inner jaws.
 - g. Using a ratchet and socket, turn the puller jack screw clockwise in against the end of the compressor shaft to remove the seal wear sleeve.



Do Not use an impact wrench with this tool.

Preparation for New Seal Installation

- Inspect the compressor shaft for burrs or deep scratches at the wear sleeve area. Using a 100-grit emery cloth, lightly sand horizontally any rust or Loctite™ on the shaft. Using a fine file or emery cloth, deburr the key area of the rotor shaft. Cover the keyway with masking tape to prevent damage to the new seal during installation.
- Clean the seal adapter with fast drying solvent. Assure that the scavenge drain in the seal adapter is clean and open. Place the outer face of the seal adapter on a flat, hard surface.
- Remove the new triple lip seal from the package and inspect for damage or imperfections on the seal lips.
- Apply a thin coat of Loctite™ 290 to the outer steel case of the seal and position the seal in the seal adapter bore.
- Insert the proper seal driver over the seal. Insert the proper wear sleeve driver in the seal driver and tap the new seal into the bore with a medium sized hammer.
- Preheat the wear sleeve (in a small oven) to 350°F. Do not preheat in warm oil.
- Apply a thin film of Loctite™ to the inner diameter of the wear sleeve and immediately install on the compressor shaft using the proper wear sleeve driver. Drive the wear sleeve on the shaft until the driver bottoms on the shaft shoulder.

Seal Installation

- Apply a thin coat of compressor fluid to the outer face of the wear sleeve and seal lip.
- Slide the proper seal installation sleeve against the wear sleeve with the taper toward the end of the rotor shaft.
- Install a new o-ring on the seal adapter and lubricate with compressor fluid.
- Install a new o-ring around the scavenge port (use petroleum jelly to hold the o-ring on the seal adapter face during installation).
- Carefully slide the seal adapter with the new seal installed over the end of the rotor shaft and up against the adapter bore.
- Using care not to damage the o-ring, evenly draw the adapter into the bore, install the four retaining bolts and tighten to the specified torque.
- Remove the installation sleeve.
- Apply a thin film of compressor fluid to the o-ring and seal lip of the outer fluid slinger.
- Install the outer slinger over the end of the rotor shaft and push into the scavenge bore using both thumbs.
- Reinstall drive motor, and coupling.
- Reinstall the coupling guards before starting the compressor.

Section VI - Compressor Fluids

- Fluid Specifications
- Lubrication
- Fluid Sample Valve
- Factors Affecting Fluid Life
- Fluid Analysis Program - General
- Sampling Procedures
- Understanding the Analysis Report
- QuinSyn-Plus
- QuinSyn-XP
- QuinSyn-PG
- QuinSyn-F
- QuinSyn Flush
- Cleaning and Flushing With QuinSyn Flush
- Converting to QuinSyn-PG
- Converting to QuinSyn-XP
- Converting to QuinSyn-Plus
- Converting to QuinSyn-F
- Fluid Parameters

Fluid Specifications

The functions of the compressor fluid are:

- to lubricate the bearings and rotors.
- to remove heat from the air as it is being compressed thus lowering the compressed air discharge temperature.
- to seal the rotor clearances.

We recommend that all Quincy rotary screw compressors be filled with one of the following synthetic fluids:

- QuinSyn-Plus - Standard fill. Synthetic hydrocarbon/ester blend.
- QuinSyn-XP - Standard fill for high pressure applications. Synthetic polyolester.
- QuinSyn-PG - Synthetic polyalklene glycol/ester blend.
- QuinSyn-F - Special fluid blend for food grade applications.

A fluid tag is attached to each Quincy rotary screw compressor indicating the type of fluid provided in the initial fill. All of the fluids listed are available from any authorized Quincy distributor.



CAUTION!

Do not mix different grades or types of fluid. Do not use inferior grades of fluids.

NOTICE!

Failure to follow these fluid recommendations will adversely affect your warranty.

Lubrication

QGV models use pressure differential to circulate the fluid. Positive pressure maintained in the reservoir forces fluid throughout the machine. Fluid is circulated through the cooler, fluid filter, and into the compressor.

In the compressor, fluid is diverted through internal passages to ensure positive lubrication of the bearings and shaft seal. The remainder of the fluid is injected at the beginning stage of the compression cycle to seal clearances and to cool and lubricate the rotors.

Each Quincy compressor is filled at the factory with the correct amount of one of the synthetic fluid listed in the Fluid Specifications. Mineral oil can be requested and used in specific applications. The use of other brands or types of fluid may reduce the design life of the compressor or cause problems with filtration or carryover. Consult the Quincy Service Department before changing brands of fluid.

Fluid Sample Valve

QGV models are equipped with a fluid sample valve located at the discharge of the fluid filter.

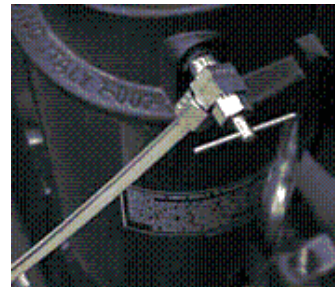


Figure 6-1. Fluid Sample Valve

Fluid samples should be taken from the sample valve while the compressor is running at normal operating temperature (see Sampling Procedures - page 47).

Section VI - Compressor Fluids

Factors Affecting Fluid Life

To protect your investment, check for the following, which can affect the long life of QuinSyn:

- 1) High operating temperatures
- 2) Contaminants:
 - a. Other fluids
 - b. Strong Oxidizers such as:
 - acids
 - sulfur
 - chlorine
 - burnt fuel -
i.e. exhaust from: forklifts,
boilers, jet aircraft
 - nitrogen oxides
 - ozone
 - welding fumes
 - plastic molding fumes
 - c. Ammonia
 - d. Solvent fumes:
 - chlorinated degreasers
 - ink solvents
 - e. Airborne dust and particles
 - f. Paper digester fumes

Locate your compressor in the coolest area possible. For every 18°F above 195°F, the operating life of any fluid is reduced to about half that at 195°F. Some mineral oils begin to form varnish at temperatures above 200°F. QuinSyn fluids are more forgiving than mineral oil at high temperatures. QuinSyn-XP is designed to operate at sustained temperatures above 200°F. The life of other QuinSyn fluids will be shortened at high temperatures.

Air intake should provide contaminant-free, cool air. A Quincy heavy-duty intake filter will reduce the risk of abrasion and increased wear. An air filter does not eliminate reactive gases. Inspect your filter monthly and replace as required.

Fluid Analysis Program - General

Quincy's fluid analysis program is offered to all customers using QuinSyn fluids in Quincy Compressor Rotary Screw Compressors. This service provides optimum drain intervals for compressors operating on QuinSyn fluids. Monitoring of the total acid number (TAN), barium level and/or viscosity throughout the life of the fluid provides maximum protection to your machine, while best utilizing the extended life features of QuinSyn.

The fluid analysis provides historical information, detailing items such as hours on the fluid, viscosity and total acid number (TAN). Should results appear unusual or suspicious, a detailed analysis can pinpoint specific contaminants. A detailed report is furnished to you, your Quincy Distributor and the Quincy Compressor factory upon completion of the fluid analysis.

Although QuinSyn fluids are rated by hours of life expectancy under normal operating conditions, it is recommended that fluid samples be taken every 500 to 2000 hours and sent to Quincy Compressor Fluid Analysis until a history of performance in a specific compressor application is established. Once the appropriate drain interval is established, the frequency of the fluid analysis can be reduced unless operating conditions change.

The depletion of antioxidants, change of viscosity, barium and acid levels all occur with time. It is extremely important to change QuinSyn before the antioxidants are completely depleted. If the fluid is left in the compressor beyond its useful life, removing all of the spent fluid is difficult. The oxidation products remaining can considerably shorten the life of the new fill of QuinSyn fluid.

NOTICE!

All Quincy Compressor extended airend warranty programs require that fluid samples be sent to Quincy Compressor Fluid Analysis a minimum of every 2,000 hours.



quincycompressor.com
217.222.7700

Fluid Sampling Procedure

Preferred sample location is the fluid filter. If unable to take sample from fluid filter, proceed as follows:

1. Shutdown and lockout compressor.
2. Relieve pressure in reservoir.
3. Remove plug from reservoir drain line.
4. Drain water from reservoir and discard in approved manner.
5. Fill sample bottle with fluid.
6. Close valve and replace plug in drain line.
7. Return compressor to service and check fluid level during operation. Service with fluid as required.

Using fluid filter sample valve, proceed as follows:

1. Open valve, drain 2-4 ounces of fluid from filter and discard in an approved manner.
2. Fill sample bottle.
3. Close valve.

After collecting sample from either of the above methods:

1. Fill out information label completely.

 **NOTICE:**

Be certain to provide all information as to possible hazards related to a given sample. If hazards exist, the information must be clearly marked on the sample bottle label.

2. Attach Sample Bottle Label to the bottle and put bottle in mailer.
3. Place Shipping Label on the outside of the mailer and send it by UPS.

FROM: _____	
Customer Fax # _____	
Model No. _____	Serial No. _____
Fluid _____	Sample Date _____
Hours on Fluid _____	Hours on Machine _____
Distributor _____	
Sample From <input type="checkbox"/> Reservoir <input type="checkbox"/> Filter	

Sample Bottle Label

FROM:	
TO:	
	
Quincy Compressor Fluid Analysis 2300 James Savage Road Midland, MI 48642-6535	

Shipping Label

Note: A fluid sample valve kit is available from Quincy Compressor. Contact the Service Department and ask for part number 143286.

128519 - Revision D - 05/07

Section VI - Compressor Fluids

Understanding the Analysis Report

Reference page 49 for a copy of a blank analysis report.

- a) REPORT DATE - The date that the fluid was analyzed.
- b) REPORT NUMBER - The assigned number to this report.
- c) CUSTOMER ADDRESS - The name and address of person that this report is being mailed to. This information is being taken from the sample bottle as it is received.
- d) CUSTOMER - The owner of the unit that sample came from.
- e) COMPRESSOR MANUFACTURER - Brand of compressor sample taken from.
- f) FLUID TYPE - This should always be one of the fluids listed in the 'Fluid Specifications' on page 44.
- g) SERIAL NUMBER - The unit serial number of the Quincy compressor the fluid sample was taken from.
- h) MODEL NUMBER - The model number of the Quincy compressor that the fluid sample was taken from.
- i) HOURS ON FLUID - These are the actual hours that the QuinSyn fluid has been in the unit since the last fluid change.
- j) HOURS ON MACHINE - This is the total hours on the compressor hourmeter.
- k) SAMPLE DATE - The date that the sample was taken from the compressor.

NOTICE!

Items c) through k) are information provided by the service person supplying the fluid for analysis. Incomplete or incorrect information will affect the report's accuracy.

- l) EVALUATION - This is a brief statement made by the technician performing the actual fluid analysis. This statement addresses the condition of the fluid and filter. This statement will also note any problems that need attention.
- m) PHYSICAL PROPERTIES RESULTS - Particle size is measured in microns. See Fluid Parameters on pages 58-59.
- n) SPECTROCHEMICAL ANALYSIS - See Fluid Parameters on pages 58-59.

Section VI - Compressor Fluids



Quincy
Compressor Fluid Analysis
2300 James Savage Road, Midland, MI 48642

UNDENIABLY THE WORLD'S FINEST COMPRESSORS

PRODUCT ANALYSIS REPORT

(a)

(b)

Customer (d)
Comp. Mfr. (e)
Fluid Type (f)
Serial Number (g)
Model Number (h)
Hrs. on Fluid (i)
Hrs. on Machine (j)
Sample Date (k)
I.D. #

(c)

Evaluation: (1)

Physical Properties* Results (m)

Water by Karl Fischer (ppm)	Viscosity 40° C (cSt)	TAN Total Acid #	Particle Count								ISO Code	Antioxidant Level
			5 um	10 um	15 um	20 um	25 um	30 um	35 um	40 um		

* Property values, not to be construed as specifications

Spectrochemical Analysis (n)

Sample Date (Fluid Hours)	Values below are in parts per million (ppm)																	
	Silver (Ag)	Alum. (Al)	Chrom (Cr)	Copp. (Cu)	Iron (Fe)	Nickel (Ni)	Lead (Pb)	Tin (Sn)	Titan (Ti)	Vanad (V)	Bari (Ba)	Calc. (Ca)	Mag. (Mg)	Mol. (Mo)	Sod. (Na)	Phos. (P)	Sili. (Si)	Zinc (Zn)

Thank you for this opportunity to provide technical assistance to your company. If you have any questions about this report please contact us at 1-800-637-8628 or fax 1-517-496-2313.

*means this parameter not tested

Accuracy of recommendations is dependant on representative fluid samples and complete correct data on both unit and fluid.

CC List

Section VI - Compressor Fluids

QuinSyn-Plus

QuinSyn-Plus is the factory fill for all rotary screw compressors and vacuum pumps manufactured at the Bay Minette facility unless a different fluid is requested.

QuinSyn-Plus is a synthetic hydrocarbon/ester, ISO 46 viscosity fluid with an 8,000 hour life under normal operating conditions (exact fluid life is determined by the fluid analysis program).

QuinSyn-Plus is totally compatible with QuinSyn. Machines currently running with QuinSyn fluid can be topped off with QuinSyn-Plus with no adverse effects.

Some advantages of QuinSyn-Plus are:

- Superior demulsability (ability to separate from water)
- Less susceptible to varnish
- Extremely low volatility
- Excellent corrosion protection
- Outstanding low temperature properties
- Exceptional thermal stability
- Excellent oxidative stability
- Better gas-fluid separation

TYPICAL PROPERTIES OF QUINSYN-PLUS	ISO 46
VISCOSITY @ 100°F ASTM D445	46.0 cSt.
VISCOSITY @ 210°F ASTM D445	7.5 cSt.
VISCOSITY INDEX ASTM D2270	127
SPECIFIC GRAVITY 60/60	0.89
FLASH POINT ASTM D92	475°F
FIRE POINT ASTM D92	540°F
POUR POINT	-58°F

Applications

QuinSyn-Plus is suited for use in rotary screw air compressors operating in harsh service conditions where the fluid is exposed to higher temperatures for extended periods of time. Fluid thermostat temperature settings can be elevated to assist in reducing water content in the fluid in high humidity applications. Please consult Quincy Service Department for any thermostat changes.

Disposal

QuinSyn-Plus is considered nonhazardous waste. Disposal of this fluid should be done in accordance with Local, State, and Federal regulations. Should condensate need to be treated, Quincy's QIOW fluid/water separators are required.

Fluid Analysis Program

QuinSyn-Plus fluid is included in Quincy's fluid analysis program.

QuinSyn-XP

QuinSyn-XP is the factory fill for high pressure units (units operating above 150 psig full flow). QuinSyn-XP is totally compatible with QuinSyn-HP 68 (the fluids can be mixed together with absolutely no problems). Aftermarket orders for QuinSyn-HP 68 will be filled with QuinSyn-XP.

QuinSyn-XP is a custom blended polyolester (POE) fluid ideally suited for rotary screw air compressors. QuinSyn-XP is an ISO 68 viscosity fluid with a 12,000 hour life at 100 & 125 psig full flow under normal operating conditions and 8,000 hours as a high pressure fluid (exact fluid life is determined by the fluid sampling program).

TYPICAL PROPERTIES OF QUINSYN-XP	ISO 68
VISCOSITY @ 100°F ASTM D445	60.0 cSt.
VISCOSITY @ 210°F ASTM D445	9.8 cSt.
VISCOSITY INDEX ASTM D2270	131
SPECIFIC GRAVITY 60/60	0.95
FLASH POINT ASTM D92	570°F
FIRE POINT ASTM D92	645°F

Applications

QuinSyn-XP is designed for applications where the fluid is exposed to elevated temperatures for extended periods of time. Fluid thermostat temperature settings can be elevated to assist in reducing water content in the fluid in high humidity applications. Consult Quincy's Service Department before making thermostat changes.

Disposal

QuinSyn-XP is considered nonhazardous waste. Disposal of this fluid should be done in accordance with Local, State, and Federal regulations. Should condensate need to be treated, Quincy's QIOW fluid/water separators are required.

Fluid Analysis Program

QuinSyn-XP will be analyzed similar to QuinSyn although the primary concern is the total acid number (TAN). Supplemental "on site" TAN kits will be applicable to this fluid as well as QuinSyn-PG.

Section VI - Compressor Fluids

QuinSyn-PG

QuinSyn-PG is a custom blended polyalkylene glycol/ester (PAG), ISO 46 viscosity fluid with an 8,000 hour life under normal operating conditions (exact fluid life is determined by the fluid sampling program).

TYPICAL PROPERTIES OF QUINSYN-PG	ISO 46
VISCOSITY @ 100°F ASTM D445	52.4 cSt.
VISCOSITY @ 210°F ASTM D445	9.4 cSt.
VISCOSITY INDEX ASTM D2270	163
SPECIFIC GRAVITY 60/60	0.98
FLASH POINT ASTM D92	485°F
FIRE POINT ASTM D92	525°F

Applications

QuinSyn-PG is best suited for applications where high humidity exists and the machine cannot be shut down to drain water from the reservoir.

Disposal

QuinSyn-PG is considered nonhazardous waste. Disposal of this fluid should be done in accordance with Local, State, and Federal regulations. Separation of this fluid from condensate will require those separators designed to handle fluid emulsions. The QIOW fluid/water separator is suitable for separation of fluid emulsions such as QuinSyn-PG. Please contact Quincy's Service Department for more details.

Fluid Analysis Program

The fluid sampling for QuinSyn-PG has been extended to 2,000 hours because of the superior quality and forgiving nature of this fluid.

Primary concerns with this fluid are the total acid number (TAN) and barium levels. QuinSyn-PG will not be condemned on water percentage nor antioxidants but will be condemned on low barium and high TAN values. The barium in the fluid acts as a corrosion inhibitor, therefore low limits have been set for this additive (see fluid parameters for limits).

QuinSyn-F

QuinSyn-F is Quincy's food grade fluid, suitable in applications where there may be incidental food contact. Compliant with FDA 21 CFR 178.3570 (Lubricants With Incidental Food Contact), QuinSyn-F is authorized by the USDA with an H-1 rating for use in federally inspected meat and poultry plants. Since the fluid is viewed as a possible indirect food additive, the limit for food contact is 10 PPM. Near white in color and low in volatility, QuinSyn-F is ideal for clean service.

Fluid Life

QuinSyn-F provides an expected life of 4,000 hours under normal operating conditions.

Disposal

QuinSyn products are considered nonhazardous under the OSHA Hazard Communication Standard 21 CFR 1910.1200. They carry no hazardous labels or warnings under that standard.

TYPICAL PROPERTIES OF QUINSYN-F

VISCOSITY @ 100°F ASTM D445	43.0 cSt.
VISCOSITY @ 210°F ASTM D445	7.5 cSt.
VISCOSITY INDEX ASTM D2270	139
FLASH POINT ASTM D92	495°F
FIRE POINT ASTM D92	560°F
POUR POINT	-76°F
SPECIFIC GRAVITY 60/60	0.83
COLOR* WATER WHITE/WHITE	

*Changes to color will occur during operation.

QuinSyn Flush

QuinSyn Flush is a specially formulated synthetic fluid capable of dissolving varnish and solubilizing sludge from lubricating systems while they are operating. QuinSyn Flush contains oxidation and rust inhibitors, and can be used as a short-term fluid (for a maximum of 500 hours). It is fully compatible with mineral oils and QuinSyn synthetic fluids, and is highly recommended for use as a flushing fluid when converting to QuinSyn-PG from QuinSyn or QuinSyn-IV.

Applications

Cleaning fluid for removal of varnish, dirt and oxidized fluid from compressor fluid systems.

Flushing fluid when changing from other fluids to QuinSyn fluids.

TYPICAL PROPERTIES OF QUINSYN FLUSH

VISCOSITY @ 100°F ASTM D445	43.3 cSt.
VISCOSITY @ 210°F ASTM D445	5.6 cSt.
VISCOSITY INDEX	65
FLASH POINT ASTM D92	444°F
FIRE POINT ASTM D92	520°F
POUR POINT	-45°F
SPECIFIC GRAVITY 60/60	0.965

Section VI - Compressor Fluids

Cleaning and Flushing with QuinSyn Flush

Normal Machines

To flush clean machines presently using:

Mineral Oils -

- (A) - Drain compressor thoroughly while hot including all the low areas.
- Shut down and lockout the machine.
 - Detach fluid lines and drain.
 - Inspect the machine;
 - if clean, change filters and separator elements and proceed as follows:
- Fill with QuinSyn Flush and run machine until it reaches normal operating temperature.
 - Drain the QuinSyn Flush and discard in accordance with all local, state and federal disposal regulations.
 - Change the separator element and all filters.
 - Refill with a fresh charge of the QuinSyn fluid selected for your machine.
 - Send a fluid sample to Quincy Compressor Fluid Analysis at 200 hours.

Polyalklene glycols (PAG) or Silicone -

- Drain compressor thoroughly as in (A).
- Fill machine with QuinSyn Flush and run for 500 hours.
- Send fluid sample to Quincy Compressor Fluid Analysis to determine if further flushes are needed.
- Continue compressor operation until results of fluid analysis are reported.
- Once the analysis indicates the machine is clean, drain the flush, change the separator element and all filters, and fill with the QuinSyn fluid selected for your machine.
- Send a fluid sample to Quincy Compressor Fluid Analysis at 200 hours.

Varnished Machines

Always clean slightly varnished machines using mineral oils or PAO fluids with QuinSyn Flush using the following procedure:

- Drain compressor thoroughly as in (A).
- Fill with QuinSyn Flush and run for 300 hours.
- Send fluid sample to Quincy Compressor Fluid Analysis to determine if further flushes are needed.
- Continue compressor operation until results of fluid analysis are reported.
- Drain or continue operation as advised by fluid analysis.

Always clean medium to heavily varnished machines using mineral oils or PAO fluids with QuinSyn Flush using the following procedure:

- Drain compressor thoroughly as in (A).
- Fill with QuinSyn Flush and run for 300 hours.
- Send fluid sample to Quincy Compressor Fluid Analysis to determine if further flushes are needed.

- Run the flush for an additional 300 hours.
- Drain thoroughly as in (A) and inspect the compressor.
- If clean, flush with another half charge of QuinSyn Flush and run for 30 minutes.
- Drain completely.
- Change filters and separator element and all filters and fill with a fresh charge of the QuinSyn fluid selected for your machine.
 - Send fluid sample to Quincy Compressor Fluid Analysis at 200 hours.

NOTICE!

Extremely varnished machines should not be put back into service until mechanically or chemically cleaned. After proper cleaning, fill with a fresh charge of the QuinSyn fluid selected for your machine. Send fluid sample to Quincy Compressor Fluid Analysis at 200 hours.

Section VI - Compressor Fluids

Converting to QuinSyn-Plus

Normal Machines

To convert a clean machine presently using any QuinSyn fluid (except QuinSyn-PG) to QuinSyn-Plus - No flush required:

- Drain compressor thoroughly while hot, including all the low areas, fluid lines and the fluid cooler.
- Shut down and lockout the machine.
- Change the separator and all filters.
- Refill the reservoir and system with a full charge of QuinSyn-Plus.
- Send a fluid sample to Quincy Compressor Fluid Analysis at 200 hours.

To convert a clean machine presently using QuinSyn-PG or mineral oil to QuinSyn-Plus, flush according to flushing instructions on page 54.

Varnished Machines

For slightly to extremely varnished machines using mineral oils or PAO fluids, flush the compressor with QuinSyn Flush following the procedures outlined on page 55.

Converting to QuinSyn-XP

Normal Machines

To convert a clean machine presently using any QuinSyn fluid to QuinSyn-XP- No flush required:

- Drain compressor thoroughly while hot, including all the low areas, fluid lines and the fluid cooler.
- Shut down and lockout the machine.
- Change the separator and all filters.
- Refill the reservoir and system with a full charge of QuinSyn-Plus.
- Send a fluid sample to Quincy Compressor Fluid Analysis at 200 hours.

To convert a clean machine presently using mineral oil to QuinSyn-Plus, flush according to flushing instructions on page 54.

Varnished Machines

For slightly to extremely varnished machines using mineral oils or PAO fluids, flush the compressor with QuinSyn Flush following the procedures outlined on page 55.

Converting to QuinSyn-PG

Normal Machines

To convert a clean machine presently using QuinSyn or QuinSyn-IV to QuinSyn-PG, flush according to flushing instructions on page 54.

NOTICE!

If all the previous fluid is not removed from the compressor, excessive foam may be visible in the fluid level sightglass. If this occurs, repeat the flushing procedure.

Varnished Machines

To convert a varnished machine presently using QuinSyn or QuinSyn-IV to QuinSyn-PG, flush according to flushing instructions on page 55. After the first flush is completed, proceed as follows:

- If advised to refill with another charge of QuinSyn Flush, run compressor until it reaches normal operating temperature.
- Shut down and lockout the machine.
- Drain the original charge of the QuinSyn Flush and discard in accordance with all local, state and federal disposal regulations.

- Refill with a fresh charge of QuinSyn Flush and change the fluid filter.
- Run compressor for 300 hours.
- Take a fluid sample and send to Quincy Compressor Fluid Analysis to determine if further flushing is needed.
- Proceed as instructed by the fluid analysis report.

NOTICE!

More than one flush may be required to remove varnish buildup and reduce the TAN to an acceptable level. It may be necessary to change the fluid filter more frequently while the machine is being cleaned.

- If advised to drain the QuinSyn Flush, run compressor until it reaches normal operating temperature.
- Shut down and lockout the machine.
- Drain the QuinSyn Flush and discard in accordance with all local, state and federal disposal regulations.
- Change the separator element and fluid filter and refill with a full charge of the QuinSyn-PG.

Converting to QuinSyn-F

NOTICE!

Contact the Quincy Service Department to convert to QuinSyn-F from any QuinSyn fluid.

Section VI - Compressor Fluids

Fluid Parameters

QuinSyn Plus, QuinSyn XP & QuinSyn PG

PROPERTY	UNITS	TEST METHOD	FLUID TYPE	NEW FLUID	MARGINAL	UNACCEPTABLE
VISCOSITY 40°C	cSt	ASTM D-445	QUINSYN PLUS	42-51	38, 56	<38, >56 (1)
			QUINSYN XP	58-75	50, 85	<50, >85 (1)
			QUINSYN PG	45-55	41,61	<41, >61 (1)
ACID No. (TAN)	MG KOH/GM	ASTM D-947	QUINSYN PLUS	<0.2	1.7-1.9	>2.0 (1)
			QUINSYN XP	<0.2	3-4	>4 (1)
			QUINSYN PG	<0.2	0.7-0.9	>1 (1)
ADDITIVE METALS						
BARIUM	PPM	PLASMA EMISSION	QUINSYN PLUS	0	5-20	>20
			QUINSYN XP	0	5-20	>20
			QUINSYN PG	375-550	150	<10 (1)
CALCIUM	PPM	PLASMA EMISSION	ALL	0	5-20	>20
MAGNESIUM	PPM	PLASMA EMISSION	ALL	0	5-20	>20
MOLYBDENUM	PPM	PLASMA EMISSION	ALL	0	5-20	>20
SODIUM	PPM	PLASMA EMISSION	QUINSYN PLUS	0	5-20	>20
			QUINSYN XP	0	40-50	>100
			QUINSYN PG	0	40-50	>100
PHOSPHORUS	PPM	PLASMA EMISSION	QUINSYN PLUS	0	5-20	>20
			QUINSYN XP	<50	5-20	0
			QUINSYN PG	0	5-20	>20
ZINC	PPM	PLASMA EMISSION	ALL	0	100-200	>200
WEAR METALS						
SILVER	PPM	PLASMA EMISSION	ALL	0	5-10	>10
ALUMINUM	PPM	PLASMA EMISSION	ALL	0	5-10	>10
CHROMIUM	PPM	PLASMA EMISSION	ALL	0	5-10	>10
COPPER	PPM	PLASMA EMISSION	ALL	0	5-10	>10
IRON	PPM	PLASMA EMISSION	ALL	0	5-10	>10
NICKEL	PPM	PLASMA EMISSION	ALL	0	5-10	>10
LEAD	PPM	PLASMA EMISSION	ALL	0	5-10	>10
TIN	PPM	PLASMA EMISSION	ALL	0	5-10	>10
TITANIUM	PPM	PLASMA EMISSION	ALL	0	5-10	>10
VANADIUM	PPM	PLASMA EMISSION	ALL	0	5-10	>10
OTHER						
SILICON	PPM	PLASMA EMISSION	ALL	0	10-15	>15
WATER	PPM	KARL FISHER	QUINSYN PLUS	<800	NOT REPORTED	
			QUINSYN XP	<800	NOT REPORTED	
			QUINSYN PG	<2000	NOT REPORTED	
ANTIOXIDANT	%	HPCL	ALL	95% MIN.	NOT REPORTED	

(1) The fluid will be condemned based on these parameters.

QuinSyn & QuinSyn F

PROPERTY	UNITS	TEST METHOD	FLUID TYPE	NEW FLUID	MARGINAL	UNACCEPTABLE
VISCOSITY 40°C	cSt	ASTM D-445	QUINSYN	40-48	38, 52	<38, >52 (1)
			QUINSYN F	41-51	39, 56	<39, >56 (1)
ACID No. (TAN)	MG KOH/GM	ASTM D-947	ALL	0.2	0.8-0.9	>1 (1)
ADDITIVE METALS						
BARIUM	PPM	PLASMA EMISSION	ALL	0	5-20	>20
CALCIUM	PPM	PLASMA EMISSION	ALL	0	5-20	>20
MAGNESIUM	PPM	PLASMA EMISSION	ALL	0	5-20	>20
MOLYBDENUM	PPM	PLASMA EMISSION	ALL	0	5-20	>20
SODIUM	PPM	PLASMA EMISSION	ALL	0	5-20	>20
PHOSPHORUS	PPM	PLASMA EMISSION	ALL	0	5-20	>20
ZINC	PPM	PLASMA EMISSION	ALL	0	100-200	>200
WEAR METALS						
SILVER	PPM	PLASMA EMISSION	ALL	0	5-10	>10
ALUMINUM	PPM	PLASMA EMISSION	ALL	0	5-10	>10
CHROMIUM	PPM	PLASMA EMISSION	ALL	0	5-10	>10
COPPER	PPM	PLASMA EMISSION	ALL	0	5-10	>10
IRON	PPM	PLASMA EMISSION	ALL	0	5-10	>10
NICKEL	PPM	PLASMA EMISSION	ALL	0	5-10	>10
LEAD	PPM	PLASMA EMISSION	ALL	0	5-10	>10
TIN	PPM	PLASMA EMISSION	ALL	0	5-10	>10
TITANIUM	PPM	PLASMA EMISSION	ALL	0	5-10	>10
VANADIUM	PPM	PLASMA EMISSION	ALL	0	5-10	>10
OTHER						
SILICON	PPM	PLASMA EMISSION	ALL	0	10-15	>15
WATER	PPM	KARL FISHER	ALL	<100	200	>200
PARTICLE COUNT	MICRONS	HIAC ROYCO	ALL	ISO CODE X/20		
ANTIOXIDANT	%	LIQUID CHROMATOGRAPHY	ALL	95	NOT REPORTED	

(1) The fluid will be condemned based on these parameters.

Section VII - Troubleshooting

Probable Causes:

Corrective Action:

Failure to Start:

POWER NOT TURNED "ON"

TURN THE POWER "ON" BY CLOSING THE MAIN DISCONNECT SWITCH OR CIRCUIT BREAKER.

BLOWN CONTROL CIRCUIT FUSE
SAFETY CIRCUIT SHUTDOWN RESULTING FROM HIGH DISCHARGE AIR TEMPERATURE

REPLACE FUSE. FIND AND CORRECT CAUSE. CORRECT THE SITUATION IN ACCORDANCE WITH THE INSTRUCTION IN THE "HIGH DISCHARGE AIR TEMPERATURE" SECTION OF THIS TROUBLESHOOTING GUIDE. RESTART THE COMPRESSOR.

LOW VOLTAGE

ASK THE POWER COMPANY TO MAKE A VOLTAGE CHECK AT YOUR ENTRANCE METER, THEN COMPARE THAT READING TO A READING TAKEN AT THE MOTOR TERMINALS. USE THESE TWO READINGS AS A BASIS FOR LOCATING THE SOURCE OF LOW VOLTAGE.

POWER FAILURE

CHECK POWER SUPPLY TO THE UNIT.

LOOSE WIRE CONNECTIONS

CHECK ALL WIRING TERMINALS FOR CONTACT AND TIGHTNESS.

FAULTY HIGH AIR TEMPERATURE SWITCH

CHECK H A T SWITCH. CONTACT A QUALIFIED SERVICE TECHNICIAN FOR REPAIRS.

FAULTY POWER SUPPLY

CHECK OUTPUT VOLTAGE ON POWER SUPPLY (SHOULD BE 24 VDC).

Probable Causes:**Corrective Action:**

Unscheduled Shutdown:

HIGH DISCHARGE AIR TEMPERATURE

CORRECT THE SITUATION IN ACCORDANCE WITH THE INSTRUCTION IN THE "HIGH DISCHARGE AIR TEMPERATURE" SECTION OF THIS TROUBLESHOOTING GUIDE. RESTART THE COMPRESSOR.

POWER FAILURE

CHECK POWER SUPPLY AND TRANSFORMER FUSES.

FAULTY HAT SENSORS

CONTACT A QUALIFIED SERVICE TECHNICIAN FOR REPAIRS.

LOOSE WIRE CONNECTIONS

CHECK ALL WIRING TERMINALS FOR CONTACT AND TIGHTNESS.

Thermal Overload Relays Tripping:

EXCESSIVE DISCHARGE PRESSURE

LOWER FULL LOAD PRESSURE SETTING AT CONTROL PANEL.

LOW VOLTAGE

CHECK VOLTAGE AND AMPERAGE WHILE OPERATING AT FULL LOAD PRESSURE.

LOOSE MOTOR OR STARTER WIRING

CHECK ALL CONNECTIONS FOR TIGHTNESS.

FAULTY MOTOR

CHECK MOTOR STARTER WIRING BEFORE REMOVING MOTOR. REMOVE MOTOR AND HAVE TESTED AT MOTOR MANUFACTURER REPAIR CENTER.

Section VII - Troubleshooting

Probable Causes:

Corrective Action:

Low Air Delivery:

PLUGGED AIR INTAKE FILTER ELEMENT

CLEAN AIR FILTER ELEMENT OR REPLACE WITH NEW ELEMENT.

EXCESSIVE LEAKS IN THE SERVICE LINES

CHECK SERVICE LINES FOR LEAKS WITH SOAP SUDS. REPAIR AS NECESSARY.

INLET VALVE NOT FULLY OPEN

CHECK FOR BUILD UP OR GUMMING OF SHAFT.

RESTRICTED FLUID FLOW

CHECK FLUID FILTER FOR PLUGGING.

Low Receiver Pressure:

EXCESSIVE AIR DEMAND

REEVALUATE AIR DEMAND. INSTALL ADDITIONAL COMPRESSORS AS NEEDED.

EXCESSIVE LEAKS IN THE SERVICE LINES

CHECK SERVICE LINES FOR LEAKS WITH SOAP SUDS. REPAIR AS NECESSARY.

INLET VALVE NOT FULLY OPEN

CORRECT IN ACCORDANCE WITH THE INSTRUCTIONS IN "INLET VALVE NOT OPENING OR CLOSING IN RELATION TO AIR DEMAND" SECTION OF TROUBLESHOOTING GUIDE.

PLUGGED AIR INTAKE FILTER

REPLACE AIR FILTER ELEMENT.

FAULTY RECEIVER PRESSURE GAUGE

CHECK AND REPLACE AS NECESSARY.

High Receiver Pressure:

INLET VALVE NOT CLOSING AT LOWER AIR DEMAND

CORRECT IN ACCORDANCE WITH INSTRUCTION ON "INLET VALVE NOT OPENING OR CLOSING IN RELATION TO AIR DEMAND" SECTION OF THIS TROUBLESHOOTING GUIDE.

BLOWDOWN VALVE NOT RELIEVING RECEIVER PRESSURE

CHECK CONTROL SOLENOID AND BLOWDOWN VALVE.

Probable Causes:

Corrective Action:

High Discharge Air Temperature and/or High Fluid Injection Temperature:

NOT ENOUGH COOLING WATER FLOWING THROUGH COOLER (WATER-COOLED MODELS ONLY)

CLEAN COOLER. CHECK WATER SYSTEM FOR POSSIBLE RESTRICTIONS, INCLUDING WATER TEMPERATURE REGULATING VALVE. CLEAN OR ADJUST, IF NECESSARY.

INADEQUATE CIRCULATION OF COOLING AIR AT THE COOLER (AIR-COOLED MODELS ONLY)

CHECK LOCATION OF COOLER AND ASSURE NO RESTRICTION TO FREE CIRCULATION OF COOLING AIR. CHECK COOLER FIN AND CLEAN AS NECESSARY.

LOW FLUID LEVEL IN RESERVOIR

ADD FLUID TO RECOMMENDED LEVEL. CHECK FLUID SYSTEM FOR LEAKS.

CABINET PANELS REMOVED

REPLACE ALL PANELS, ENSURE ALL SEALING SURFACES AND MATERIALS ARE SATISFACTORY.

COOLER PLUGGED

CLEAN COOLER, FIND AND CORRECT CAUSE OF CONTAMINATION.

FLUID FILTER PLUGGED

REPLACE FLUID FILTER ELEMENT(S).

EXCESSIVE AMBIENT TEMPERATURES

MAXIMUM AMBIENT FOR PROPER OPERATION IS LISTED IN DATA SHEET. VENTILATE ROOM OR RELOCATE COMPRESSOR.

INCORRECT FAN ROTATION

CORRECT ROTATION IS WITH THE FAN PUSHING THE AIR THROUGH THE COOLER. REVERSE MOTOR STARTER LEADS L_1 AND L_2 .

IMPROPER FLUID

USE RECOMMENDED FLUIDS ONLY. REFER TO "COMPRESSOR FLUIDS" SECTION OF THIS MANUAL.

CLOGGED AIR FILTER

CLEAN OR REPLACE AS NECESSARY.

FAULTY THERMAL VALVE

REPAIR OR REPLACE AS NECESSARY.

FAULTY GAUGES

CHECK AND REPLACE AS NECESSARY.

AIREND FAILURE

CONTACT AN AUTHORIZED QUINCY DISTRIBUTOR.

Section VII - Troubleshooting

Probable Causes:

Corrective Action:

Frequent Air/Fluid Separator Clogging:

FAULTY AIR FILTER OR INADEQUATE FILTER FOR THE ENVIRONMENT

IF FAULTY AIR FILTER ELEMENTS, REPLACE THEM. IF AIR FILTER IS INADEQUATE FOR THE ENVIRONMENT, RELOCATE THE INTAKE AIR TO A CLEAN SOURCE.

FAULTY FLUID FILTER

REPLACE FLUID FILTER ELEMENT.

FLUID BREAKDOWN

CORRECT IN ACCORDANCE WITH THE INSTRUCTION IN "FLUID BREAKDOWN" SECTION OF THE TROUBLESHOOTING GUIDE.

INCORRECT FLUID SEPARATOR ELEMENT

USE GENUINE QUINCY REPLACEMENT ELEMENTS ONLY.

EXTREME OPERATING CONDITIONS SUCH AS HIGH COMPRESSOR DISCHARGE TEMPERATURES, HIGH AMBIENT TEMPERATURE WITH HIGH HUMIDITY AND HIGH RESERVOIR PRESSURE

OPERATE COMPRESSOR AT RECOMMENDED RESERVOIR PRESSURE AND DISCHARGE AIR TEMPERATURE.

MIXING DIFFERENT GRADES OR TYPES OF FLUIDS

DO NOT MIX DIFFERENT GRADES OR TYPES OF FLUID. DO NOT MIX FLUIDS FROM DIFFERENT MANUFACTURERS.

INCORRECT FLUID

FOLLOW FLUID SPECIFICATIONS AS DESCRIBED IN "COMPRESSOR FLUIDS" SECTION OF THIS MANUAL.

CONTAMINATED FLUID

CHANGE FLUID. SERVICE AIR FILTER AND FLUID FILTER IN ACCORDANCE WITH THE RECOMMENDED MAINTENANCE SCHEDULE.

Probable Causes:**Corrective Action:**

Fluid Discharge Out Blowdown Valve:

TOO HIGH FLUID LEVEL IN RESERVOIR

ADJUST FLUID LEVEL TO RECOMMENDED FLUID LEVEL BY DRAINING THE RESERVOIR. USE FLUID LEVEL GAUGE AS A GUIDE.

AIR/FLUID RESERVOIR BLOWS DOWN TOO FAST
INLET VALVE NOT CLOSING COMPLETELY

CHECK FOR PROPER BLOWDOWN VALVE SIZE. CORRECT IN ACCORDANCE WITH INSTRUCTIONS IN "INLET VALVE NOT OPENING OR CLOSING IN RELATION TO AIR DEMAND" SECTION OF THIS TROUBLESHOOTING GUIDE.

Frequent Fluid Filter Clogging:

FAULTY INDICATOR

REPLACE INDICATOR ASSEMBLY.

INCORRECT FLUID FILTER

USE GENUINE QUINCY REPLACEMENT FILTERS ONLY.

FAULTY, INCORRECT OR INADEQUATE AIR FILTER

REPLACE AIR FILTER ELEMENT.

FLUID BREAKDOWN

SEE FLUID BREAKDOWN SECTION OF THIS TROUBLESHOOTING GUIDE.

SYSTEM CONTAMINATION

CHECK AND CLEAN SYSTEM OF ALL DIRT, CORROSION AND VARNISH.

Excessive Water Content In Fluid:

WATER DRAIN INTERVALS

DRAIN WATER AS NEEDED TO REDUCE WATER CONTENT IN FLUID BELOW 200 PPM.

DISCHARGE TEMPERATURE TOO LOW

CHECK OPERATION OF THERMOSTATIC VALVE OR WATER REGULATING VALVE. IF CONDITION CONTINUES, CONSULT QUINCY SERVICE DEPARTMENT.

Section VII - Troubleshooting

Probable Causes:

Corrective Action:

Excessive Fluid Consumption:

TOO HIGH FLUID LEVEL IN THE RECEIVER

ADJUST FLUID LEVEL TO RECOMMENDED FLUID LEVEL BY DRAINING THE RESERVOIR. USE FLUID LEVEL GAUGE AS A GUIDE.

PLUGGED SCAVENGER LINE

CLEAN SCAVENGER LINE ORIFICE AND TUBE.

HIGH DISCHARGE TEMPERATURE

CORRECT IN ACCORDANCE WITH THE INSTRUCTIONS IN "HIGH DISCHARGE AIR TEMPERATURE" SECTION OF THIS TROUBLESHOOTING GUIDE.

LOW RESERVOIR PRESSURE WITH FULLY OPEN INLET VALVE

RESERVOIR PRESSURE SHOULD NOT FALL BELOW 50 PSIG WHEN RUNNING LOADED. CHECK SYSTEM CFM REQUIREMENT AND MINIMUM PRESSURE CHECK VALVE.

FAULTY OR DAMAGED SEPARATOR

CHANGE AIR/FLUID SEPARATOR.

LEAK IN FLUID LINES

CHECK FOR LEAKS AND CORRECT.

SEAL FAILURE, LEAKS

REPLACE SEAL ASSEMBLY AND O-RINGS.

INCORRECT FLUID

USE RECOMMENDED FLUIDS ONLY. SEE COMPRESSOR FLUID SECTION.

Frequent Air Cleaner Clogging:

COMPRESSOR OPERATING IN HIGHLY CONTAMINATED ATMOSPHERE

USE REMOTE AIR INTAKE MOUNTING.

AIR CLEANER NOT ADEQUATE FOR CONDITIONS

USE SPECIALIZED AIR FILTER. CONTACT AN AUTHORIZED QUINCY DISTRIBUTOR.

Inlet Valve Not Opening Or Closing In Relation To Air Demand:

JAMMED AIR INLET VALVE ASSEMBLY

CHECK AIR INLET VALVE BUSHING AND SHAFT. CHECK PISTON AND CYLINDER BORE. REPAIR OR REPLACE AS NEEDED.

BROKEN SPRING IN AIR INLET VALVE

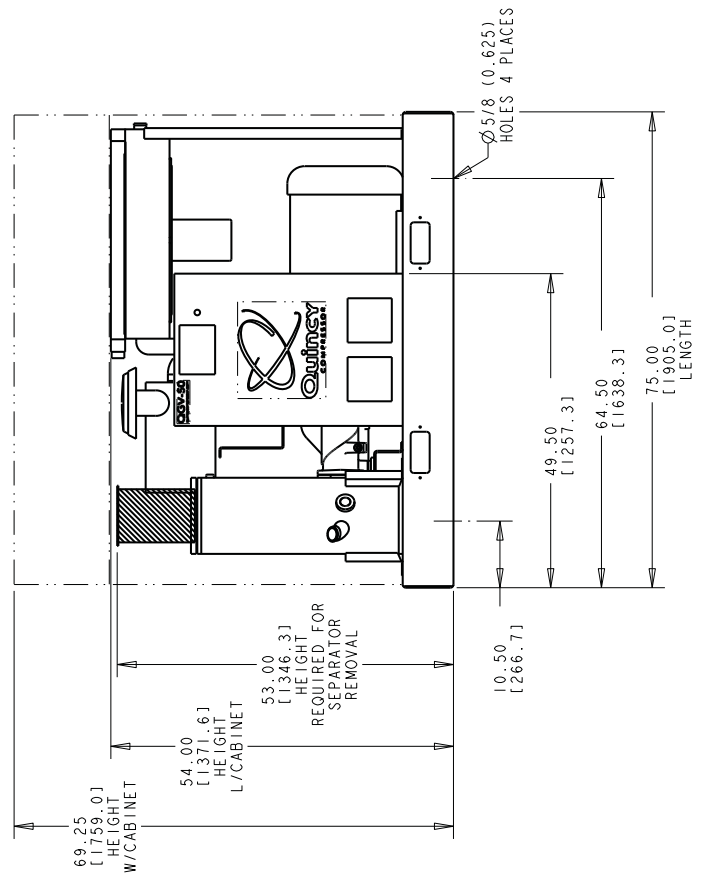
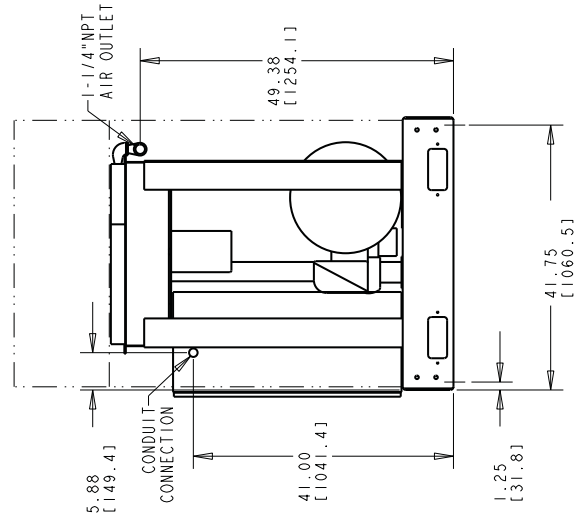
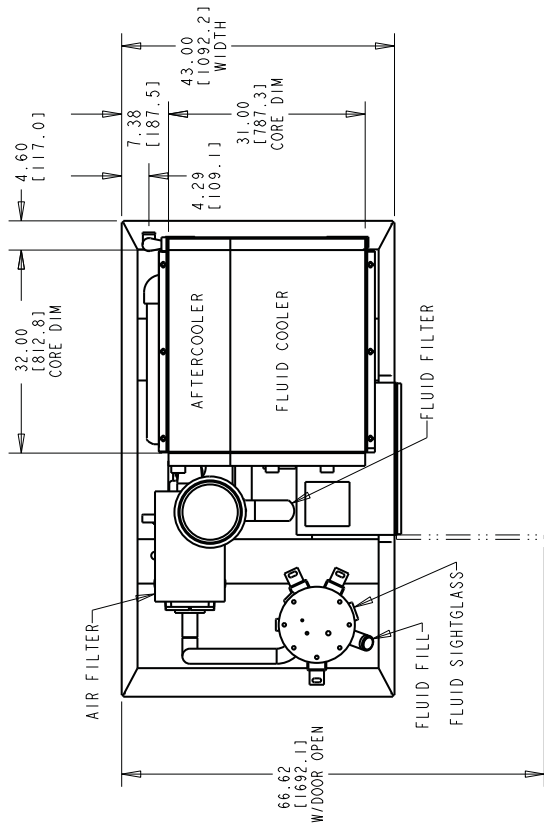
REPLACE SPRING.

Probable Causes:	Corrective Action:
Compressor Does Not Unload When There Is No Air Demand:	
FAULTY BLOW DOWN VALVE	REPAIR OR REPLACE AS NECESSARY.
LEAKS IN SERVICE LINES	CHECK LINES BEFORE MPC VALVE.
Compressor Does Not Revert To Load When Service Line Pressure Drops To Reset Pressure:	
LOOSE WIRING CONNECTION	CHECK AND TIGHTEN WIRING TERMINALS.
JAMMED AIR INLET VALVE ASSEMBLY	CHECK AND REPAIR AIR INLET VALVE.
Compressor Will Not Time-out Or Shut Down When Unloaded (Auto/ Dual Only):	
LEAKS IN SERVICE LINES	CHECK PLANT AIR DISTRIBUTION SYSTEM FOR LEAKS.
FAULTY AIR PRESSURE SENSORS	REPLACE AS NECESSARY.
Excessive Water in Plant Air Distribution System:	
CLOGGED MOISTURE SEPARATOR/TRAP	CLEAN OR REPLACE AS REQUIRED.
INSTALLATION/APPLICATION	CHECK OTHER COMPRESSORS ON SAME SYSTEM.
FAULTY COOLER/LEAKS	REPLACE COOLER.
Pressure Relief Valve Exhausting:	
PLUGGED SEPARATOR	REPLACE WITH NEW AIR/FLUID SEPARATOR.
FAULTY RECEIVER PRESSURE GAUGE	CHECK GAUGE FOR ACCURACY AND REPLACE IF NECESSARY. ADJUST CONTROL SETTINGS.
FAULTY PRESSURE RELIEF VALVE	CHECK PRESSURE RELIEF VALVE FOR CORRECT PRESSURE SETTING. IF VALVE IS STILL LEAKING, REPLACE IT.

Appendix A - Dimensional Drawings

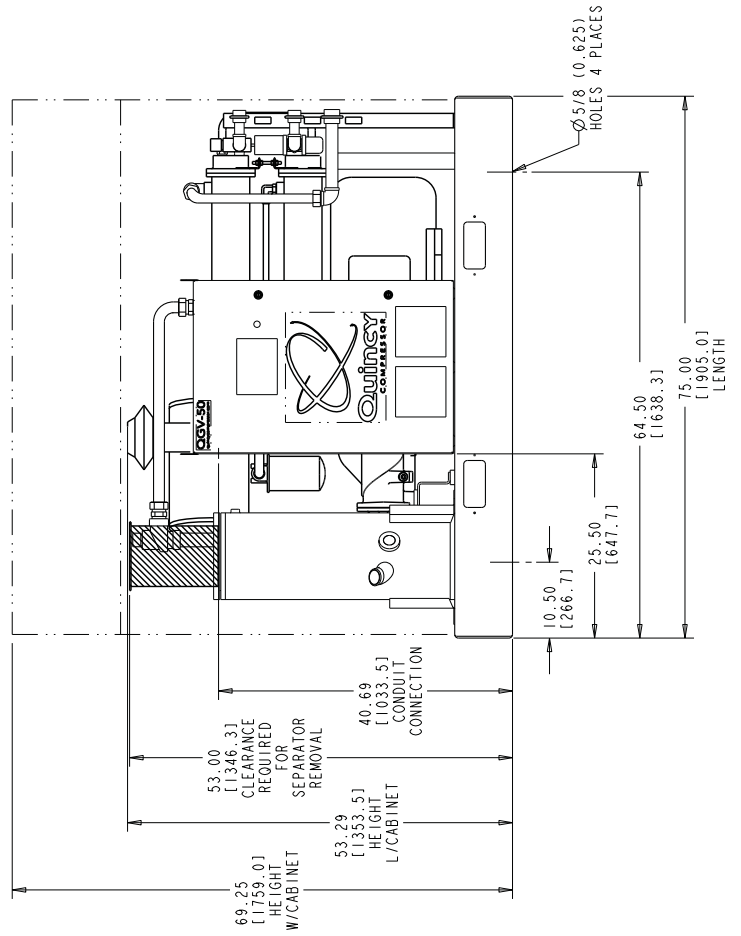
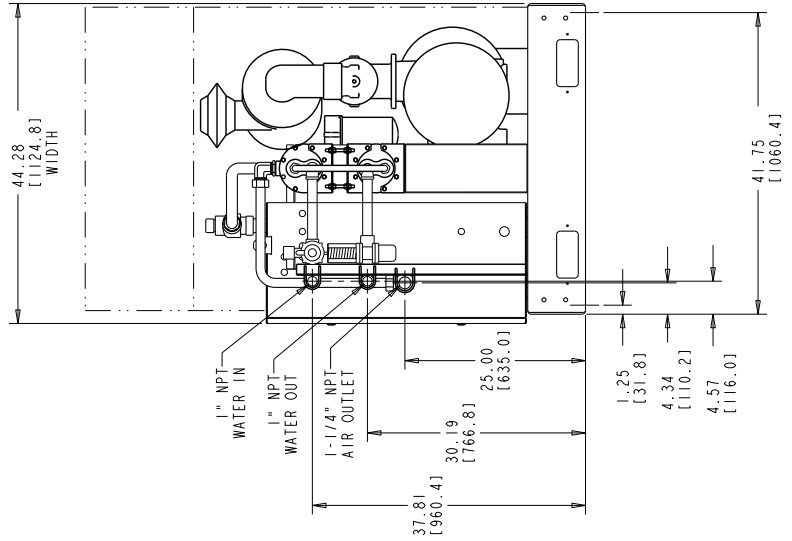
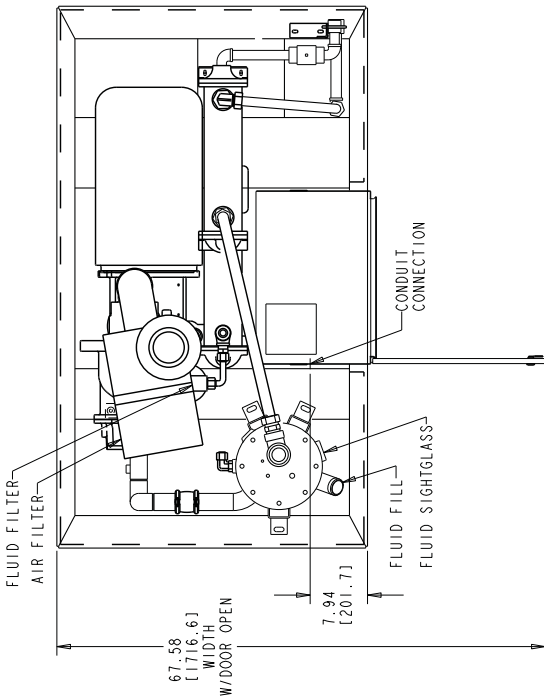
QGV-50 (air-cooled)

NOTES-UNLESS OTHERWISE SPECIFIED:
 1) ALLOW 4 IN. OF CLEARANCE AROUND UNIT FOR ACCESS AND FREE AIR CIRCULATION.
 2) ALL TOP DIMENSIONS ARE IN INCHES.
 3) DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.
 4) ALL DIMENSIONS ± 0.25 EXCLUDING PIPING WHICH IS SUBJECT TO COMPONENT TOLERANCE AND THREAD ENGAGEMENT.



QGV-50 (water-cooled)

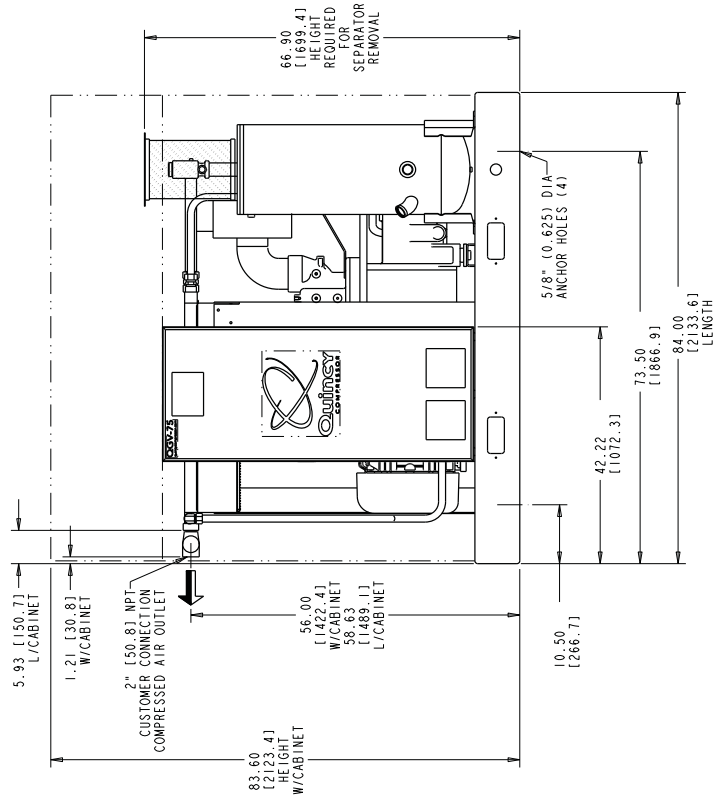
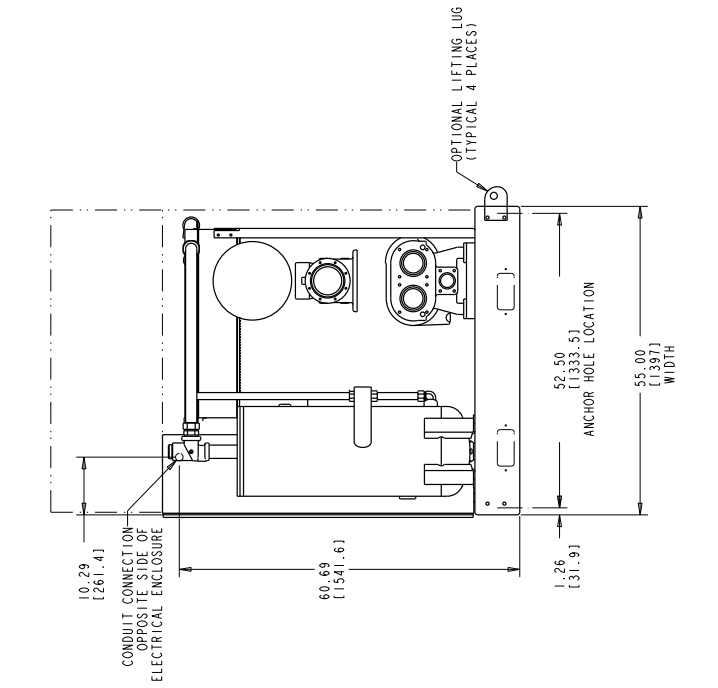
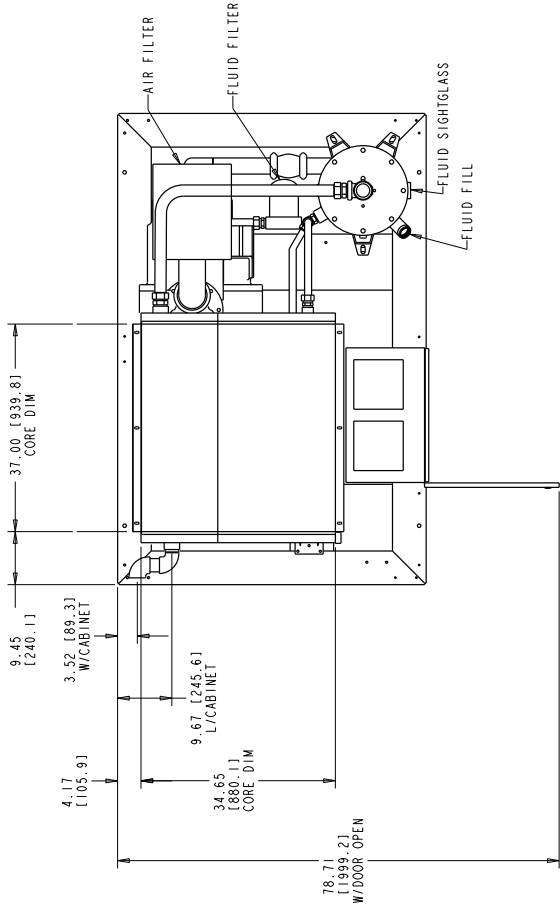
- NOTES-UNLESS OTHERWISE SPECIFIED:
- 1) ALLOW 4 FT. OF CLEARANCE AROUND UNIT FOR ACCESS AND FREE AIR CIRCULATION.
 - 2) ALL TOP DIMENSIONS ARE IN INCHES.
 - 3) DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.
 - 4) ALL DIMENSIONS ± 0.25 EXCLUDING PIPING WHICH IS SUBJECT TO COMPONENT TOLERANCE AND THREAD ENGAGEMENT.



Appendix A - Dimensional Drawings

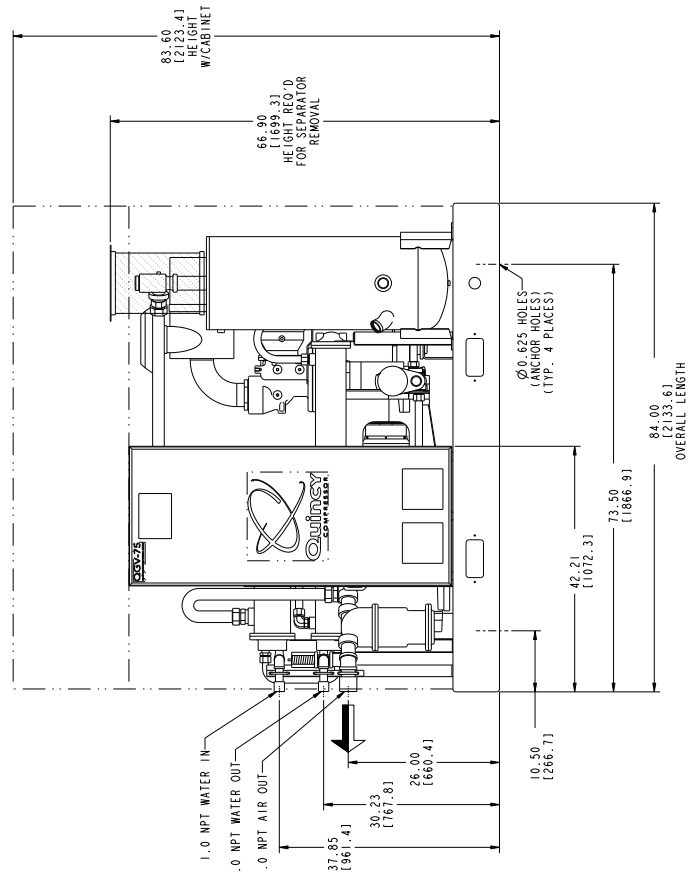
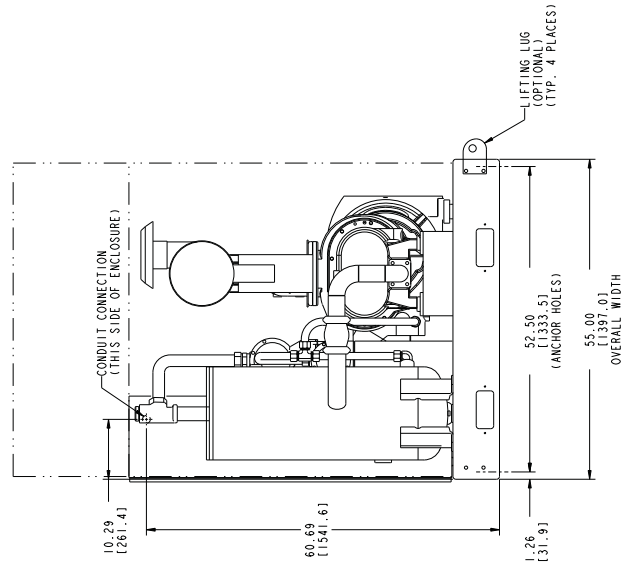
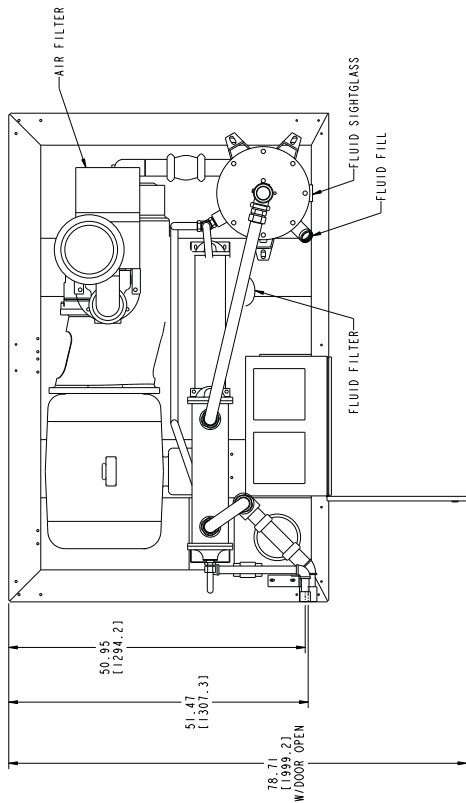
QGV-75/100 (air-cooled)

NOTES-UNLESS OTHERWISE SPECIFIED:
 1) ALLOW 1" CLEARANCE AROUND UNIT FOR ACCESS AND FLOW OF AIR THROUGHOUT
 2) TOP DIMENSIONS ARE IN INCHES, DIMENSIONS IN PARENTHESIS ARE IN MILLIMETERS
 3) ALL DIMENSIONS ± 0.25 EXCLUDING PIPING WHICH IS SUBJECT TO COMPONENT TOLERANCE AND THREAD ENGAGEMENT.



QGV-75/100 (water-cooled)

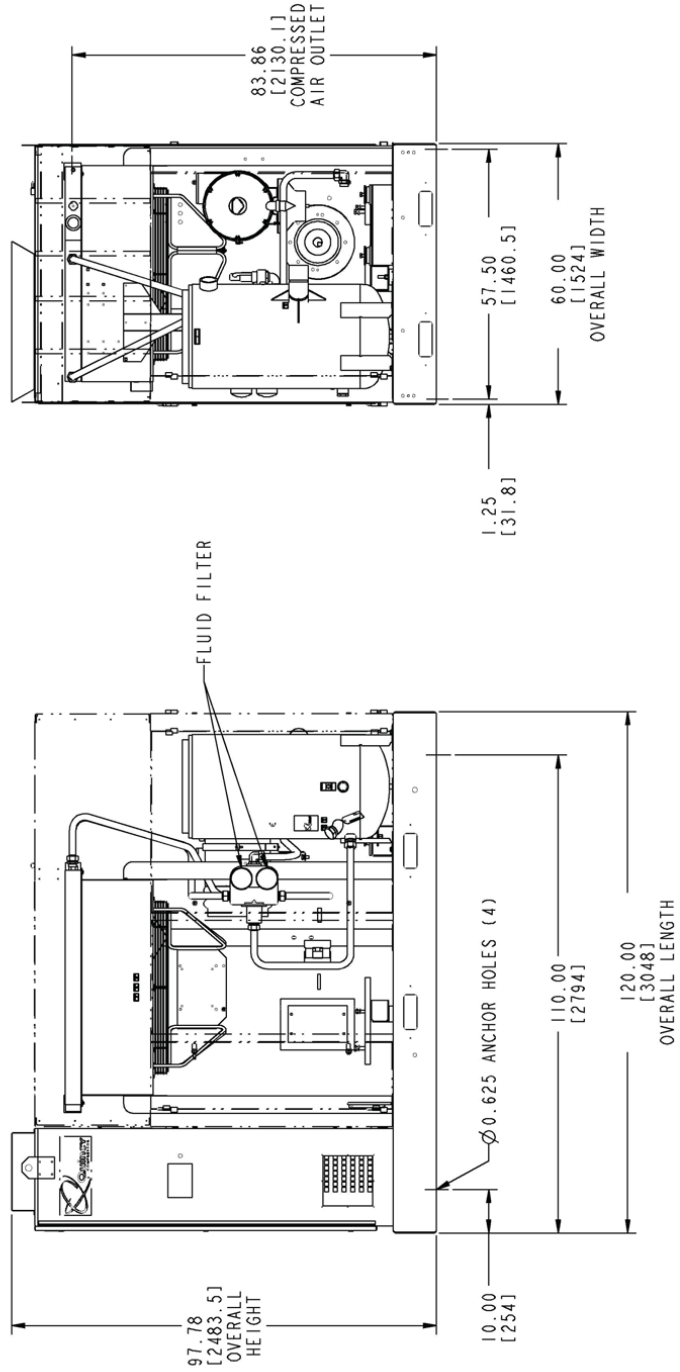
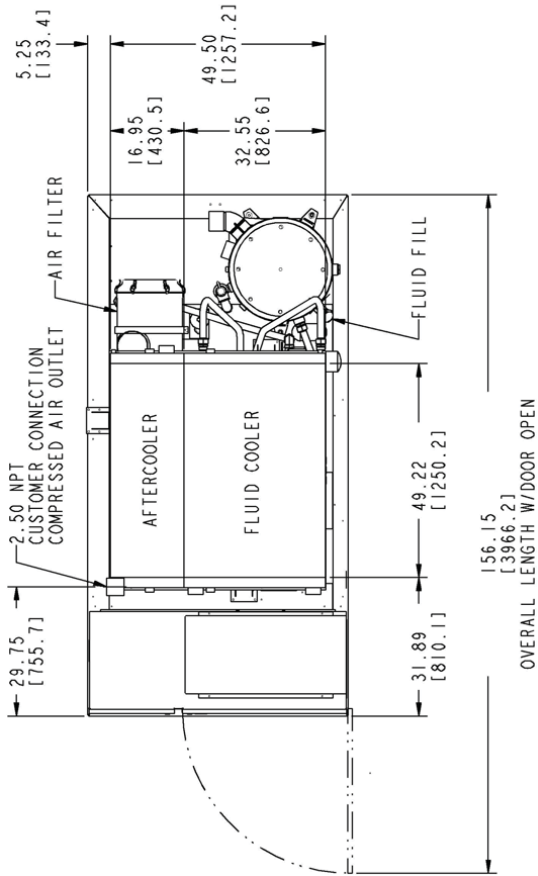
NOTES - UNLESS OTHERWISE SPECIFIED:
 1) DIMENSIONS ARE IN INCHES - DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.
 2) TOP DIMENSIONS ARE IN INCHES - DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.
 3) ALL DIMENSIONS ± 0.25 EXCLUDING PIPING WHICH IS SUBJECT TO COMPONENT TOLERANCE AND THREAD ENGAGEMENT.



Appendix A - Dimensional Drawings

QGV-150/200 (air-cooled)

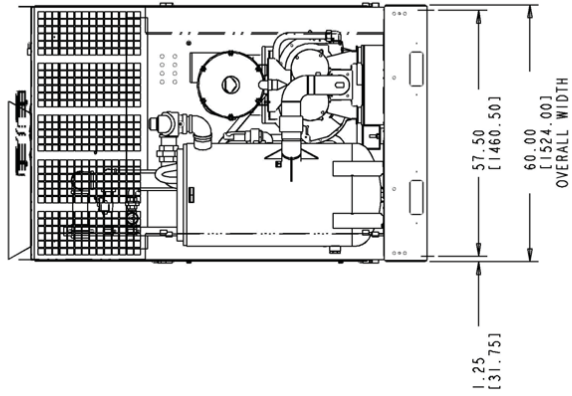
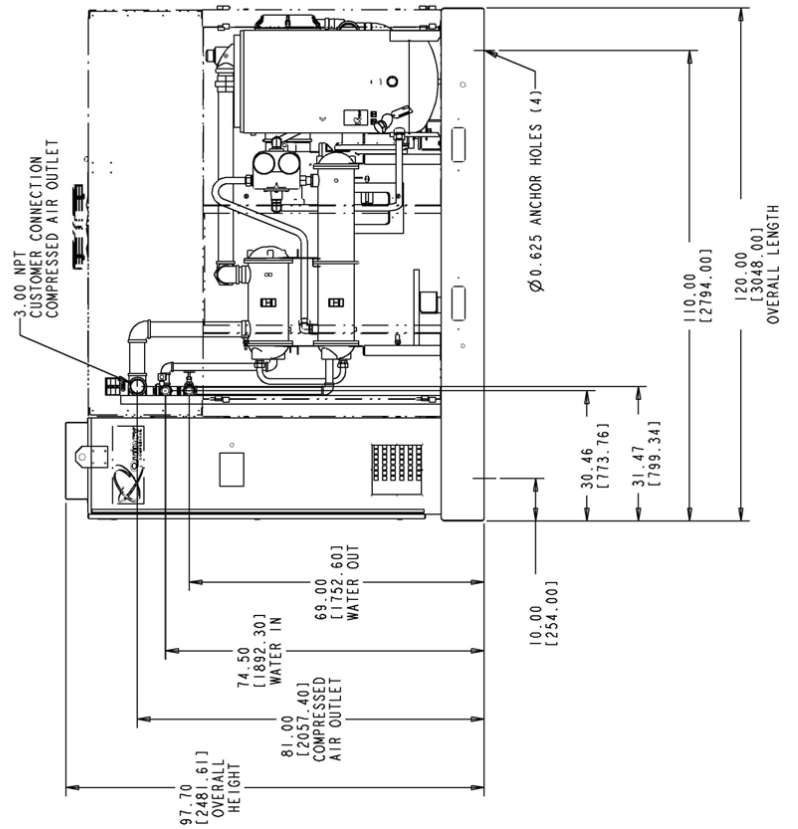
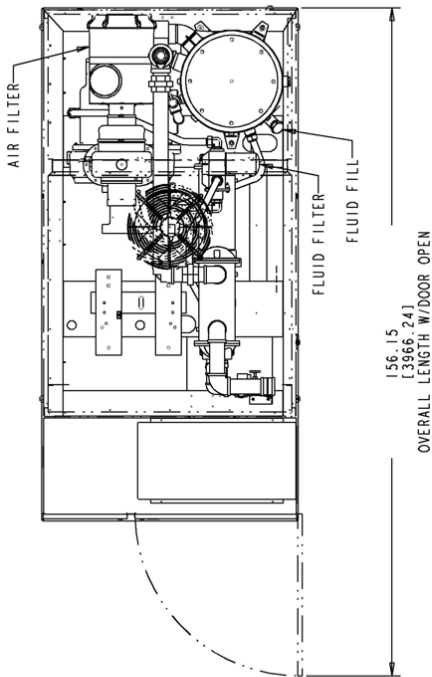
NOTES-UNLESS OTHERWISE SPECIFIED:
 1) ALLOW 4 FT OF CLEARANCE AROUND UNIT FOR SERVICE ACCESS AND FREE AIR CIRCULATION.
 2) TOP DIMENSIONS ARE IN INCHES, DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.
 3) ALL DIMENSIONS ± 0.25 INCHES EXCLUDING PIPING WHICH IS SUBJECT TO COMPONENT TOLERANCE AND THREAD ENGAGEMENT.



Appendix A - Dimensional Drawings

QGV-150/200 (water-cooled)

NOTES-UNLESS OTHERWISE SPECIFIED:
 1) ALLOW 4 FT. OF CLEARANCE AROUND UNIT FOR SERVICE ACCESS AND FREE AIR CIRCULATION.
 2) TOP DIMENSIONS ARE IN INCHES. DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.
 3) ALL DIMENSIONS ± 0.25 INCHES EXCLUDING PIPING WHICH IS SUBJECT TO COMPONENT TOLERANCE AND THREAD ENGAGEMENT.



Appendix B - Technical Data

QGV-50

		↺ STANDARD ↻			
Full Load Operating Pressure	psig	100	110	125	150
Maximum Operating Pressure	psig	115	125	140	165
Minimum Operating Pressure	psig	→	→ 75	←	←
Maximum Ambient Operating Temperature:					
Less Cabinet	°F	→	→ 115	←	←
With Cabinet	°F	→	→ 110	←	←
Minimum Ambient Operating Temperature	°F	→	→ 40	←	←
Compressor Drive Motor	HP	→	→ 50	←	←
Rotor Diameter	mm	→	→ 127.5	←	←
Male Rotor Speed	rpm	2900	2740	2630	2360
Rotor Tip Speed	m/sec.	29	27.4	26.3	23.6
Maximum Inlet Capacity	acfm	238	227	212	189
Minimum Inlet Capacity	acfm	48	42	42	39
Service Line Connection Size	in. (npt)	→	→ 1.25	←	←

Aftercooling

Heat Rejection:	Fluid Cooler	BTU/min.	2380	2335	2390	2410
	Aftercooler	BTU/min.	340	340	338	342
Aftercooler Approach (standard conditions)	°F	→	→ 5-7	←	←	
Maximum Allowable Static Backpressure	in./H ₂ O	→	→ 0.125	←	←	
Fan Motor	HP	→	→ 2	←	←	
Fan Motor	rpm	→	→ 1743	←	←	
Fan Flow	cfm	→	→ 3390	←	←	

Water-cooled Cooling

Water In/Out Size	in. (npt)	→	→ 1	←	←
Recommended Inlet Water Pressure	psig	→	→ 45-100	←	←
Vent Fan Motor	HP	→	→ 1/9	←	←
Aftercooler Approach to Cooling:					
Water Temperature	°F	→	→ 13-18	←	←
Water Flow with Aftercooler at:					
	70°F	gpm	→ 8.6	←	←
	90°F	gpm	→ 16	←	←

Consult factory for water temperatures under 50°F or over 90°F and for water/glycol cooling systems.

Compressor Fluid

Total Fluid Capacity	gallons	→	→ 11	←	←
Reservoir Fluid Capacity	gallons	→	→ 7.5	←	←
Fluid Flow	gpm	→	→ 13.6	←	←
Typical Fluid Carryover	ppm	→	→ 1-3	←	←
Normal Airend Discharge Temperature	°F	→	→ 195	←	←

Sound (at 1 meter)

Unenclosed (AC/WC)	dB(A)	→	→ 82/81	←	←
Standard Cabinet (AC/WC)	dB(A)	→	→ 78/76	←	←

QGV-75

Full Load Operating Pressure	psig	STANDARD			
		100	110	125	150
Minimum Operating Pressure	psig	→	→	75 ←	←
Maximum Ambient Operating Temperature:					
Less Cabinet	°F	→	→	115 ←	←
With Cabinet	°F	→	→	110 ←	←
Minimum Ambient Operating Temperature	°F	→	→	40 ←	←
Compressor Drive Motor	HP	→	→	75 ←	←
Rotor Diameter	mm	→	→	204 ←	←
Male Rotor Speed	rpm	2830	2685	2540	2265
Rotor Tip Speed	m/sec.	30.2	28.7	27.1	24.2
Maximum Inlet Capacity	acfm	380	360	345	302
Minimum Inlet Capacity	acfm	74	69	68	61
Service Line Connection Size	in. (npt)	→	→	2 ←	←

Aftercooling

Heat Rejection: Fluid Cooler	BTU/min.	3070	3072	3078	3080
Aftercooler	BTU/min.	530	528	525	528
Aftercooler Approach (standard conditions)	°F	→	→	5-7 ←	←
Maximum Allowable Static Backpressure	in./H ₂ O	→	→	0.125 ←	←
Fan Motor	HP	→	→	5 ←	←
Fan Motor	rpm	→	→	1743 ←	←
Fan Flow	cfm	→	→	6290 ←	←

Water-cooled Cooling

Water In/Out Size	In. (npt)	→	→	1 ←	←
Recommended Inlet Water Pressure	psig	→	→	45-100 ←	←
Vent Fan Motor	HP	→	→	1/9 ←	←
Aftercooler Approach to Cooling:					
Water Temperature	°F	→	→	13-18 ←	←
Water Flow with Aftercooler at:					
70°F	gpm	→	→	10 ←	←
90°F	gpm	→	→	18 ←	←

Consult factory for water temperatures under 50°F or over 90°F and for water/glycol cooling systems.

Compressor Fluid

Total Fluid Capacity	gallons	→	→	14 ←	←
Reservoir Fluid Capacity	gallons	→	→	11 ←	←
Fluid Flow	gpm	→	→	23.6 ←	←
Typical Fluid Carryover	ppm	→	→	1-3 ←	←
Normal Airend Discharge Temperature	°F	→	→	195 ←	←

Sound (at 1 meter)

Unenclosed (AC/WC)	dB(A)	→	→	83/81 ←	←
Standard Cabinet (AC/WC)	dB(A)	→	→	79/77 ←	←

Appendix B - Technical Data

QGV-100

Full Load Operating Pressure	psig	STANDARD			
		100	110	125	150
Minimum Operating Pressure	psig	→	→ 75	←	←
Maximum Ambient Operating Temperature:					
Less Cabinet	°F	→	→ 115	←	←
With Cabinet	°F	→	→ 110	←	←
Minimum Ambient Operating Temperature	°F	→	→ 40	←	←
Compressor Drive Motor	HP	→	→ 100	←	←
Rotor Diameter	mm	→	→ 204	←	←
Male Rotor Speed	rpm	2889	2889	2590	2405
Rotor Tip Speed	m/sec.	30.8	30.8	27.6	25.6
Maximum Inlet Capacity	acfm	485	470	422	393
Minimum Inlet Capacity	acfm	94	84	77	75
Service Line Connection Size	in. (npt)	→	→ 2	←	←

Aftercooling

Heat Rejection: Fluid Cooler	BTU/min.	2940	3095	3320	unknown
Aftercooler	BTU/min.	→	→ 594	←	unknown
Aftercooler Approach (standard conditions)	°F	→	→ 5-7	←	←
Maximum Allowable Static Backpressure	in./H ₂ O	→	→ 0.125	←	←
Fan Motor	HP	→	→ 5	←	←
Fan Motor	rpm	→	→ 1743	←	←
Fan Flow	cfm	→	→ 5200	←	←

Water-cooled Cooling

Water In/Out Size	in. (npt)	→	→ 1	←	←
Recommended Inlet Water Pressure	psig	→	→ 45-100	←	←
Vent Fan Motor	HP	→	→ 1/9	←	←
Aftercooler Approach to Cooling:					
Water Temperature	°F	→	→ 13-18	←	←
Water Flow with Aftercooler at:					
70°F	gpm	10	10.4	13.2	unknown
90°F	gpm	17	17.9	29	unknown

Consult factory for water temperatures under 50°F or over 90°F and for water/glycol cooling systems.

Compressor Fluid

Total Fluid Capacity	gallons	→	→ 13	←	←
Reservoir Fluid Capacity	gallons	→	→ 11	←	←
Fluid Flow	gpm	→	→ 32	←	←
Typical Fluid Carryover	ppm	→	→ 1-3	←	←
Normal Airend Discharge Temperature	°F	→	→ 195	←	←

Sound (at 1 meter)

Unenclosed (AC/WC)	dB(A)	→	→ 86/84	←	←
Standard Cabinet (AC /WC)	dB(A)	→	→ 79/77	←	←

Appendix B - Technical Data

QGV-150

Full Load Operating Pressure	psig	STANDARD			
		100	110	125	150
Minimum Operating Pressure	psig	→	→	75 ←	←
Maximum Ambient Operating Temperature:					
Less Cabinet	°F	→	→	115 ←	←
With Cabinet	°F	→	→	110 ←	←
Minimum Ambient Operating Temperature	°F	→	→	40 ←	←
Compressor Drive Motor	HP	→	→	150 ←	←
Rotor Diameter	mm	→	→	255 ←	←
Male Rotor Speed	rpm	2670	2575	2420	2190
Rotor Tip Speed	m/sec.	35.6	34.3	32.3	29.2
Maximum Inlet Capacity	acfm	772	717	694	600
Minimum Inlet Capacity	acfm	138	139	128	126
Service Line Connection Size	in. (npt)	→	→	2.5 ←	←

Aftercooling

Heat Rejection: Fluid Cooler	BTU/min.	5911	5899	5811	5650
Aftercooler	BTU/min.	→	→	658 ←	←
Aftercooler Approach (standard conditions)	°F	→	→	5-7 ←	←
Maximum Allowable Static Backpressure	in./H ₂ O	→	→	0.125 ←	←
Fan Motor	HP	→	→	5 ←	←
Fan Motor	rpm	→	→	1180 ←	←
Fan Flow	cfm	→	→	13500 ←	←

Water-cooled Cooling

Water In/Out Size	In. (npt)	→	→	1.25 ←	←
Recommended Inlet Water Pressure	psig	→	→	45-100 ←	←
Vent Fan Motor	HP	→	→	1/9 ←	←
Aftercooler Approach to Cooling:					
Water Temperature	°F	→	→	13-18 ←	←
Water Flow with Aftercooler at:					
70°F	gpm	→	→	13.1 ←	←
90°F	gpm	→	→	20.4 ←	←

Consult factory for water temperatures under 50°F or over 90°F and for water/glycol cooling systems.

Compressor Fluid

Total Fluid Capacity	gallons	→	→	28 ←	←
Reservoir Fluid Capacity	gallons	→	→	21 ←	←
Fluid Flow	gpm	→	→	49 ←	←
Typical Fluid Carryover	ppm	→	→	1-3 ←	←
Normal Airend Discharge Temperature	°F	→	→	195 ←	←

Sound (at 1 meter)

Unenclosed (AC/WC)	dB(A)	→	→	84/83 ←	←
Standard Cabinet (AC /WC)	dB(A)	→	→	83/80 ←	←

Appendix B - Technical Data

QGV-200

Full Load Operating Pressure	psig	STANDARD				
		100	110	125	150	
Minimum Operating Pressure	psig	→	→	75	←	←
Maximum Ambient Operating Temperature:						
Less Cabinet	°F	→	→	115	←	←
With Cabinet	°F	→	→	110	←	←
Minimum Ambient Operating Temperature	°F	→	→	40	←	←
Compressor Drive Motor	HP	→	→	200	←	←
Rotor Diameter	mm	→	→	255	←	←
Male Rotor Speed	rpm	2889	2792	2700		2490
Rotor Tip Speed	m/sec.	38.6	37.3	36.1		33.3
Maximum Inlet Capacity	acfm	1015	980	960		815
Minimum Inlet Capacity	acfm	175	172	169		167
Service Line Connection Size	in. (npt)	→	→	2.5	←	←

Aftercooling

Heat Rejection: Fluid Cooler	BTU/min.	7480	8160	8025		7990
Aftercooler	BTU/min.	→	→	880	←	←
Aftercooler Approach (standard conditions)	°F	→	→	5-7	←	←
Maximum Allowable Static Backpressure	in./H ₂ O	→	→	0.125	←	←
Fan Motor	HP	→	→	5	←	←
Fan Motor	rpm	→	→	1159	←	←
Fan Flow	cfm	→	→	16200	←	←

Water-cooled Cooling

Water In/Out Size	In. (npt)	→	→	1	←	←
Recommended Inlet Water Pressure	psig	→	→	45-100	←	←
Vent Fan Motor	HP	→	→	1/9	←	←
Aftercooler Approach to Cooling:						
Water Temperature	°F	→	→	13-18	←	←
Water Flow with Aftercooler at:						
70°F	gpm	10	10.4	13.2		unknown
90°F	gpm	17	17.9	29		unknown

Consult factory for water temperatures under 50°F or over 90°F and for water/glycol cooling systems.

Compressor Fluid

Total Fluid Capacity	gallons	→	→	28	←	←
Reservoir Fluid Capacity	gallons	→	→	21	←	←
Fluid Flow	gpm	→	→	49	←	←
Typical Fluid Carryover	ppm	→	→	1-3	←	←
Normal Airend Discharge Temperature	°F	→	→	195	←	←

Sound (at 1 meter)

Unenclosed (AC/WC)	dB(A)	→	→	87/84	←	←
Standard Cabinet (AC /WC)	dB(A)	→	→	84/80	←	←

STANDARD TERMS AND CONDITIONS

QUINCY COMPRESSOR AND ORTMAN FLUID POWER DIVISIONS

LEGAL EFFECT: Except as expressly otherwise agreed to in writing by an authorized representative of Seller, the following terms and conditions shall apply to and form a part of this order and any additional and/or different terms of Buyer's purchase order or other form of acceptance are rejected in advance and shall not become a part of this order.

The rights of Buyer hereunder shall be neither assignable nor transferable except with the written consent of Seller.

This order may not be canceled or altered except with the written consent of Seller and upon terms which will indemnify Seller against all loss occasioned thereby. All additional costs incurred by Seller due to changes in design or specifications, modification of this order or revision of product must be paid for by Buyer.

In addition to the rights and remedies conferred upon Seller by this order, Seller shall have all rights and remedies conferred at law and in equity and shall not be required to proceed with the performance of this order if Buyer is in default in the performance of such order or of any other contract or order with seller.

TERMS OF PAYMENT: Unless otherwise specified in the order acknowledgment, the terms of payment shall be net cash within thirty (30) days after shipment. These terms shall apply to partial as well as complete shipments. If any proceeding be initiated by or against Buyer under any bankruptcy or insolvency law, or in the judgment of Seller the financial condition of Buyer, at the time the equipment is ready for shipment, does not justify the terms of payment specified, Seller reserves the right to require full payment in cash prior to making shipment. If such payment is not received within fifteen (15) days after notification of readiness for shipment, Seller may cancel the order as to any unshipped item and require payment of its reasonable cancellation charges.

If Buyer delays shipment, payments based on date of shipment shall become due as of the date when ready for shipment. If Buyer delays completion of manufacture, Seller may elect to require payment according to percentage of completion. Equipment held for Buyer shall be at Buyer's risk and storage charges may be applied at the discretion of Seller.

Accounts past due shall bear interest at the highest rate lawful to contract for but if there is no limit set by law, such interest shall be eighteen percent (18%). Buyer shall pay all cost and expenses, including reasonable attorney's fees, incurred in collecting the same, and no claim, except claims within Seller's warranty of material or workmanship, as stated below, will be recognized unless delivered in writing to Seller within thirty (30) days after date of shipment.

TAXES: All prices exclude present and future sales, use, occupation, license, excise, and other taxes in respect of manufacture, sales or delivery, all of which shall be paid by Buyer unless included in the purchase price at the proper rate or a proper exemption certificate is furnished.

ACCEPTANCE: All offers to purchase, quotations and contracts of sales are subject to final acceptance by an authorized representative at Seller's plant.

DELIVERY: Except as otherwise specified in this quotation, delivery will be F. O. B. point of shipment. In the absence of exact shipping instruction, Seller will use its discretion regarding best means of insured shipment. No liability will be accepted by Seller for so doing. All transportation charges are at Buyer's expense. Time of delivery is an estimate only and is based upon the receipt of all information and necessary approvals. The shipping schedule shall not be construed to limit seller in making commitments for materials or in fabricating articles under this order in accordance with Seller's normal and reasonable production schedules.

Seller shall in no event be liable for delays caused by fires, acts of God, strikes, labor difficulties, acts of governmental or military authorities, delays in transportation or procuring materials, or causes of any kind beyond Seller's control. No provision for liquidated damages for any cause shall apply under this order. Buyer shall accept delivery within thirty (30) days after receipt of notification of readiness for shipment. Claims for shortages will be deemed to have been waived if not made in writing within ten (10) days after the receipt of the material in respect of which any such shortage is claimed. Seller is not responsible for loss or damage in transit after having received "In Good Order" receipt from the carrier. All claims for loss or damage in transit should be made to the carrier.

STANDARD TERMS AND CONDITIONS

QUINCY COMPRESSOR AND ORTMAN FLUID POWER DIVISIONS

TITLE & LIEN RIGHTS: The equipment shall remain personal property, regardless of how affixed to any realty or structure. Until the price (including any notes given therefore) of the equipment has been fully paid in cash, Seller shall, in the event of Buyer's default, have the right to repossess such equipment.

PATENT INFRINGEMENT: If properly notified and given an opportunity to do so with friendly assistance, Seller will defend Buyer and the ultimate user of the equipment from any actual or alleged infringement of any published United States patent by the equipment or any part thereof furnished pursuant hereto (other than parts of special design, construction, or manufacture specified by and originating with Buyer), and will pay all damages and costs awarded by competent court in any suit thus defended or of which it may have had notice and opportunity to defend as aforesaid.

STANDARD WARRANTY: Seller warrants that products of its own manufacture will be free from defects in workmanship and materials under normal use and service for the period specified in the product instruction manual. Warranty for service parts will be ninety (90) days from date of factory shipment. Electric Motors, gasoline and diesel engines, electrical apparatus and all other accessories, components and parts not manufactured by Seller are warranted only to the extent of the original manufacturer's warranty.

Notice of the alleged defect must be given to the Seller, in writing with all identifying details including serial number, type of equipment and date of purchase within thirty (30) days of the discovery of the same during the warranty period.

Seller's sole obligation on this warranty shall be, at its option, to repair or replace or refund the purchase price of any product or part thereof which proves to be defective. If requested by Seller, such product or part thereof must be promptly returned to seller, freight prepaid, for inspection.

Seller warrants repaired or replaced parts of its own manufacture against defects in materials and workmanship under normal use and service for ninety (90) days or for the remainder of the warranty on the product being repaired.

This warranty shall not apply and Seller shall not be responsible or liable for:

- (a) Consequential, collateral or special losses or damages;
- (b) Equipment conditions caused by fair wear and tear, abnormal conditions of use, accident, neglect or misuse of equipment, improper storage or damage resulting during shipping;
- (c) Deviation from operating instructions, specifications or other special terms of sale;
- (d) Labor charges, loss or damage resulting from improper operation, maintenance or repairs made by person(s) other than Seller or Seller's authorized service station.

In no event shall Seller be liable for any claims whether arising from breach of contract or warranty or claims of negligence or negligent manufacture in excess of the purchase price.

THIS WARRANTY IS THE SOLE WARRANTY OF SELLERS AND ANY OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED IN LAW OR IMPLIED IN FACT, INCLUDING ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR USE ARE HEREBY SPECIFICALLY EXCLUDED.

LIABILITY LIMITATIONS: Under no circumstances shall the Seller have any liability for liquidated damages or for collateral, consequential or special damages or for loss of profits, or for actual losses or for loss of production or progress of construction, whether resulting from delays in delivery or performance, breach of warranty, negligent manufacture or otherwise.

ENVIRONMENTAL AND OSHA REQUIREMENTS: At the time of shipment of the equipment from the factory, Quincy Compressor / Ortman Fluid Power will comply with the various Federal, State and local laws and regulations concerning occupational health and safety and pollution. However, in the installation and operation of the equipment and other matters over which the seller has no control, the Seller assumes no responsibility for compliance with those laws and regulations, whether by the way of indemnity, warranty or otherwise.



Rotary/Vacuum/Systems: 251.937.5900
E-mail: info@quincycompressor.com
Website: www.quincycompressor.com



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