

Operation and Maintenance Manual
for the
ACS-517B
Air Compressor System
(UPGRADE 2014)



Thunder Scientific Corporation[®]

623 Wyoming Blvd. SE ✚ Albuquerque, New Mexico 87123-3198
Ordering: (800) 872.7728 ✚ Tel: (505) 265.8701 ✚ FAX: (505) 266.6203

www.thunderscientific.com

Copyright © 2014 by Thunder Scientific Corporation, All Rights Reserved

ACS Operation and Maintenance Manual

Document Edition – 06

April 9, 2014

THUNDER SCIENTIFIC® is the registered trademark of Thunder Scientific Corporation.

All the information provided in this document is correct and true at the time of publication.
Thunder Scientific Corporation reserves the right to change any technical data without notice.

WARNING

To ensure the safety of operating personnel, and to avoid damage to this equipment:

DO NOT operate this unit without a properly grounded, properly polarized power cord.
DO NOT connect this unit to a non-grounded, non-polarized outlet.

WARNING

HIGH VOLTAGE

is used in the operation of this equipment.

SEVERE INJURY OR DEATH

may result if personnel fail to observe safety precautions.
Before working inside the equipment, turn power off and disconnect power cord.

WARNING

HIGH TEMPERATURES

exist in this equipment.

FIRE and SEVERE BURNS

may result if personnel fail to observe safety precautions.

This Page Intentionally
Left Blank

TABLE OF CONTENTS

1	INTRODUCTION	2
2	SPECIFICATIONS and ENVIRONMENTAL CONDITIONS	2
	2.1 Specifications	2
	2.2 Environmental Conditions	2
	2.3 Warranty	2
3	SAFETY GUIDELINES	3
4	INSTALLATION	3
	4.1 Unpacking	3
	4.2 Location	3
	4.3 Hose Installation	4
	4.4 Power	4
	4.4.1 Extension Cord	4
5	COMPONENTS and CONTROLS	4
	5.1 Power Receptacle	4
	5.2 Hour Meter	4
	5.3 Outlet Pressure Regulator	4
	5.4 Outlet Pressure Gauge	4
	5.5 Air Compressor	5
	5.6 Membrane Air Dryer	5
	5.7 Safety Valve	5
	5.8 Dimensional Drawing	5
	5.9 Component Locations	6
6	GENERAL OPERATION	7
	6.1 Set-up	7
	6.2 Pressure Adjustment	7
	6.3 Shut-down	7
7	INSPECTION and MAINTENANCE	8
	7.1 Recommended Maintenance Schedule	8
	7.2 Filter Inspection and Replacement	8
	7.3 Storage Procedures	9
	7.4 Service Kit	9
8	SCHEMATICS	10
	8.1 Pneumatic Schematic	10
	8.2 Electrical Schematic	10
9	TROUBLESHOOTING GUIDE	11
10	PARTS LIST	11

1 INTRODUCTION

The ACS-517B Oil-Less Compressed Air System is designed to be used as the air supply for a Thunder Scientific Model 2500 humidity generator. The ACS-517B consists of a vibration isolated oil-less piston compressor, membrane style air dryer, and output regulator, all incorporated into a sound muffling cabinet. The ACS-517B is ideal for laboratory use because of the its high pressure capability, 100% duty cycle capability, low sound level of less than 70 decibels, and long service life.

2 SPECIFICATIONS and ENVIRONMENTAL CONDITIONS

2.1 Specifications

Voltage/Frequency 60Hz: 115/230/60/1
Voltage/Frequency 50Hz: 110/220/240/50/1
Pressure Rating (MAWP): 165 psiG
Pressure Dew Point..... approximately 0 °C at 165 psiG
Duty Cycle: 100%
Physical Dimensions: ... 28.875 w" x 16.125 d" x 12.89 h" (73.5 cm x 40.9 cm x 32.7 cm)
Dry Weight: 100 lbs.

2.2 Environmental Conditions

Operating Temperature: 15 to 30 °C
Storage Temperature: > 0 to 50 °C
Humidity: 5 to 90% Non-condensing

2.3 Warranty

Thunder Scientific Corporation (TSC) warrants this product to be free of defects in material and workmanship under normal use and service when operated within the specified design limitations for a period of 90 days from date of shipment or 2000 operating hours, whichever comes first. TSC's obligation under this warranty shall be limited to the following: the Product is returned to TSC with transportation charges prepaid and that TSC's examination reveals the Product to be defective, TSC, at its option, shall repair or replace at TSC's plant, any part or parts of the Product which is or are defective. This warranty shall not apply to any Product that has become damaged or inoperative because of ordinary wear, misuse, cold, heat, rain, excessive humidity, freeze damage, use of improper chemicals, negligence, accident, failure to operate the product in accordance with the instructions provided in the Owners Manual(s) supplied with the product, improper maintenance, the use of accessories or attachments not recommended by TSC or unauthorized repair or alterations.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, WHETHER EXPRESS OR IMPLIED, AND ALL OTHER LIABILITIES AND OBLIGATIONS ON THE PART OF TSC; TSC SHALL NOT BE LIABLE FOR ANY INCIDENTAL, INDIRECT OR CONSEQUENTIAL LOSS, DAMAGE, OR EXPENSE THAT MAY RESULT FROM ANY DEFECT, FAILURE OR MALFUNCTION OF THE PRODUCT.

All warranties; express or implied, with respect to any device or component not manufactured by TSC but incorporated into its Product are the responsibility of the original manufacturer and shall not affect or apply to TSC.

3 SAFETY GUIDELINES

All compressed gases, including air, can be dangerous. Know and follow all safety rules when using compressed air and especially when disconnecting and venting compressed air lines.

Always operate the ACS-517B system in a clean, dry, well ventilated area, free of combustible materials, or solvent vapors. Operate the ACS-517B in an open area at least 12 inches away from any wall or obstruction that would restrict the flow of fresh air to the ventilation openings. Restricting any of the ACS-517B housing openings will cause serious overheating leading to probable failure or possible fire.

Your ACS-517B system is powered by electricity. Like any other electrically powered device, if not used properly it may cause electric shock. Never operate in wet conditions and never operate with cover removed. Failure to provide adequate grounding could result in serious injury or death from electrocution. Make certain that the electrical circuit to which the ACS-517B is connected provides proper electrical grounding, correct voltage and adequate fuse protection.

Attempting to operate the ACS-517B with damaged or missing parts or attempting to repair the ACS-517B with protective cover removed can expose you to moving parts and can result in serious injury. Any repair required should be performed by authorized personnel. Repairs attempted by unqualified personnel can result in serious injury or death by electrocution.

The compressed air directly from the ACS-517B is not safe for breathing, and should never be used to supply air for human consumption. The dried air from a membrane dryer will contain less oxygen than normal air and under some conditions the dried air will not meet breathing air standards for oxygen content. The air stream may also contain carbon monoxide, toxic vapors, or solid particles. Breathing these contaminants can cause serious injury or death.

This ACS-517B can fall from a table or workbench causing damage to the compressor and could result in serious injury. Always operate the ACS-517B in a stable secure position to prevent accidental movement of the unit.

Refer to attached TA-5172 Piston Pump Operating and Maintenance Manual for additional specifications, service instructions, safety guidelines, hazard and warning information.

4 INSTALLATION

4.1 Unpacking

Unpack the ACS-517B carefully and inspect it for any damage that may have occurred during shipment. If there is shipping damage, notify the carrier immediately. Verify that the power cord, air hose, and manual are present. If possible, save shipping container for future use.

4.2 Location

Locate the ACS-517B in a clean, dry and well ventilated area. The system should be located at least 12 inches away from the wall or other obstructions that will restrict the flow of air to the ventilation openings. The compressor enclosure is designed to allow for proper cooling; therefore ventilation openings must remain unrestricted to maintain proper operating temperature.

4.3 Hose Installation

Connect the air hose via the quick connect fitting to the air tank assembly. The other end of hose is connected to the air outlet of the ACS-517B compressor system. Open the ball valve on the air tank before starting the system.

4.4 Power

The ACS-517B is equipped with a power receptacle and cord having a grounding wire with an appropriate grounding plug. The plug must be used with an outlet that has the same configuration as the grounded plug and has been installed and grounded in accordance with all local codes and ordinances.

Power of the appropriate voltage, frequency, and current capacity, is applied via power cord to the ACS-517B power receptacle.

4.4.1 Extension Cord

If an extension cord must be used, be sure it is a 3-wire extension cord that has a 3-blade grounding plug, and a 3-slot receptacle that will accept the plug on the ACS-517B and is 14 gauge or larger and no longer than 50 feet.

5 COMPONENTS and CONTROLS

5.1 Power Switch

The Power Switch (CBS1) allows power to be turned on or off at this location independent from the 2500 generator. The Power Switch also has a built-in circuit breaker.

5.2 Hour Meter

The Hour Meter (HM1) tracks total run time of the ACS-517B air compressing system.

5.3 Outlet Pressure Regulator

The Output Pressure Regulator (REG) controls the pressure available at the ACS-517B outlet which is indicated on the pressure gauge located on the 2500's cart. Turn the 9/32" (7mm) adjustment shaft clockwise to increase pressure and counterclockwise to decrease pressure.

Note: Pressures higher than 165 psi should be avoided. Higher pressures will be indicated by the "popping off" of the compressor safety valve.

Note: Adjustment may be necessary after one hour of run time to keep the indicated pressure at 165 psi.

5.4 Outlet Pressure Gauge

Note: If you have the Outlet Pressure Gauge (G1) it indicates the regulated pressure available at the outlet of the ACS-517B air compressing system. This pressure is controlled by the outlet pressure regulator.

5.5 Air Compressor

The Oil-less Air Compressor (COMP1) provides a maximum pressure of 165 psiG at a flow rate of 30 liters per minute or less.

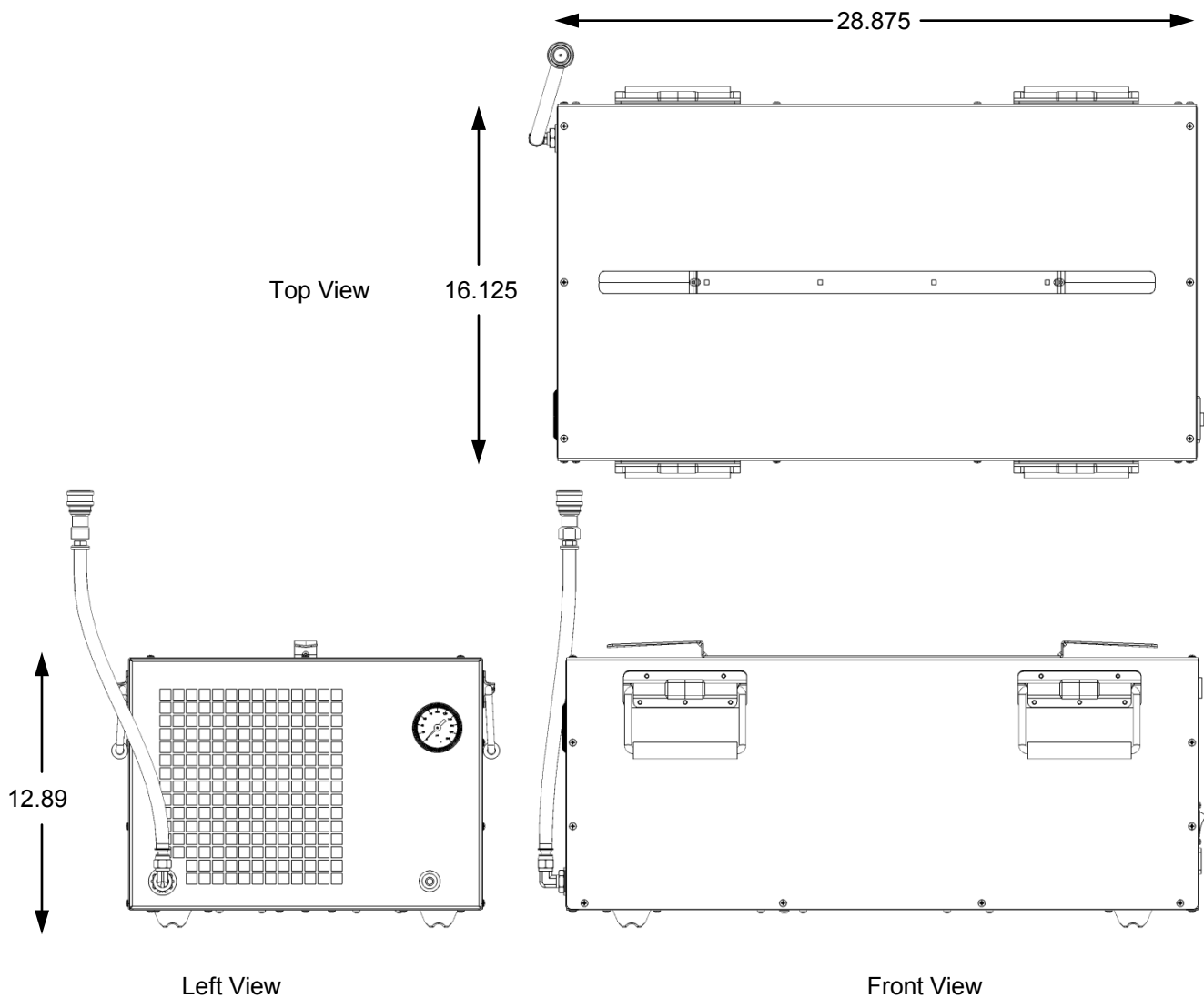
5.6 Membrane Compressed Air Dryer

The Membrane Compressed Air Dryer (AD1) is located after the air compressor and is specifically designed to remove water vapor from the compressed air stream. Typical pressure dew points of 0 °C or less are maintained.

5.7 Safety Valve

The Safety Valve (mounted on compressor) protects the system against over pressure. Over pressure is indicated by the "popping off" sound of the safety valve.

5.8 Dimensional Drawing



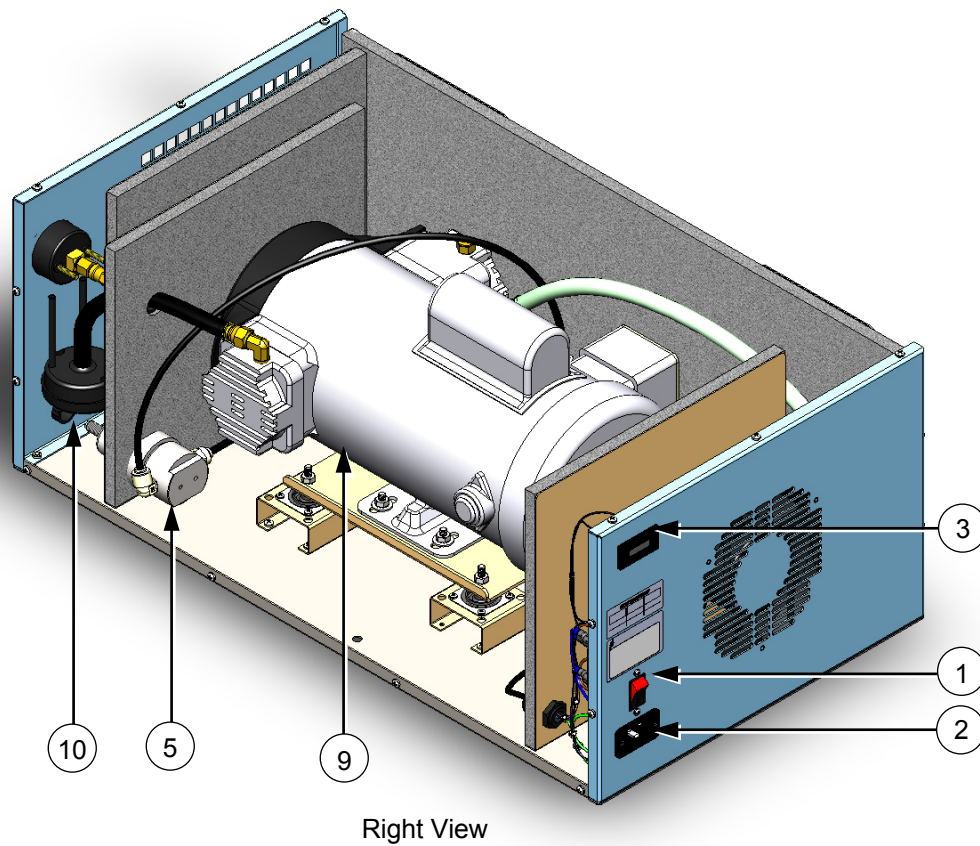
5.9 Component Locations

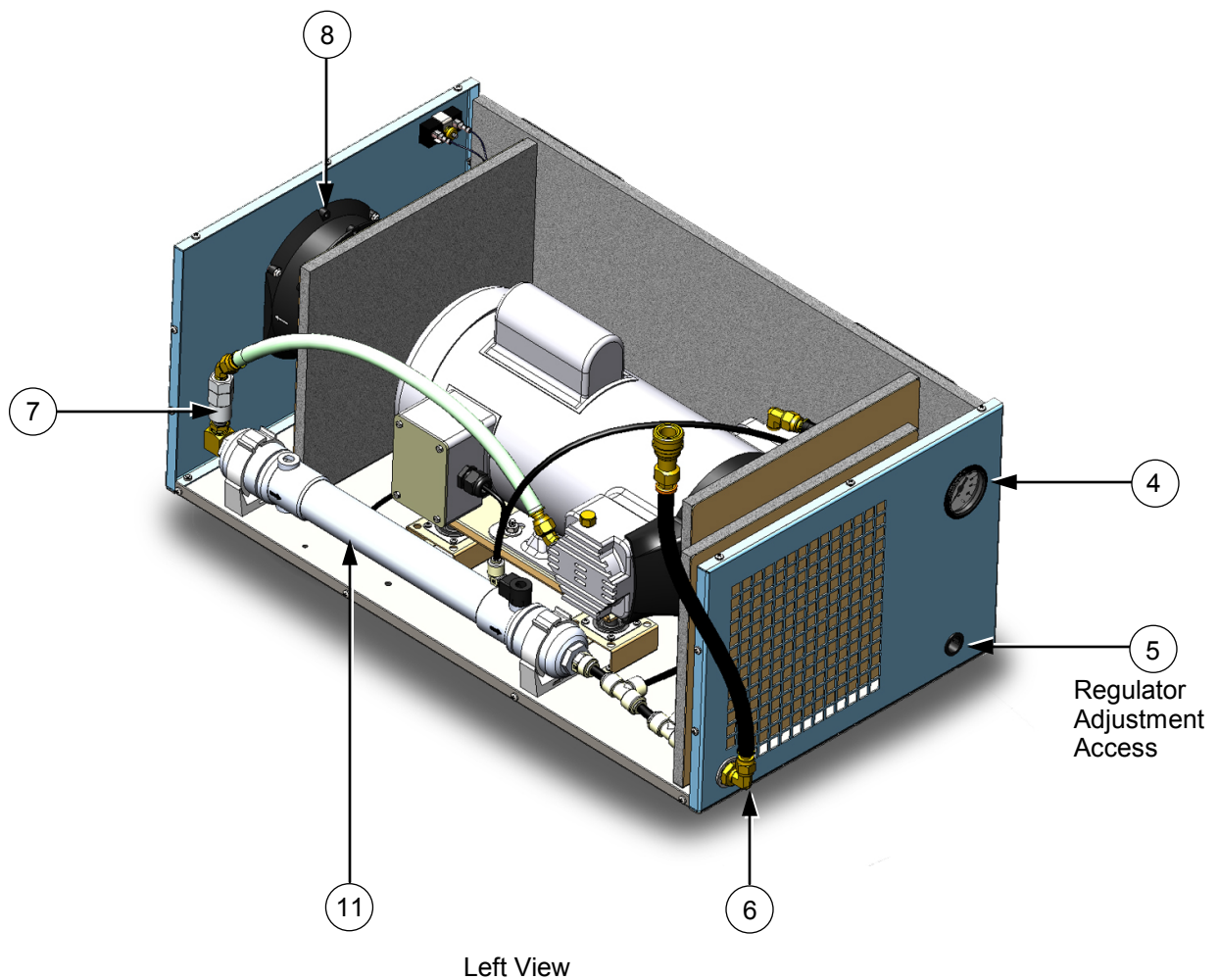
ITEM	DESCRIPTION
------	-------------

- | | |
|----|-------------------------|
| 1. | On / Off Switch (CBS1) |
| 2. | Power Receptacle (RCP1) |
| 3. | Hour Meter (HM1) |
| 4. | Pressure Gauge (G1) |
| 5. | Regulator (REG) |
| 6. | Air Outlet |

ITEM	DESCRIPTION
------	-------------

- | | |
|-----|--------------------------|
| 7. | Particulate Filter (LF2) |
| 8. | Circulation Fan (CF1) |
| 9. | Air Compressor (COMP1) |
| 10. | Air Intake Filter (LF1) |
| 11. | Air Dryer (AD1) |





6 GENERAL OPERATION

6.1 Start-up

Be sure the "Hose Installation" of paragraph 4.3 has been completed before proceeding and that the 2500 utility cart inlet valve has been opened.

Insert the power cord into the ACS-517B power receptacle. With the ACS-517B power switch in the off position, plug the power cord into an AC mains outlet of the appropriate voltage, frequency, and current capacity.

Apply power to the ACS-517B using the On/Off power switch. The compressor will start and the pressure gauge will indicate approximately 165 psiG.

6.2 Pressure Adjustment

If pressure adjustment is required adjust the output pressure to 165 psiG, during no-flow conditions, by turning the 9/32" (7mm) adjustment shaft on the regulator clockwise to increase pressure and counterclockwise to decrease pressure.

6.3 Shut-down

Disconnect power to the ACS-517B using the On/Off power switch. Slowly open the air tank drain valve and vent the tank pressure as indicated by the outlet pressure gauge.

Important: All pressure MUST be vented before disconnecting the air supply hose or personal injury may result.

7 INSPECTION and MAINTENANCE

7.1 Recommended Maintenance Schedule

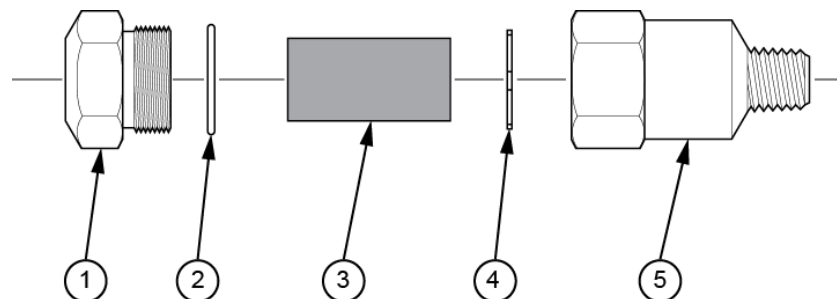
<u>Periodic Maintenance</u>	<u>Hours 100% Duty Cycle</u>
Initial Inlet/Outlet Filter Inspection To establish service period	1st 500
Minor Service Kit	1,500
Major Pump Rebuild or Replacement	3,000

7.2 Filter Inspection

The Intake Filter, Outlet Filter, and Regulator Muffler require periodic inspection. Initial inspection is suggested at 500 hours; then user should determine the frequency thereafter. Most problems can be prevented by keeping the intake filter and particulate filter clean. A dirty intake filter will decrease pump performance and can decrease pump life.

Warning: Disconnect power and be sure all pressure has been vented before service!

1. Intake Filter (LF1)
 - a. Remove the snap-fit cover.
 - b. Clean felt filter using air or vacuum.
 - c. Replace snap-fit cover.
2. Particulate Filter (LF2)
 - a. Remove the hose by turning the flare nut counterclockwise.
 - b. Unscrew the adapter (1) by turning counterclockwise.
 - c. Remove filter (3) and clean with water and blow dry or replace.
 - d. Inspect bowl (4 & 5) and seal (2). If dirty, clean by wiping the bowl with a soft dry cloth.
 - e. Insure seal is clean and in place then re-install filter and rotate the adapter clockwise until snug.
 - f. Re-install hose flare nut using a backup wrench turning clockwise.



Particulate Filter (LF2)

7.3 Storage Procedures

Proper shutdown procedures must be followed to prevent pump damage. Failure to do so may result in premature pump failure. The non-lubricated compressor is constructed of ferrous metals and/or aluminum which are treated for corrosion protection but are still subject to possible rust and corrosion when pumping condensable vapors such as water.

Follow the steps below to assure correct shutdown and storage between use:

1. **NEVER** oil this non-lubricated compressor as damage will result.
2. For long term storage of the ACS-517B, disconnect the air hose at outlet and apply power allowing the compressor to run "open" for at least five minutes. After five minutes remove power and plug/cap outlet to prevent contaminants from entering. The ACS-517B is now ready for storage.

Warning: All pressure **MUST** be vented before disconnecting air supply hose!

7.4 Service Kit

Refer to Thomas TA series operating and maintenance manual for parts and procedures.

8 SCHEMATICS

8.1 Pneumatic Schematic

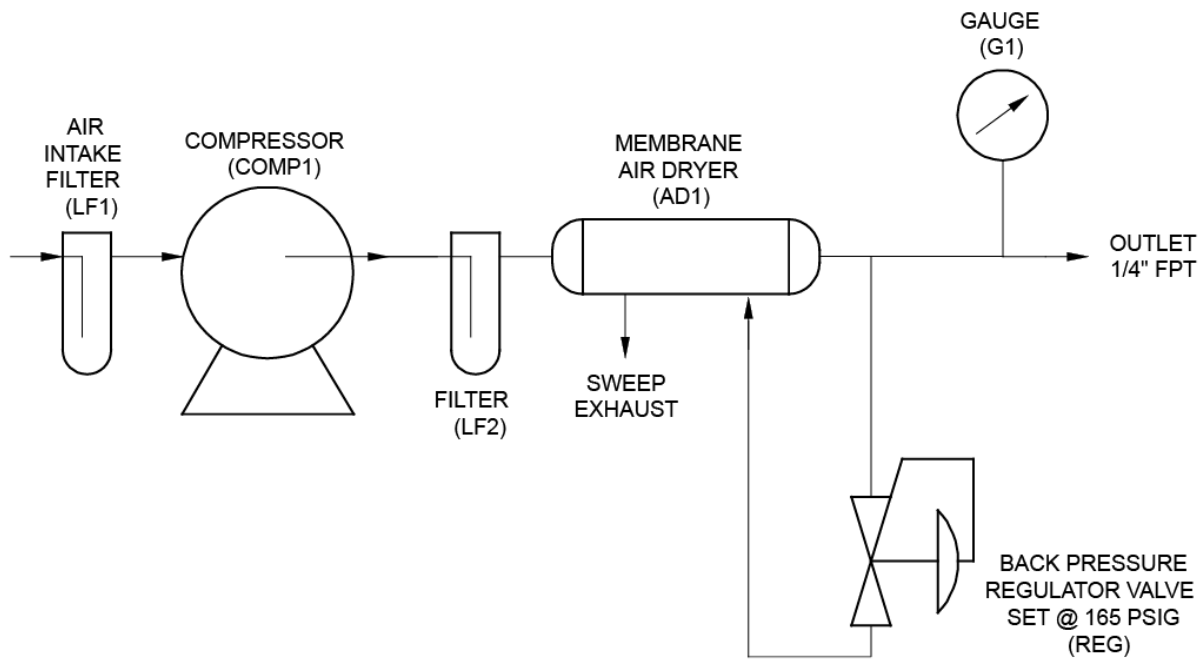


Figure 1-1

8.2 Electrical Schematic

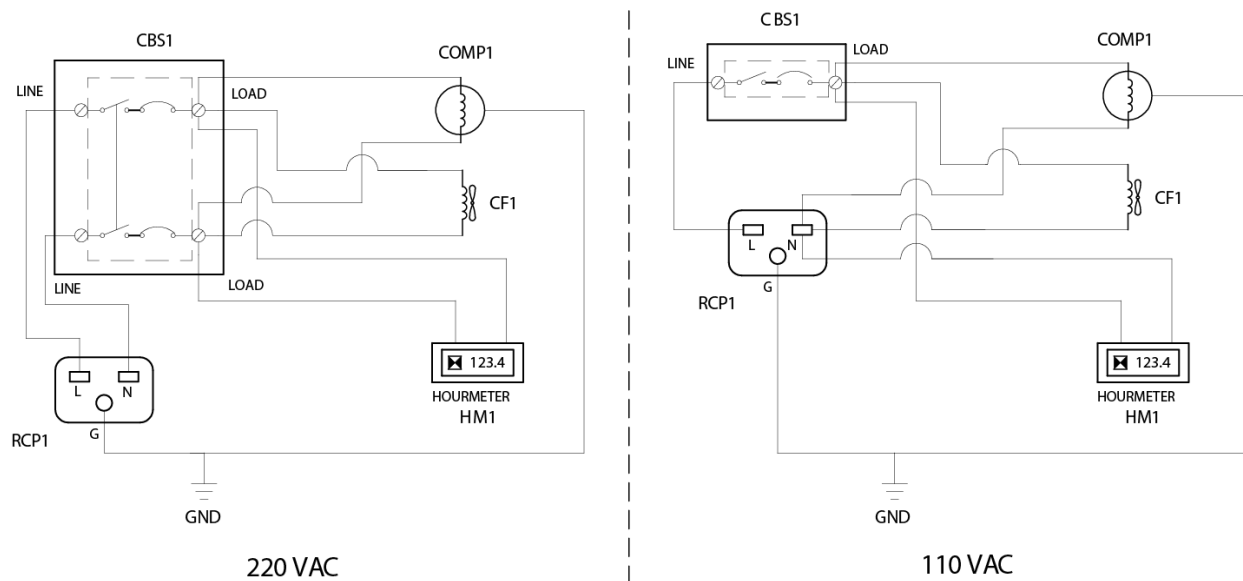


Figure 1-2

9 TROUBLESHOOTING GUIDE

Possible Reason	No / Low Pressure	High Pressure	Excessive Noise	Over Heating	Won't Start
Dirty Intake Filter	X				
Hose Leak	X				
Regulator Adjustment	X	X	X		
Worn or Damaged Compressor	X		X		X
Worn or Damaged Fan			X	X	
Safety Valve Leak	X				
Safety Valve "Popping Off"		X	X		
Plugged Pressure Line	X				X
Low Voltage				X	X
Blocked Ventilation Opening	X			X	X
High Outlet Pressure					X
Overheating		X			X

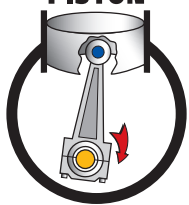
10 PARTS LIST

Find #	Qty	Description	Part Number
CBS1	1	Circuit Breaker Switch	BTPWRSW-R
			* PWRSW-2P
HM1	1	Hour Meter	HRMETERACS
COMP1	1	Compressor, 115/230/60/1	TA5172/60
COMP1	1	Compressor, 110/220/240/50/1	* TA5172/50
G1	1	Gauge, Pressure	G1X510
REG	1	Regulator, Back Pressure	JBPREG
AD1	1	Air Dryer, Membrane	MD1015
CF1	1	Fan, Circulation	MR2B3
			* MR77B3
LF1	1	Filter Element	C87713
LF2	1	Filter Element	G6B225

* Asterisk Indicates High Voltage Parts

This Page Intentionally
Left Blank

**ARTICULATING
PISTON**



TASKAIR™ (TA) SERIES

1/2 HP

MODELS

TA-5172 (270078)

TA-5172 (270073)



TA-5172

FEATURES

- Oil-less design
- Permanently lubricated and sealed bearings
- Cast iron cylinders
- PTFE piston rings and skirts
- Long, service free life
- Field service capability
- Totally enclosed motor
- Low vibration
- Quiet Operation
- Low profile
- Fifty-micron inlet filter(s)

Thomas Division is an ISO 9001 registered company

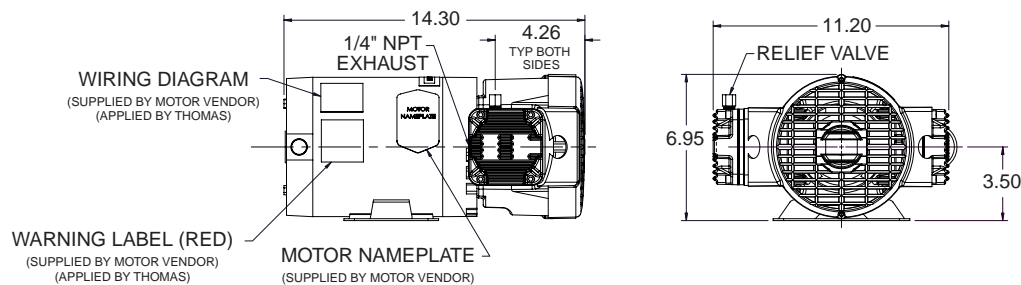
THOMAS
A Gardner Denver Product

1/3, 1/2, 3/4 TA Performance Data

MODEL NUMBER	TA-4172		TA-5172		TA-5172		TA-5172		TA-6172		TA-6172	
MANUFACTURING CODE	270072		270073		270076		270078		270080		270082	
HEAD CONFIGURATION	Pressure		Pressure		Pressure		Pressure		Pressure		Pressure	
NUMBER OF CYLINDERS	2		2		2		2		2		2	
PRESSURE	Flow @ 115/60		Flow @ 115/60		Flow @ 230/60		Flow @ 220/50		Flow @ 115/60		Flow @ 230/60	
cfm @ psi	l/min @ bar											
psi	bar		cfm	l/min	cfm	l/min	cfm	l/min	cfm	l/min	cfm	l/min
0	0		1.40	39.6	1.80	50.9	1.80	50.9	1.43	40.4	2.40	67.9
10	1.0		1.38	38.5	1.79	50.4	1.79	50.4	1.42	39.9	2.39	67.1
20	2.0		1.35	37.4	1.78	50.1	1.78	50.1	1.41	39.6	2.37	66.8
25	3.0		1.33	36.5	1.77	49.5	1.77	49.5	1.40	39.2	2.36	66.1
30	5.0		1.32	34.4	1.77	48.0	1.77	48.0	1.40	38.4	2.36	64.9
35	7.0		1.31	32.5	1.76	46.5	1.76	46.5	1.39	37.3	2.35	63.5
40	8.0		1.30	31.9	1.75	45.2	1.75	45.2	1.39	36.7	2.34	62.2
50	9.0		1.27	31.1	1.75	44.4	1.75	44.4	1.38	35.9	2.33	61.4
60	10.0		1.25	30.0	1.72	43.3	1.72	43.3	1.37	34.8	2.31	60.3
70	11.0		1.22		1.70		1.70		1.36		2.30	
80	12.0		1.20		1.69		1.69		1.35		2.28	
90			1.18		1.67		1.67		1.34		2.26	
100			1.15		1.65		1.65		1.32		2.25	
110			1.14		1.62		1.62		1.31		2.22	
120			1.12		1.61		1.61		1.30		2.21	
130			1.10		1.60		1.60		1.28		2.20	
140			1.08		1.58		1.58		1.26		2.18	
150												
160												
175												
MAX. PRESSURE	175 psi	12 bar	175 psi	12 bar	175 psi	12 bar	175 psi	12 bar	175 psi	12 bar	175 psi	12 bar
MAX. AMBIENT AIR TEMP.	(40°C)	104°F	(40°C)	104°F	(40°C)	104°F	(40°C)	104°F	(40°C)	104°F	(40°C)	104°F
MIN. AMBIENT START TEMP.	(0°C)	32°F	(0°C)	32°F	(0°C)	32°F	(0°C)	32°F	(0°C)	32°F	(0°C)	32°F
MAX. RESTART PRESSURE	175 psi	12 bar	175 psi	12 bar	175 psi	12 bar	175 psi	12 bar	175 psi	12 bar	175 psi	12 bar
MOTOR VOLTAGE/FREQUENCY	115/230/60/1		115/230/60/1		190/380/50/3 208-230/460/60/3		110/220-240/50/1		115/230/60/1		190/380/50/3 208-230/460/60/3	
HORSEPOWER	1/3		1/2		1/2		1/2		3/4		3/4	
MOTOR TYPE	Capacitor Start		Capacitor Start		Polyphase		Capacitor Start		Capacitor Start		Polyphase	
CURRENT AT RATED LOAD (AMPS)	8.0 / 4.0 A		7.3 / 3.6 A		2.0 / 1.9 / .95 A		8.2 / 4.1 / 4.3 A		10.6 / 5.3 A		2.8 / 2.8 / 1.4 A	
POWER AT RATED LOAD (WATTS)	450 W		760 W		628 W		670 W		825 W		800 W	
STARTING CURRENT (LOCKED ROTOR, AMPS)	34.8 / 18.0 A		34.8 / 18.0 A		12.5 / 12.0 / 6.0 A		39.0 / 19.5 A		60.0 / 30.0 A		17.0 / 17.0 / 8.5 A	
MIN. FULL LOAD SPEED (RPM)	1725 rpm		1725 rpm		1725 / 1425 rpm		1425 rpm		1725 rpm		1725 / 1425 rpm	
THERMAL PROTECTOR	Yes		Yes		No		Yes		Yes		No	
CAPACITOR VALUE	243 mfd		324 mfd				324 mfd		378 mfd			
NET WEIGHT	45 lb.	20.4 (kg)	51 lb.	23.1 (kg)	51 lb.	23.1 (kg)	51 lb.	23.1 (kg)	56 lb.	25.4 (kg)	56 lb.	25.4 (kg)
SHIP WEIGHT	47 lb.	21.3 (kg)	51 lb.	23.1 (kg)	51 lb.	23.1 (kg)	51 lb.	23.1 (kg)	60 lb.	27.2 (kg)	60 lb.	27.2 (kg)

TA-4172

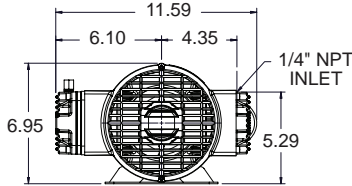
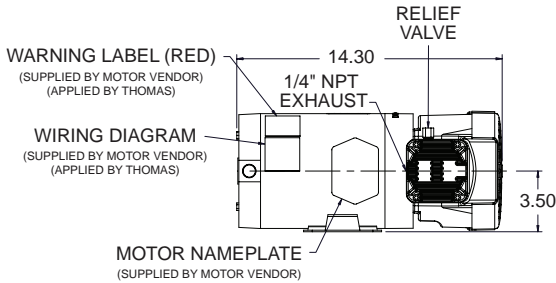
270072



Dimensions

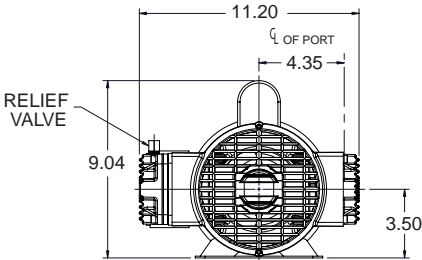
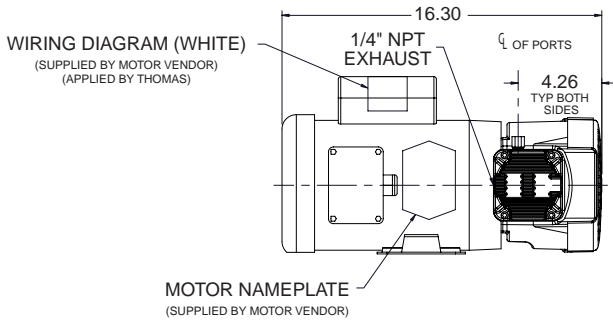
TA-5172

270073



TA-5172

270078



Worldwide Manufacturing and Distribution

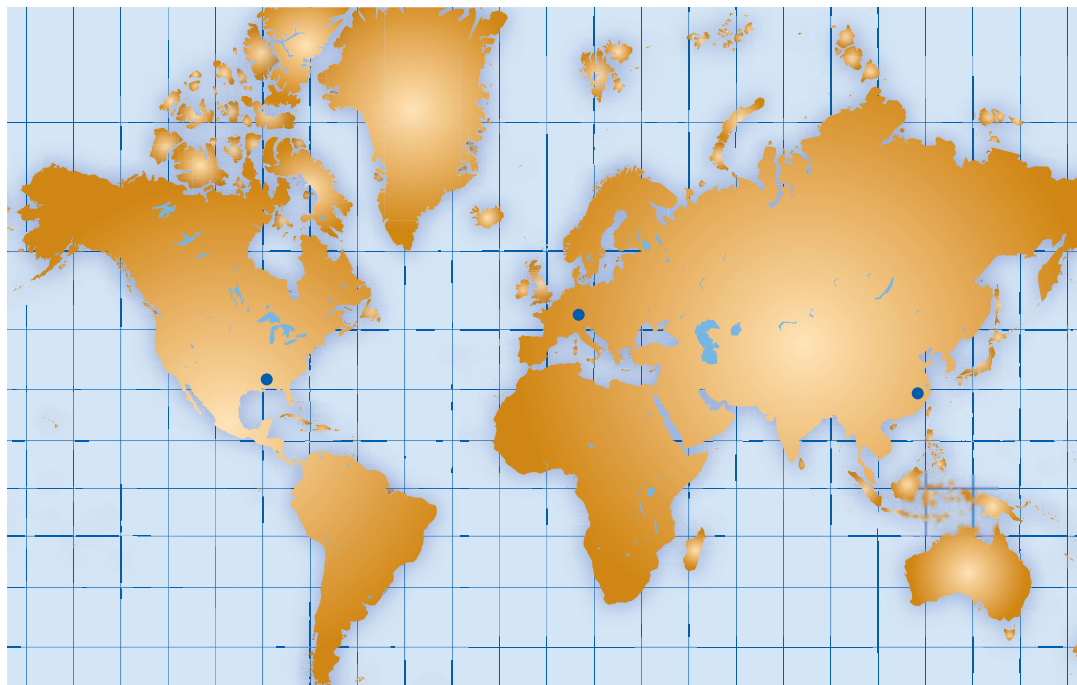
SALES OFFICES

Australia
Austria
Brazil
China
Czech Republic
Denmark
France
Germany
Hong Kong
Italy
Japan
Korea
Netherlands
New Zealand
Sweden
Switzerland
United Kingdom
United States

MFG. LOCATIONS ●

Memmingen, Germany
Monroe, LA, USA
Wuxi, China

Representatives in other
countries see
www.gd-thomas.com



gd-thomas.com

PUMP AND COMPRESSOR SOLUTIONS FOR OEMs WORLDWIDE

The information presented in this material is based on technical data and test results of nominal units. It is believed to be accurate and reliable and is offered as an aid to help in the selection of Thomas products. It is the responsibility of the user to determine the suitability of the product for the intended use and the user assumes all risk and liability in connection therewith. Thomas does not warrant, guarantee or assume any obligation or liability in connection with this information.

Models presented in this catalog are representative of the product family. Photos of products pictured in this catalog do not necessarily represent a specific model number. To obtain further information for custom options, contact your local Thomas office.

Printed in USA
Form No. 850-4006 10/13
©2011 Gardner Denver Thomas, Inc. All rights reserved.


A Gardner Denver Product

Thomas Division
1419 Illinois Avenue
Sheboygan, WI 53081 USA
Phone: +1 920 457 4891
Fax: +1 920 451 4237
www.gd-thomas.com



PNEUMOTIVE

SERVICE PROCEDURES

TA AND GH SERIES
AIR COMPRESSOR and VACUUM PUMP MAINTENANCE

COMPONENT LIFE OPERATING AT CONTINUOUS DUTY & MAXIMUM PRESSURE

Life of the rings and skirts are difficult to predict due to many conditions, which directly influence wear. Some of these conditions may include ambient air temperature, air cleanliness, operating pressure, duty cycle, maintenance of filters, etc.

Because of these various factors it is appropriate to generalize on component wear life and choose some conservative estimates for most standard applications.

With these conditions in mind, we recommend for optimum performance, the following preventative maintenance schedule (optimum performance is based on only a 15—20% decrease in calculated performance).

RECOMMENDED MAINTENANCE SCHEDULE FOR GH PISTON UNITS UNDER ¾ HORSEPOWER		
MAINTENANCE	HOURS Cont. Duty Maximum Pressure	TIME Based on 33% Duty Cycle
Minor Service Kits Piston Rings & Springs, Skirts, Etc.	1,500 Hours	1.5 Years
Major Replacement Kit Piston & Rod Assemblies	3,000 Hours	3 Years

REPLACEMENT PARTS

Model	TA	TA 1 CYL & LGH	TA-7102
Intake Filter Assembly	C85674	C85676	C89674
Filter Element	C85679	C85681	C85679
Valve Service Kit	C85485-P	C85485-P	C85512-P
Grill	C85663	N/A	C85662
Fan	C85382	S62760	C85382
Ring Service Kit	C87860-P	C87860-P	C85497-P
DC Brush Kit	N/A	C85517 (Qty. 2)	N/A
Handle	N/A	C87125	N/A

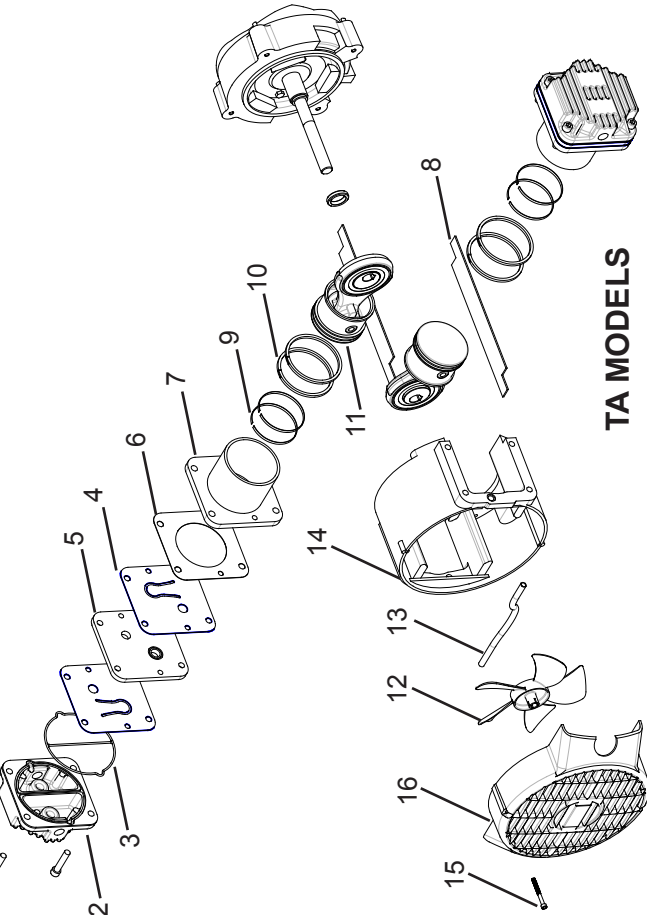
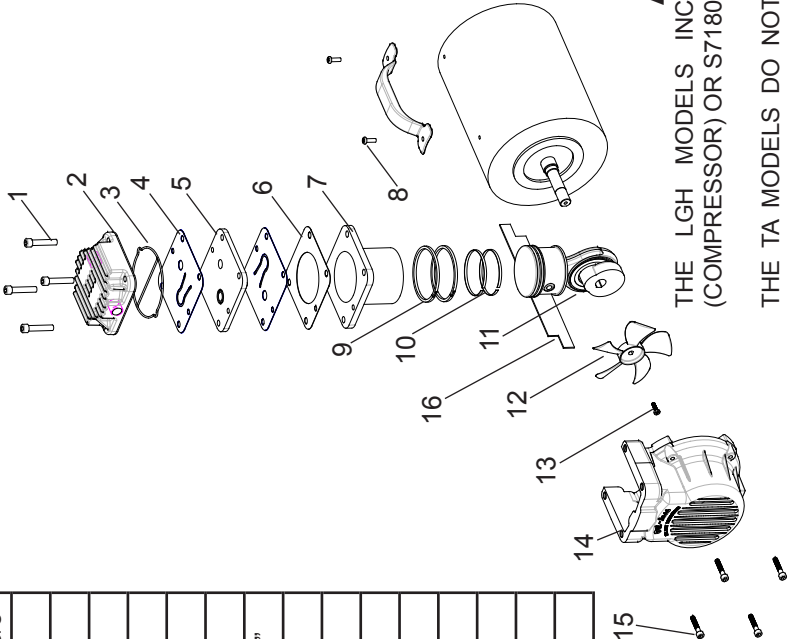
TA 1 CYLINDER AND LGH MODELS

NOTE: TEFLON TAPE IS NOT RECOMMENDED ON INTAKE FILTERS AND WILL VOID WARRANTY

Item #	Description
1	Head Screw 1/4-20X1-3/8"
2	Cylinder Head
3*	O-ring
4*	Reed Valve
5*	Valve Plate
6*	Cylinder Gasket
7	Cylinder Sleeve
8	Handle Screw 8-32x3/8"
9**	Piston Rings
10**	Piston Ring Springs
11	Connecting Rod Assy
12	Fan
13	Fan Screw 10/32x3/8"
14	Crankcase
15	Screw 10-32x1-1/2"
16**	Piston Skirt

*Included in Valve Service Kit

**Included in Ring Service Kit



TA MODELS

Item #	Description
1***	Head Screw 1/4-20X1-3/8"
2	Cylinder Head
3*	O-ring
4*	Reed Valve
5*	Valve Plate
6*	Cylinder Gasket
7	Cylinder Sleeve
8**	Piston Skirt
9**	Piston Rings
10**	Piston Ring Springs
11	Connecting Rod Assy
12	Fan
13	Internal Manifold
14	Crankcase
15	Screw 6-32x1-3/8"
16	Grill

*Included in Valve Service Kit

**Included in Ring Service Kit

***TA-6052 Head Screw 1/4-20x1-3/4"

CYLINDER HEAD NOTE: ALL TA & LGH UNITS MAY HAVE O-RING STYLE HEADS OR GASKET STYLE HEADS INSTALLED DURING THE MANUFACTURE OF YOUR COMPRESSOR. THE VALVE SERVICE KIT WILL ACCOMODATE BOTH STYLES.

DC Motor Wiring Instructions

Connect the positive (+) lead from the DC motor power supply to A1 terminal of the DC motor for correct motor rotation.

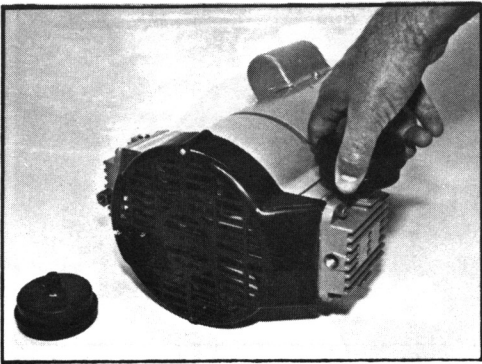
ATTENTION

THE LGH MODELS INCLUDE S71806 RUBBER BUMPER KIT (COMPRESSOR) OR S71805 SUCTION CUP KIT (VACUUM PUMP).

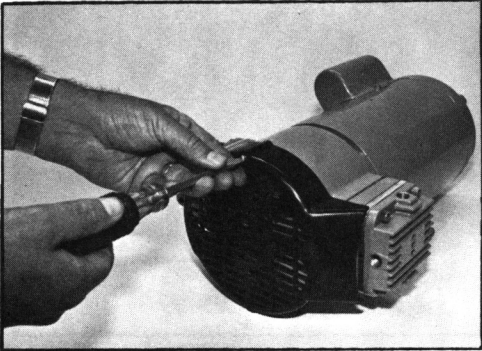
THE TA MODELS DO NOT INCLUDE VIBRATION ISOLATORS. WE RECOMMEND YOU CONTACT CUSTOMER SERVICE FOR HELP IN SELECTING THE CORRECT ISOLATOR FOR YOUR APPLICATION.

This Page Intentionally
Left Blank

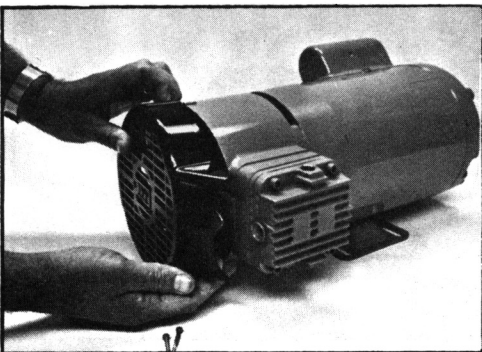
COMPRESSOR DISASSEMBLY/ ASSEMBLY



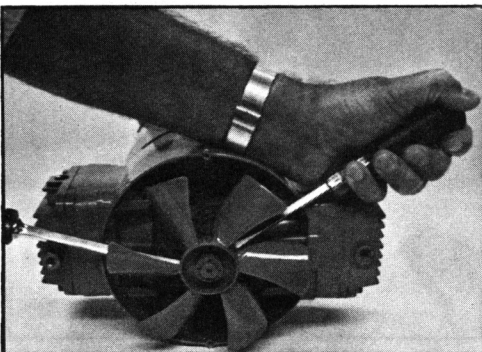
1. Remove the inlet filter assemblies. These have right-hand pipe threads and are removed by unscrewing the entire filter assembly from each cylinder head.



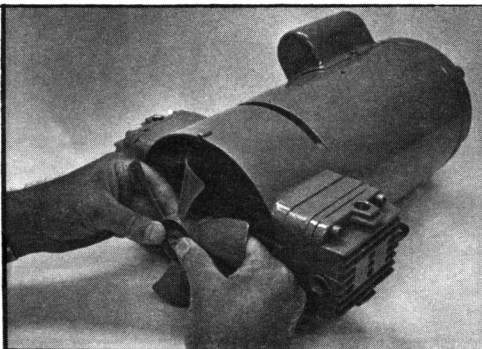
2. Next, remove the two screws which secure fan shroud to the compressor body casting.



3. Using the fingertips behind the shroud, pull shroud forward and off compressor.

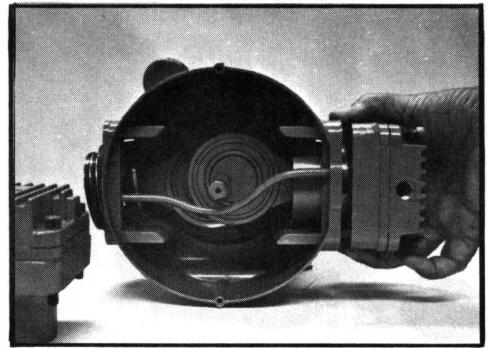


4. Remove compressor cooling fan using the two screwdrivers as shown. Apply a SLIGHT prying force behind the center back portion of the fan hub.

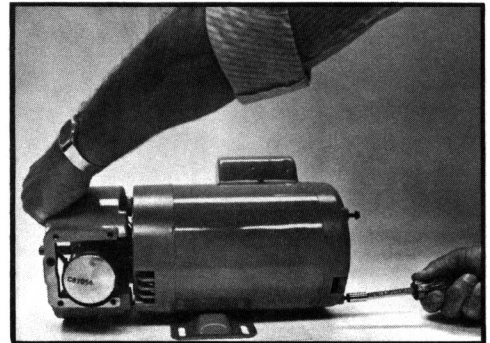


5. After establishing initial forward movement of the fan on the motor shaft, use thumbs and fingertips in wheelpuller fashion as shown to complete removal of the cooling fan.

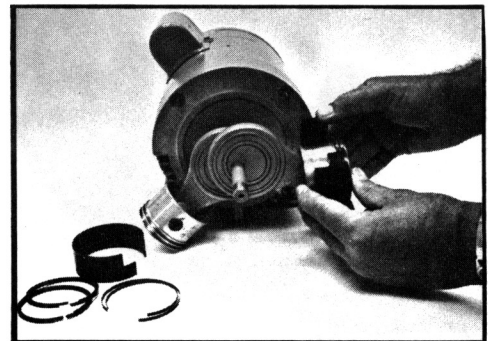
6. Using the 3/16" Allen wrench, loosen the four socket head screws securing the cylinder head, valve and cylinder sleeve assembly to the compressor body casting. Only back these screws out as far as necessary for complete thread disengagement. Grasp the entire assembly, complete with screws, and remove by sliding it out and off the piston. Repeat this process for the other cylinder.



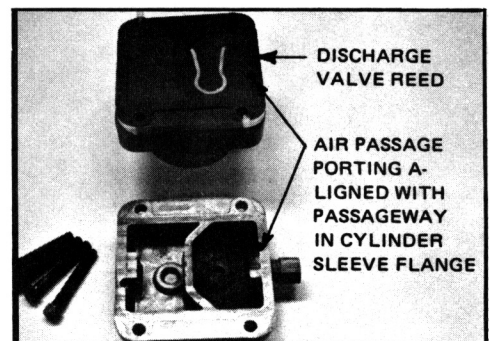
7. Remove the compressor body casting by loosening the four motor thru-bolts with the 5/16" nut driver. Complete thru-bolt removal is not required. Only loosen until thru-bolt threads are disengaged from the body casting. Should the body casting seem stuck to the mating motor endbell surface, simply tap the top center of the casting with one hand to loosen the machined fit. The body casting will then be free to pull forward and off the compressor.



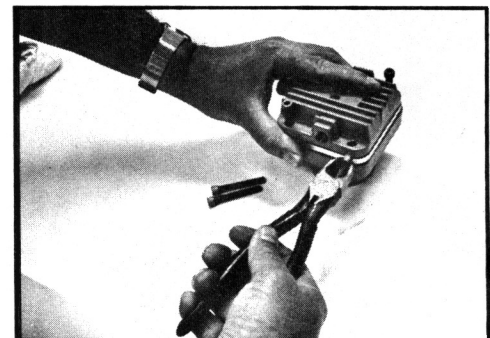
8. Remove piston rings, metal expander springs and skirts from both piston assemblies.

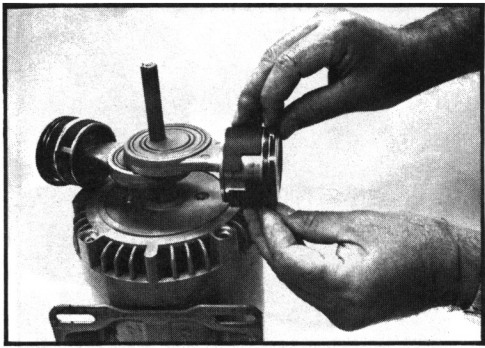


9. Remove socket head screws from cylinder head, valve and cylinder sleeve assemblies. Lift off cylinder head and remove the used valve components. If necessary, use pocket knife or razor blade to remove used gasket material. Place the new pre-assembled valve and gasket components on cylinder sleeve as shown.

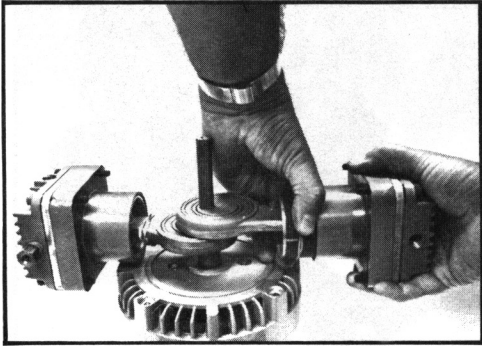


10. Place cylinder head on new valve and gasket assembly. Use two socket head screws inserted diagonally from each other to retain entire assembly position. Use wire cutters to snip and remove both plastic ties as shown.

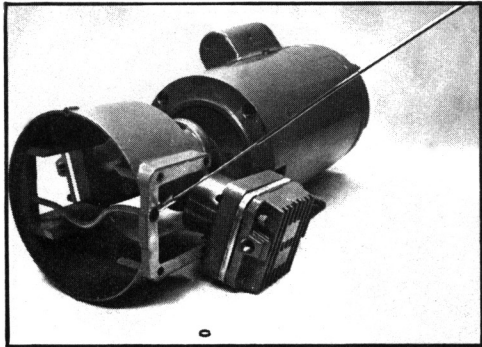




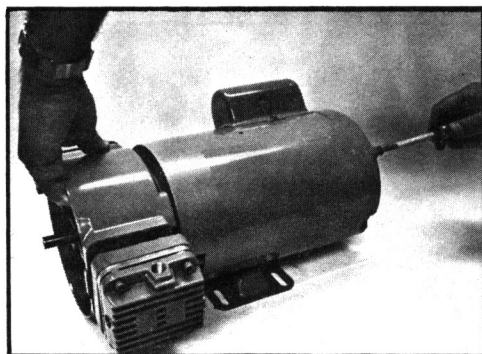
11. Next, assemble all piston components. First, install piston ring expanders in each of the piston ring grooves. Position expander gaps 180° apart. Install piston rings. Caution - rings can break if spread too far. Each ring lap joint should be approximately 180° from the corresponding expander gap. Install piston skirts. Roll form each skirt by hand to fit the piston contour. Skirts may be held in place by rubber bands.



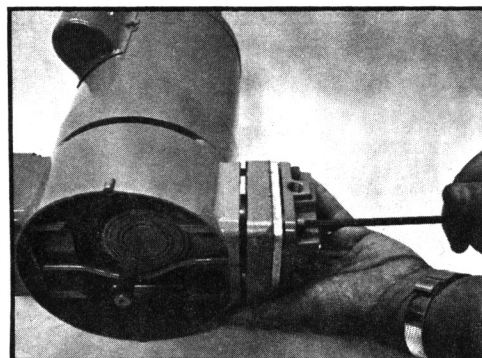
12. To start the cylinder sleeve over the first piston ring, gently compress the ring with one hand while working the leading edge of the cylinder sleeve over the part. Repeat this process on the next piston ring and the skirt. The same procedure applies for each piston and cylinder sleeve assembly as shown. Note, if rubber bands have been used for securing piston skirts, they will be forced off the piston area by this cylinder sleeve assembly step. Break rubber bands and remove from connecting rods following assembly of cylinder sleeves.



13. Replace the two air passage gaskets located on the cylinder sleeve flanges of the compressor body casting.

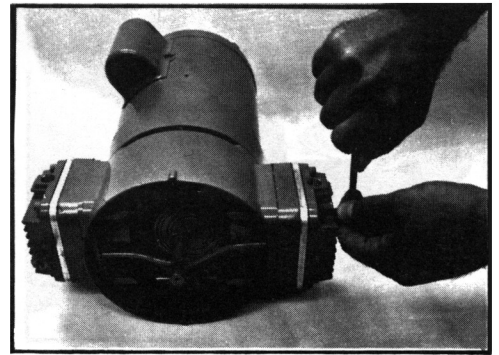


14. Install the compressor body casting by holding in place and using the 5/16" nut driver to secure the four motor thru-bolts already in place. Insure internal manifold tubing is positioned below the motor shaft.



15. Insert the remaining socket head screws in each cylinder head and sleeve assembly. Insure each assembly is positioned correctly with intake ports up and both relief valve and discharge port facing forward as shown. Using the 3/16" Allen wrench, secure both cylinder head and valve assemblies to the compressor body casting.

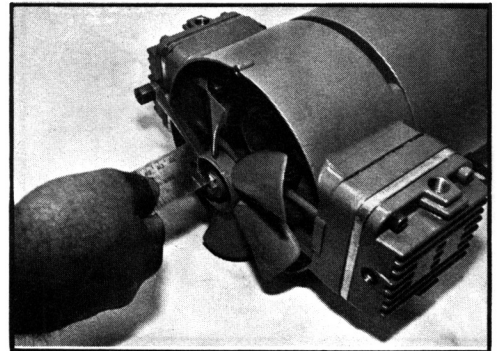
16. Tighten all eight socket head screws to insure compression of gaskets. Proper torque for tightening these screws is 8 to 10 foot pounds.



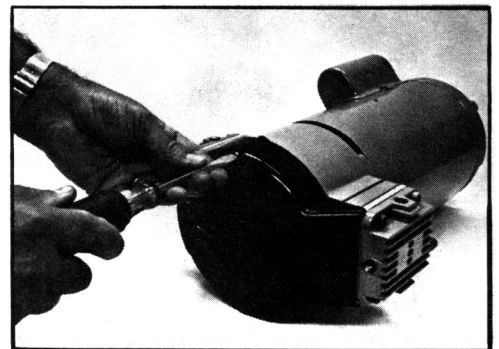
17. Next, hand install cooling fan with center hub ring facing forward. Tap fan in place as shown using hammer and 9/16" socket placed over the shaft and against the metal hub ring.



18. Fan should be tapped onto the shaft such that 1/8" of the motor shaft extends forward of the fan hub.



19. Install the fan shroud using the two # 6-32 X 1-3/8" screws.



20. Install both filter assemblies and replace both filter felt elements.
NOTE: Refer to page 2 for correct procedure used to replace filter felts.

