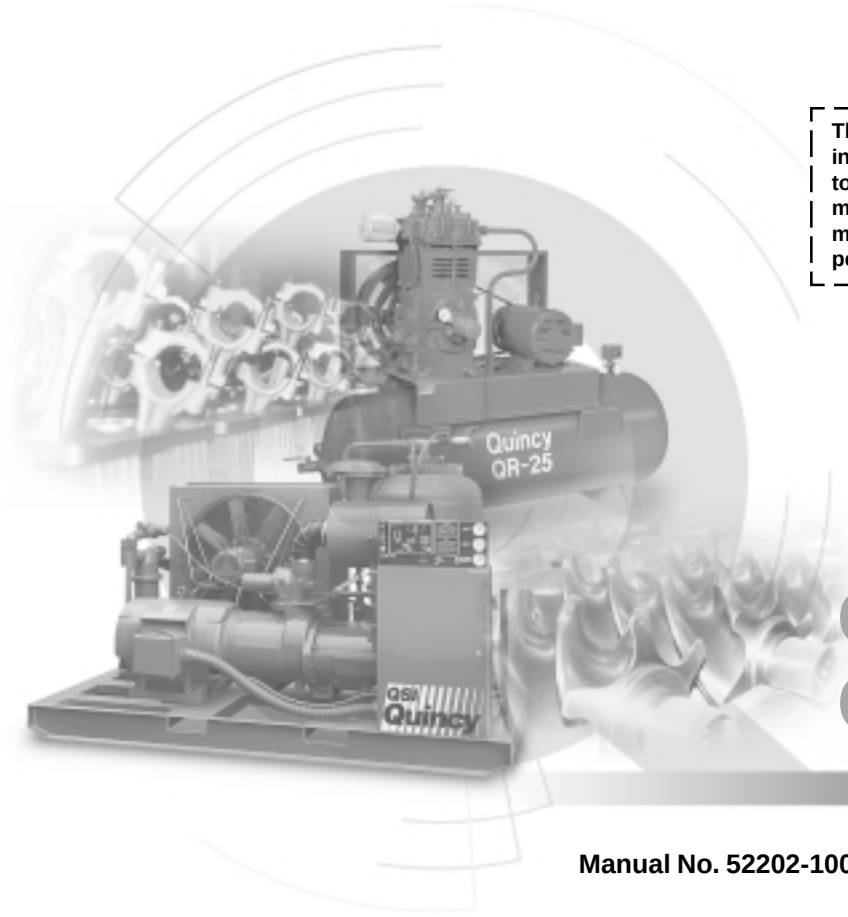
Quincy Do-All

Simplex Compressor Controller

Instruction Manual

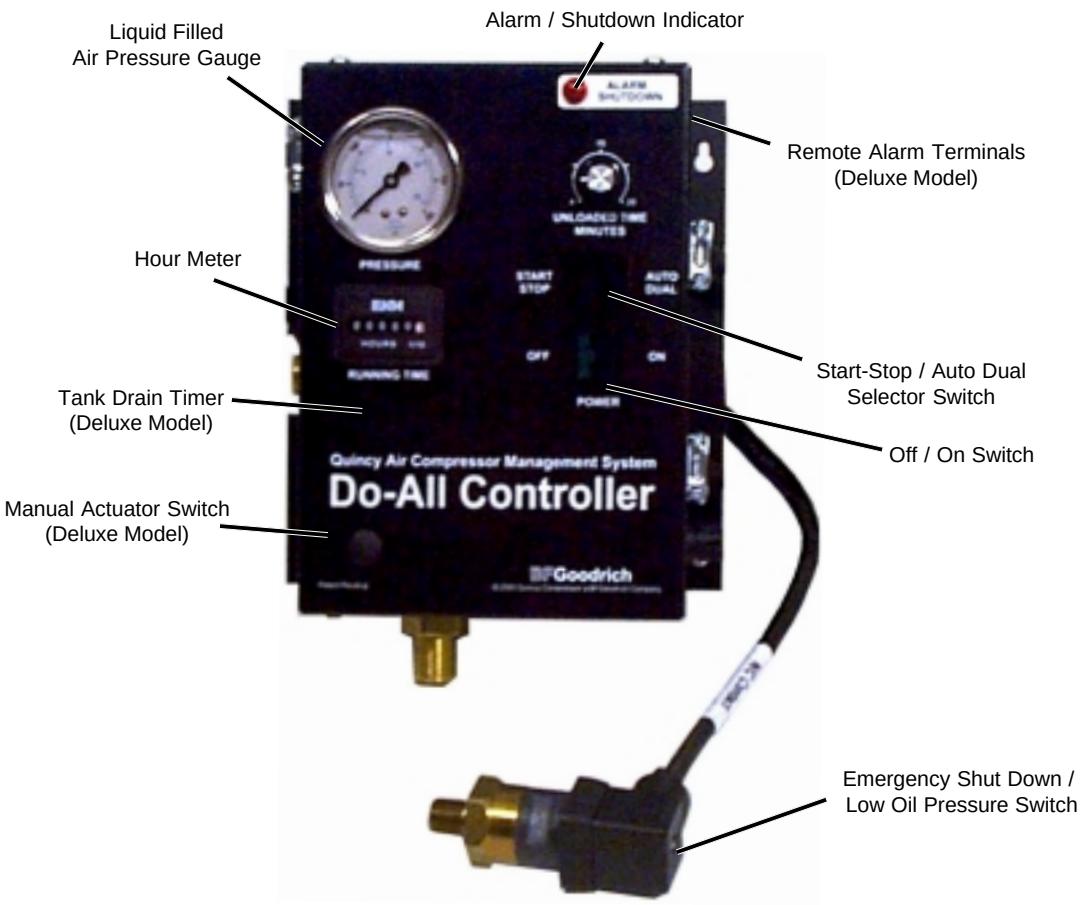


This manual contains important safety information and should be made available to all personnel who operate and/or maintain this product. Carefully read this manual before attempting to operate or perform maintenance on this compressor.

Quincy Compressor®

True Blue Reliability™

Manual No. 52202-100 **April 2000 Edition**



Description & Application

The Quincy Do-All Controller is an energy saving device designed to facilitate maximum operating efficiency of your simplex air compressor and eliminate common problems associated with compressors unloading for long periods of time. It is available for 115 volt and 230 volt applications.

The Emergency Shutdown / Low Oil Pressure Switch will shut down your compressor in the event of oil loss. The Auto Tank Drain, available on the deluxe model, will automatically drain condensate from the compressor receiver tank with virtually no wasted air.

Please Read Instructions Before Installing

The Quincy Do-All Controller is simple to install and requires only two plumbing (air) connections and two electrical connections. Before installing the controller, please read and follow all safety instructions.

SAFETY SECTION

Safety First

At Quincy Compressor safety is not only a primary concern, but a faithfully performed practice. Beginning with the design stage, safety is built into "The World's Finest Compressor". It is the intention of this manual to pass along the "safety first" concept to you by providing safety precautions throughout its pages.

"DANGER !", **"WARNING !"**, and **"CAUTION !"** are displayed in large bold capital letters in the left hand column to call attention to areas of vital concern. They represent different degrees of hazard seriousness, as stated below. The safety precaution is spelled out in bold upper and lower case letters in the right hand column.

DANGER ! **Immediate hazards which will result in severe personal injury or death.**

WARNING ! **Hazards or unsafe practices that could result in personal injury or death.**

CAUTION ! **Hazards or unsafe practices which could result in minor personal injury, product or property damage.**

Each section of this instruction manual, as well as any instructions supplied by manufacturers of supporting equipment, should be read and understood prior to starting the compressor. If there are any questions regarding any part of the instructions, please call your local Quincy Compressor Distributor, or the Quincy Compressor factory before creating a potentially hazardous situation. Life, limb, or equipment could be saved with a simple phone call.

Compressors are precision high speed mechanical equipment requiring caution in operation to minimize hazard to property and personnel. There are many obvious safety rules that must be observed in the operation of this type of equipment. Listed below are some additional safety precautions that must be observed.

• Transfer of toxic, dangerous, flammable or explosive substances using Quincy Compressor products is at the user's risk.

• Turn off and lockout/tagout (per O.S.H.A regulation 1910.147) the main power disconnect switch before attempting to work or perform any maintenance.

• Do not attempt to service any part of the unit while it is operating.

• Per O.S.H.A regulation 1910.147, relieve the system of all pressure before attempting to service any part of the unit.

•Do not operate the unit with any of its safety guards, shields, or screens removed.

•Do not remove or paint over any DANGER!, WARNING!, CAUTION!, or instructional materials attached to the compressor. Lack of information regarding hazardous conditions can cause property damage or personal injury.

•Periodically check all pressure relief valves for proper operation.

•Do not rebuild or change the pressure setting of the pressure relief valve, restrict the function of the inlet or outlet of the pressure relief valve, or replace the pressure relief valve with a plug or any device not specifically certified for this function.

•Do not install a shutoff valve in the compressor discharge line without first installing a pressure relief valve of proper size and design between the shutoff valve and the compressor.

•Do not use plastic pipe, rubber hose, or lead-tin soldered joints in any part of the compressed air system.

•Alterations must not be made to this compressor without Quincy Compressor's approval.

•Be sure that all tools, shipping and installation debris have been removed from the compressor and installation site prior to starting the compressor.

WARNING !

Do not operate a Quincy Compressor in excess of 250 p.s.i.g. unless it has been tested and certified for high pressure application by Quincy Compressor prior to shipment.

•High pressure units (pressures exceeding 250 psig) require parts certified for use in high pressure applications. When replacing parts on high pressure units, please consult the parts manual and use only the part numbers listed in that manual.

•Do not operate the compressor in excess of the A.S.M.E. pressure vessel rating for the receiver or the service rating of the compressor, whichever is lower.

•Make a general overall inspection of the unit daily and correct any unsafe situations.

•Reckless behaviour of any kind involving compressed air is dangerous and can cause very serious injury to the participants.

•Provisions should be made to have the instruction manual readily available to the operator and maintenance personnel. If for any reason any part of the manual becomes illegible or the manual is lost, have it replaced immediately. The instruction manual should be read periodically to refresh one's memory. It may prevent a serious or fatal accident.

•Never use a flammable or toxic solvent for cleaning the air filter or any parts.

DANGER !

Air used for breathing or food processing must meet O.S.H.A. 29 C.F.R. 1910.134 or F.D.A. 21 C.F.R. 178.3570 regulations. Failure to do so may cause severe injury or death.

The owner, lessor or operator of any compressor unit manufactured by Quincy Compressor is hereby warned that failure to observe the above safety precautions may result in serious injury to personnel and/or damage to property.

Quincy Compressor neither states as fact, nor in any way implies that the above list of safety precautions is an all inclusive list, the observance of which will prevent all damage to property or injury to personnel.

Every effort has been taken to ensure that 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.

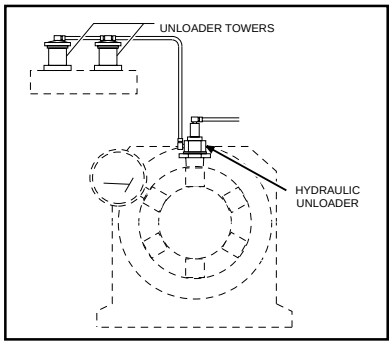


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Fig. 1 Control Version L

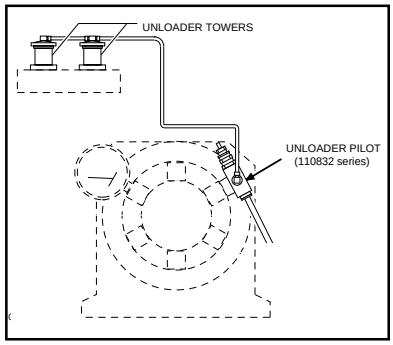

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Fig. 2 Control Version S

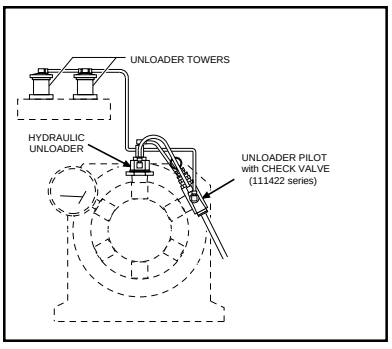

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Fig. 3 Control Version LS

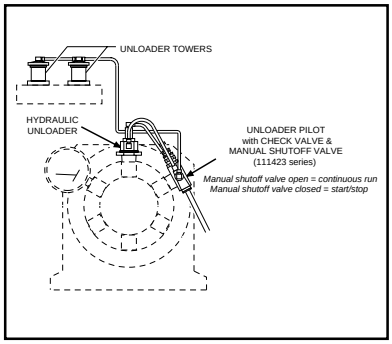

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Fig. 4 Control Version LVD

INSTALLATION INSTRUCTIONS

Stopping for Maintenance

The following procedures must be followed when stopping the compressor for maintenance or service:

Step 1) Per O.S.H.A. regulation 1910.147: The Control of Hazardous Energy Source (Lockout/Tagout), disconnect and lockout the main power source. Display a sign in clear view at the main power switch stating that the compressor is being serviced.

WARNING ! **Never assume a compressor is safe to work on just because it is not operating. It could restart at any time.**

Step 2) Isolate the compressor from the compressed air supply by closing a manual shutoff valve upstream and downstream from the compressor. Display a sign in clear view at the shutoff valve stating that the compressor is being serviced.

Step 3) Lock open a pressure relief valve within the pressurized system to allow the system to be completely de-pressurized. **NEVER** remove a plug to relieve the pressure!

Step 4) Shut off the water cooling supply (watercooled versions).

Step 5) Open all manual drain valves within the area to be serviced.

Step 6) Wait for the unit to cool before starting to service. (Temperatures of 125°F can burn skin. Some surface temperatures exceed 350°F when the compressor is operating.)

Do-All Controller Installation

Steps 1 through 6 of ***"Stopping for Maintenance"*** must be performed before proceeding to the following installation procedures.

Step 1) Disconnect and remove the pressure switch from the compressor unit.

Step 2) Disconnect and remove the hydraulic unloader and / or unloader pilot from the air compressor *(See Fig.s 1, 2, 3 & 4 previous page).*

Step 3) Mount the Quincy Do-All Controller to the compressor unit top plate or remote mount it to an adjacent wall *(refer to Fig. 5, next page).* Utilize the holes in the flanges on either side of the controller.

Step 4) Run 1/4" minimum OD copper tube from the air receiver to the bottom 1/4" npt connection of the controller. A line filter / moisture separator installed in this line is recommended.

Step 5) Connect compressor head unloaders or discharge line unloader to the ¼" npt outlet on the lower left side of the controller.

Step 6) On deluxe models, remove the manual tank drain from the bottom of the tank.

Step 7) Plumb 1/4" iron pipe to the bottom bung of the air receiver *(see Fig. 5)* and install the automatic tank drain .

Step 8) Loosen the screw that holds the DIN-connector to the tank drain and unplug the connector. Screw the tank drain onto the iron pipe.

Step 9) Plug the DIN-connector into the tank drain and tighten the screw. Adjust the time interval for the automatic tank drain by turning the knob labeled "Auto Drain Duration" on the front of the controller panel. The tank drain will actuate every hour based upon actual compressor pumping time*. Note that the tank drain can be manually tested by depressing the button labeled "Test Drain".

** Pumping Time = The amount of time the compressor unit is compressing air*

Electrical Supply Requirements

The electrical installation of this unit should be performed by a qualified electrician with knowledge of the National Electrical Code (N.E.C.), O.S.H.A. code and/or any local or state codes having precedence.

Before installation, the electrical supply should be checked for adequate wire size and transformer capacity. A suitable circuit breaker or fused

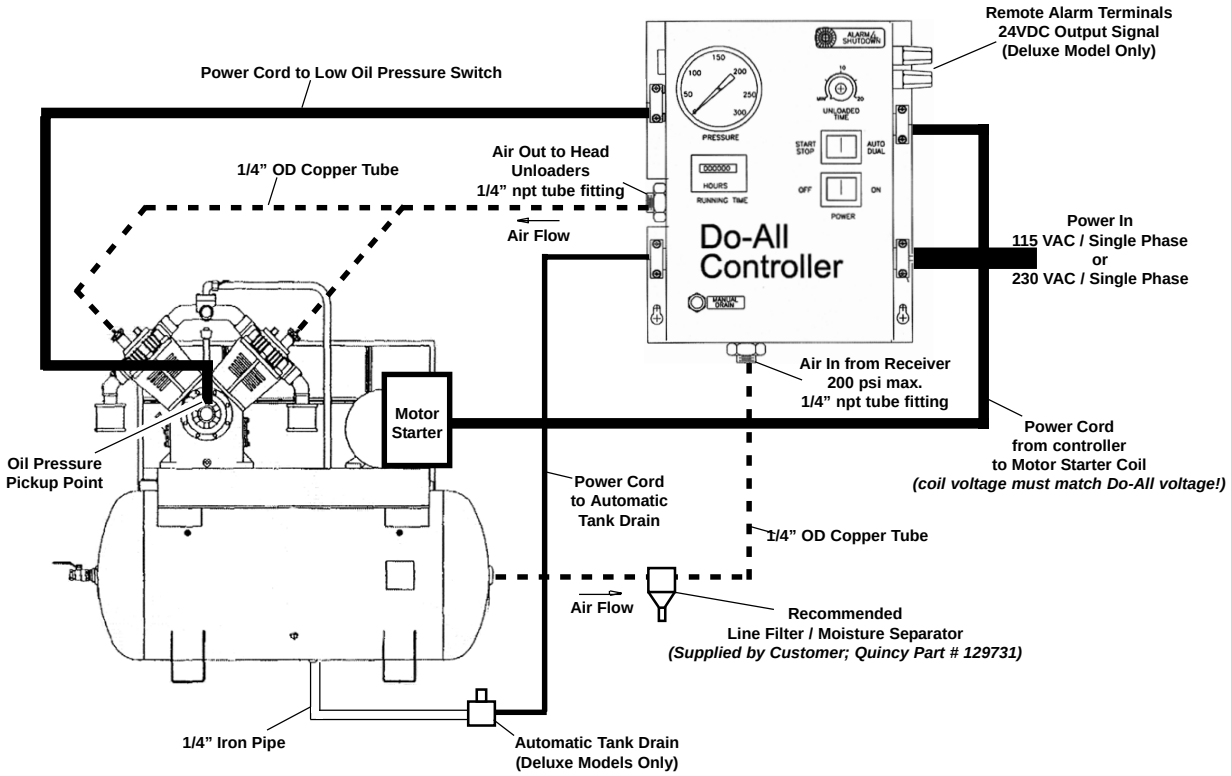


Fig. 5 Control Schematic
Quincy Do-All Controller to Typical Quincy Compressor Unit

disconnect switch should be provided. When a 3 phase motor is used to drive a compressor, any unreasonable voltage imbalance between the legs must be eliminated and any low voltage corrected to prevent excessive current draw. **Note: This unit must be grounded.**

The installation, electric motor, wiring, and all electrical controls must be in accordance with NFPA 70 National Electric Code, state and local codes. Failure to abide by the national, state and local codes may result in physical harm and/or property damage.

DANGER ! **High voltage may cause personal injury or death. Disconnect and lockout/tagout per O.S.H.A. regulation 1910.147 all electrical power supplies before opening the electrical enclosure or servicing.**

WARNING ! **Never assume a compressor is safe to work on just because it is not operating. It could restart at any time. Follow all safety precautions outlined in SECTION 5*, Stopping For Maintenance.***

CAUTION ! **NEMA electrical enclosures and components must be appropriate to the area installed.**

Electrical Installation

Quincy Do-All Controllers are available for 115 volt and / or 230 volt, 60 Hz, **single phase** incoming power sources.

CAUTION ! **Do not attempt to connect three phase voltage directly to a Quincy Do-All Controller.**

A step-down transformer (Control Power Transformer or CPT) must be installed for incoming three phase voltage. The CPT converts incoming voltage to match the specified voltage of the Do-All Controller.

Proceed with the following electrical installation procedures:

Step 1) Connect three wires of power cord coming from upper right side of Do-All Controller (labeled POWER OUT [STARTER COIL]) to the motor starter coil *(refer to wiring diagrams Fig.s 6 through 8).*

Step 2) If so equipped, install Emergency Shut Down / Low Oil Pressure Switch onto the oil pump housing in the opening previously occupied by the hydraulic unloader.

Step 3) Remove the fuse from the Do-All Controller and inspect. The fuse must be rated 6 amp, 250 volt. Reinstall or replace the fuse after inspection.

Step 4) **The enclosed decal "Multiple Power Sources" must be affixed to the outside cover of the motor starter whenever the controller is wired according to Fig. 6.**

Step 5) Set the OFF/ ON rocker switch to the "OFF" position.

Step 6) Insert 3-prong plug of power cord into a grounded outlet, or connect the power cord to CPT per wiring diagram (Fig. 7) or the motor starter per wiring diagram (Fig. 8).

WARNING !

Future maintainance requires lockout / tagout of all power sources according to O.S.H.A. regulation 1910.147: The Control of Hazardous Energy Source (Lockout/Tagout)

Step 7) Push rocker switch to select "START / STOP" OR "AUTO DUAL" mode of operation.

START / STOP Mode

The compressor will start and stop in response to the pressure switch when operated in the "START / STOP" mode.

AUTO DUAL Mode

The AUTO DUAL mode provides unattended start / timed-stop operation. The compressor will start automatically, load, unload, idle and stop in response to the automatic controls. The timed shutdown "UNLOAD TIME" interval is adjustable from 4 to 20 minutes and can be adjusted with the knob located on the front of the controller. AUTO DUAL mode is selected to prevent frequent starting and stopping of the compressor motor. The motor should not start more than 6 times per hour. An "UNLOAD TIME" setting of 10 minutes will guarantee this.

Step 8) Start the compressor unit by depressing the "OFF / ON" rocker switch.

LOW OIL PRESSURE ALARM SHUTDOWN

The ALARM SHUTDOWN indicator, located on the upper right corner of the controller panel, will flash intermittantly during a low oil pressure shutdown condition. Refer to the Troubleshooting Section for probable causes and corrective actions. Read and understand the "Stopping for Maintenance" procedures in the **INSTALLATION INSTRUCTIONS** of this manual before performing any maintenance to this equipment

If there are any questions regarding any part of the instructions, please call your local Quincy Compressor Distributor, or the Quincy Compressor factory before creating a potentially hazardous situation. Life, limb, or equipment could be saved with a simple phone call.

Pressure Adjustment

The maximum operating pressure of the Quincy Do-All Controller is 200 psig (adjustable 70 to 200 psig). It is factory preset for approximately 100 psig with a 25 psig differential pressure setting. The differential pressure setting is not adjustable.

DANGER !

Check the air pressure ratings on all related equipment and piping before setting the pressure switch on the Do-All Controller. Pressures in excess of the limits of the air compressor and the air receiver may cause property damage, severe personal injury or even death

DANGER !

Pressure relief valves are designed to protect compressed air systems in accordance with ASME B19 safety standards. Failure to provide properly sized pressure relief valves may cause property damage, severe personal injury or even death.

To adjust the operating pressure of the Do-All Controller:

Step 1) Insert an 1/8" allen wrench (supplied) into the hole labeled "PRESSURE ADJ" on the upper left side of the controller.

Step 2) Turn the allen wrench **clockwise to increase** and **counterclockwise to decrease** the operating pressure. A 1/4 turn changes the pressure setting by approximately 15 psig.

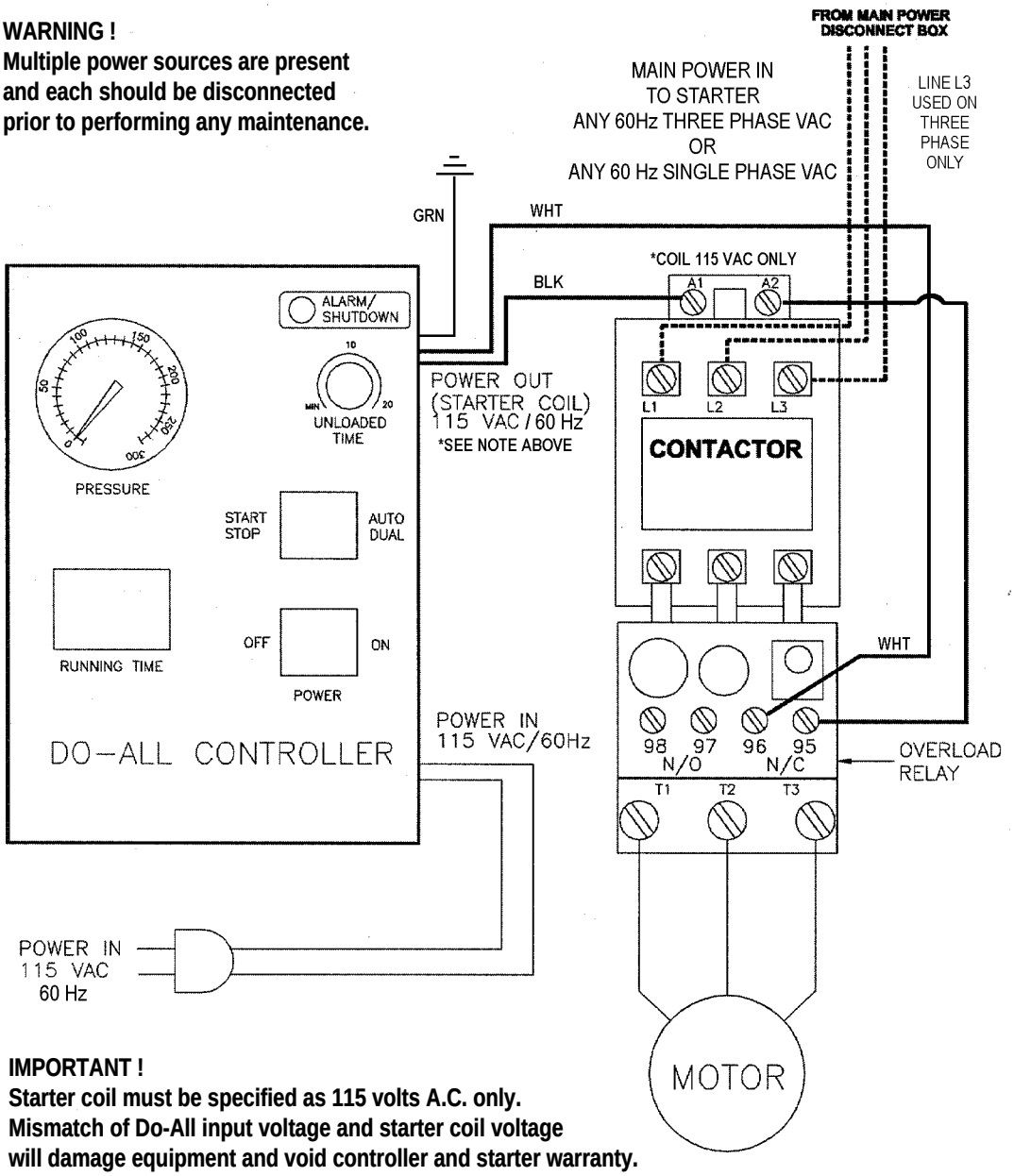
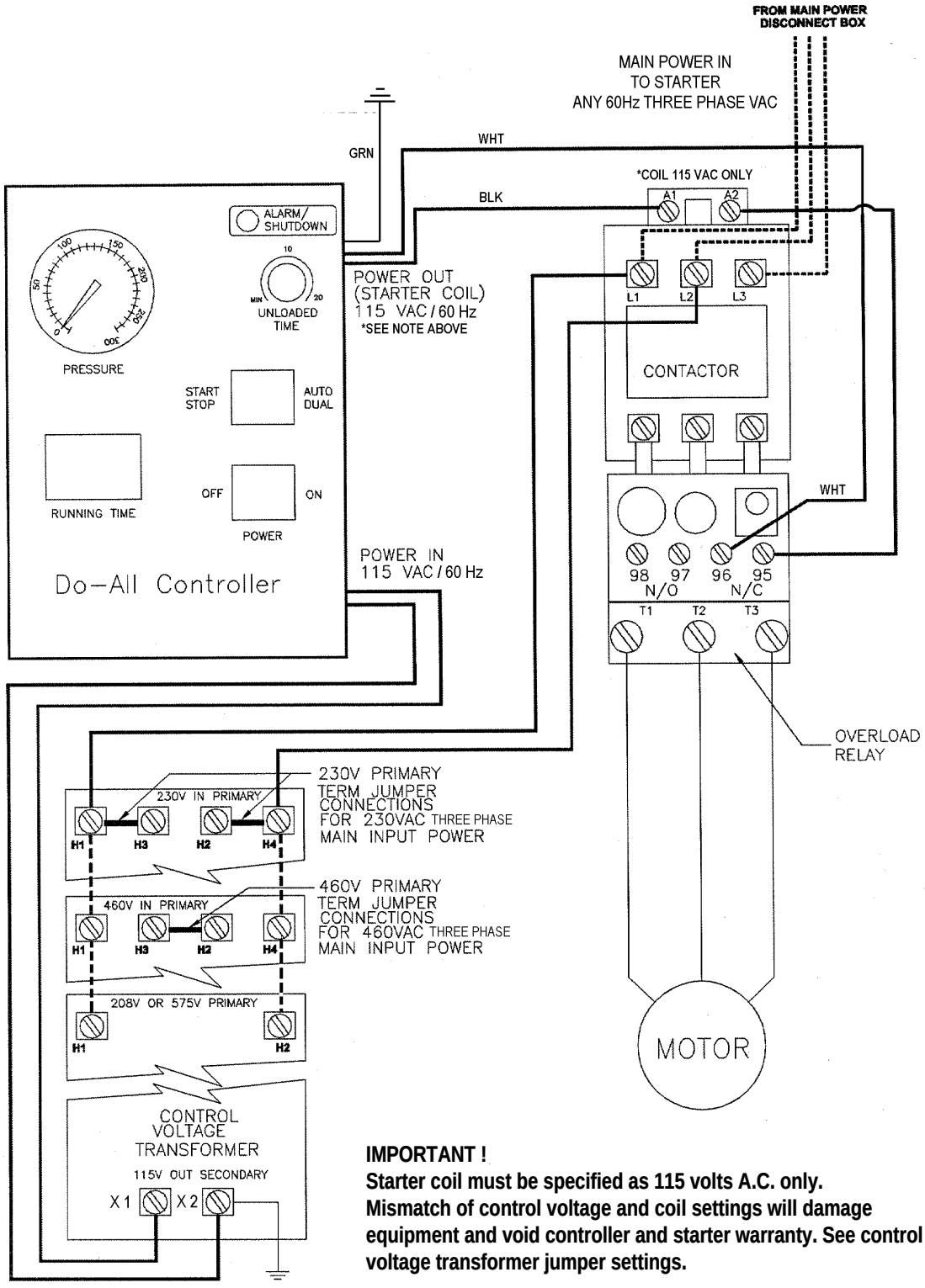
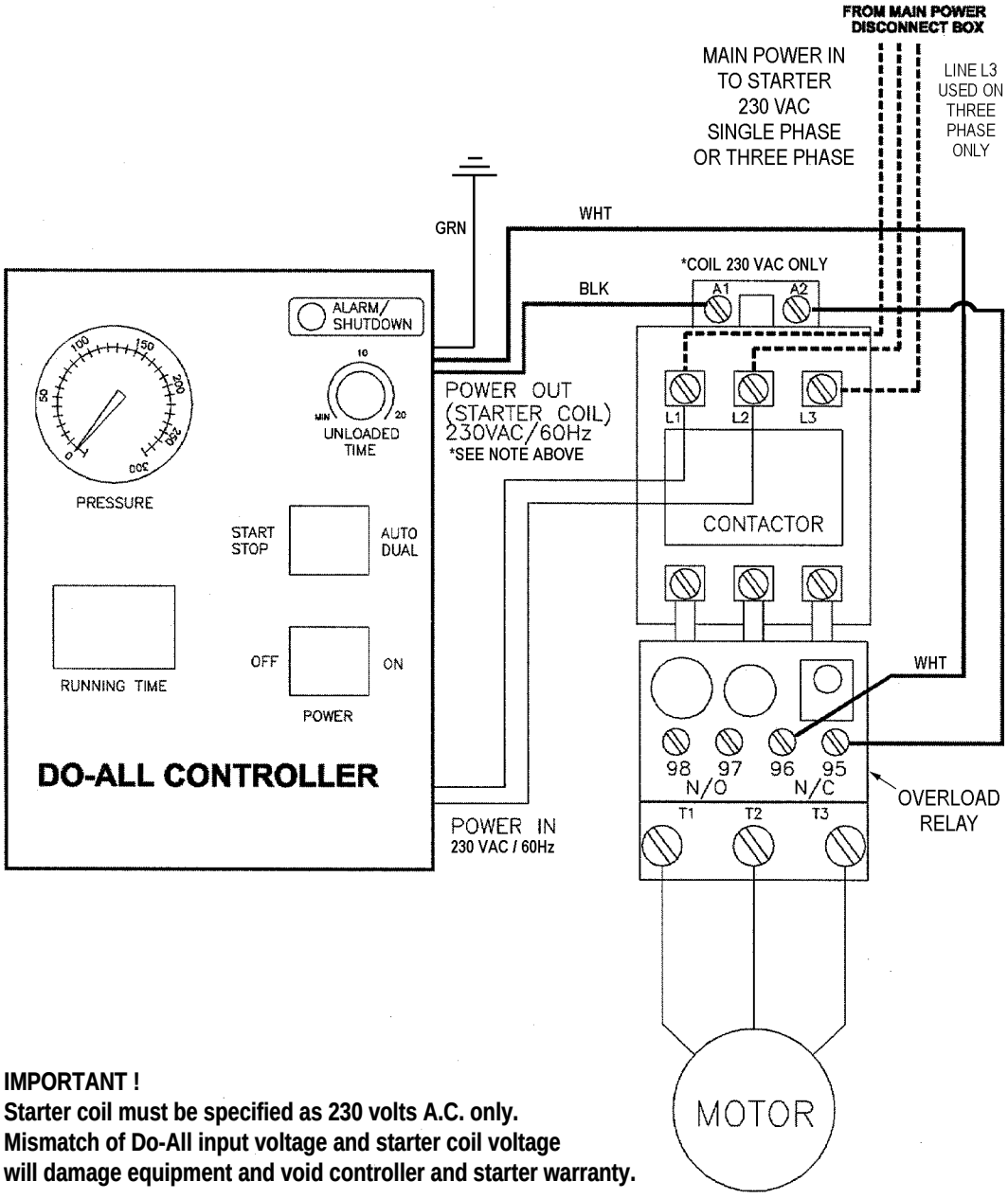


Fig. 6 Wiring Diagram
115 VAC Model with Power Cord
with any Single Phase or Three Phase Starter with 115 VAC Coil



IMPORTANT !
Starter coil must be specified as 115 volts A.C. only. Mismatch of control voltage and coil settings will damage equipment and void controller and starter warranty. See control voltage transformer jumper settings.

Fig. 7 Wiring Diagram
115 VAC Model without Power Cord
with Three Phase Starter and Control Power Transformer



IMPORTANT !
Starter coil must be specified as 230 volts A.C. only.
Mismatch of Do-All input voltage and starter coil voltage will damage equipment and void controller and starter warranty.

Fig. 8 Wiring Diagram
230 VAC Model with Single Phase or Three Phase 230 VAC only Starter

TROUBLESHOOTING

Problem	Probable Cause	Corrective Action
no light on the controller ON / OFF switch	defective power switch	replace controller power switch
	switch is not at “ON” position	verify power on position
	power is not connected	verify input power from disconnect switch to controller
	blown fuse on controller	check fuse (1/4 x 1-1/4 glass fues non-time delay type AGC 6 amp - 250V)
	·defective logic board	·replace logic board
controller blows fuse on start up	coil wires are touching	check coil wires for proper connection
	manual drain wires are touching	check drain wires for contact
	defective starter coil (shorted)	check starter coil
	defective drain solenoid	replace drain solenoid
starter coil does not engage	coil miswired	check coil wiring (only Do-All controller wires to be connected to starter coil)
	controller / voltage mismatch	verify matching coil voltage between controller and starter coil
	defective coil (shorted)	verify coil integrity
	defective controller logic board	test / replace logic board
controller emergency shutdown not operating	defective logic board	test / replace logic board
	defective sensor switch	test sensor for continuity, should be N.C. & connected in series
emergency shutdown flashing but motor still running	existing pressure switch still operating	disconnect old pressure switch
	defective logic board	test / replace logic board
	emergency wire not connected to L.O.P. switch	connect emergency wires to sensor
emergency shutdown comes on with no system fault	loose wire on L.O.P switch	check L.O.P. switch wire connections inside panel
	defective L.O.P. switch	verify continuity of sensor to N.O. operation, switch sticking open
	defective controller logic board	replace logic board
erratic pressure fluctuation	water in controller air lines	clean air lines
	air line pinched or disconnected	replace or re-connect air line
	defective pressure switch	test / replace pressure switch
	clogged air line	clean air line
	defective control valve in panel	replace control valve

TROUBLESHOOTING

Problem	Probable Cause	Corrective Action
continuous airflow from controller relief port	head unloaders connected to other devices in addition to controller outlet line	verify unloader connection directly to controller
	defective control valve in panel	replace control valve
compressor motor runs continuously	inlet and unloader lines are reversed	verify inlet / outlet pressure lines
	defective pressure switch	test / replace pressure switch
	clogged control valve in panel	replace control valve
	water in system	clean air lines
	defective logic board	replace logic board
	air leak	check systems for air leaks and correct

QUINCY DO-ALL SIMPLEX COMPRESSOR CONTROLLER

Quincy Part No.	Input Voltage	Features
114837-115 114837-230	115V-60 Hz-1 phase 230V-60 Hz-1 phase	· Adjustable pressure switch (70 to 200 psi cutout pressure approximately 25 psi fixed differential) · Hour meter · 5 second delay unloaded start and unloaded coast to stop · 20 second delay emergency shut down circuit · Low oil pressure shut down switch (prewired to DIN-connector with a 6 ft. lead wire) · Fault light indicator · Unload run timer (adjustable 4 to 20 minutes) · Liquid filled pressure gauge (0 to 300 psi) · On/Off rocker switch · Start/Stop, Auto/Dual rocker switches · Extra fuse and allen wrench for pressure adjustment included
115V Deluxe Model 114837-115DX	115V-60Hz-1 phase	· Includes all of the features of the standard model plus: · Remote alarm output (24 VDC) · Drain solenoid valve with strainer (prewired to DIN connector with 6 ft. lead wire) - includes adjustable timer (5 to 20 seconds drain interval) and push to test button - 115V solenoid (drain operates at input voltage)
230V Deluxe Model 114837-230DX	230V-60 Hz-1 phase	· Includes all of the features of the standard model plus: · Remote alarm output (24 VDC) · Drain solenoid valve with strainer (prewired to DIN connector with 6 ft. lead wire) - includes adjustable timer (5 to 20 seconds drain interval) and push to test button - 230V solenoid (drain operates at input voltage)

REPAIR PARTS

Quincy Part No.	Description	Quincy Part No.	Description
114837-001RP	pressure gauge	114837-009RP	3-way solenoid valve
114837-002RP	hour meter	114837-010RP	pressure switch
114837-003RP	On/Off switch	114837-011RP	front enclosure panel
114837-004RP	Start/Stop switch	114837-012RP	back enclosure panel
114837-005RP	knob, Unloaded Time	114837-013RP	electric cable, starter
114837-006RP	drain interval switch	114837-014RP	electric cable, power in
114837-007RP	remote alarm leads	114837-015RP	6 amp fuse (box of 5)
114837-008RP	circuit board		

Quincy Service is always near. There are authorized Quincy Distributors located throughout the United States & Canada that stock genuine Quincy parts & accessories for a wide range of Quincy products.

Quincy Service specialists are factory trained and will help keep you in business. Call for Authorized Quincy Service.

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True Blue Reliability™

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Rotary / Vacuum / Systems: 334.937.5900
Nearest Distributor: 888.424.7729
E-mail: trueblue@quincycompressor.com
Discover: www.quincycompressor.com

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