

Instruction Manual and Replacement Parts List

BF 100 - 6 **Bottle Fill Panel**



September 30, 2008 Special Edition, Rev. 0 Chg. 0
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MNL-093558

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⚠ WARNING ⚠

This Instruction Manual and Replacement Parts List contains safety information and instructions for the BF 100 - 6 Bottle Fill Panel.
You must read, understand and follow all safety precautions and instructions.

EDITIONS, REVISIONS AND CHANGES

- An Edition is the original or a complete rewriting of the entire Manual.
- A Revision occurs whenever a complete Section or Appendix is rewritten or added.
- A Change occurs when individual pages, drawings or tables are changed.

Special Edition; September 30, 2008

Rev.	Chg.	Date	Notes	Auth

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CHAPTER 1: INTRODUCTION

1.1 How To Use This Manual

This manual contains the operating and maintenance instructions for the Bauer Compressors, Inc. product(s) listed on the front cover.

All instructions in this manual should be observed and carried out as written to prevent damage or premature wear to the product or the equipment served by it.

If your unit is equipped with nonstandard accessories and/or options, supplemental information is normally included in other documentation; i.e. OEM Manuals or additional Bauer Manuals.

While every effort is made to ensure the accuracy of the information contained in this manual, Bauer Compressors, Inc. will not, under any circumstances be held accountable for any inaccuracies or the consequences thereof.

1.1.1 Manual Safety Notices

Important instructions concerning the endangerment of personnel, technical safety or operator safety will be specially emphasized in this manual by placing the information in the following types of safety notices.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This is limited to the most extreme situations.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTE

NOTE advise of technical requirements that require particular attention by the operator or the maintenance technician for proper maintenance and utilization of the equipment.

1.2 How to Use the Replacement Parts List

- A lozenge ◇ in the Item Number column indicates the part number for a complete assembly.
- A dagger (†) in the Qty column with or without an ellipsis (...) in the Part Number column means the part is illustrated for assembly purposes only and is not available for sale as an individual component. This part can be obtained by ordering the complete assembly.
- AR in the Qty column means that the item is cut or manufactured to the size which the customer specifies.
- A dash (—) in the Item Number column indicates that there is more than one part number applicable to the preceding Item Number.
- The letter(s) in the columns labeled Kit indicate the number of operating hours when the part is to be replaced; a = replaced every 1,000 hours, b = replaced every 2,000 hours and c= replaced every 4,000 hours.
- NS in the Item Number column indicates the part is not illustrated but is available.

When placing an order for spare parts, please provide the following information to ensure delivery of the correct parts. The model number, date of manufacture and serial number can be found of the compressor unit identification plate on the compressor unit's frame.

Information	Example
Model Number	TCOM25
Serial Number	32165
Date of Manufacture	02/2005
Quantity required	2
Part Number	N04860
Part Description	Valve

WARNING

The use of repair parts other than those included in the Bauer Replacement Parts Lists may create unsafe conditions over which Bauer has no control. Such unsafe conditions can lead to accidents that may be life-threatening, cause substantial bodily injury, and/or result in damage to the equipment. Therefore, BAUER Compressors, Inc. can bear no responsibility for equipment in which unapproved repair parts are installed.

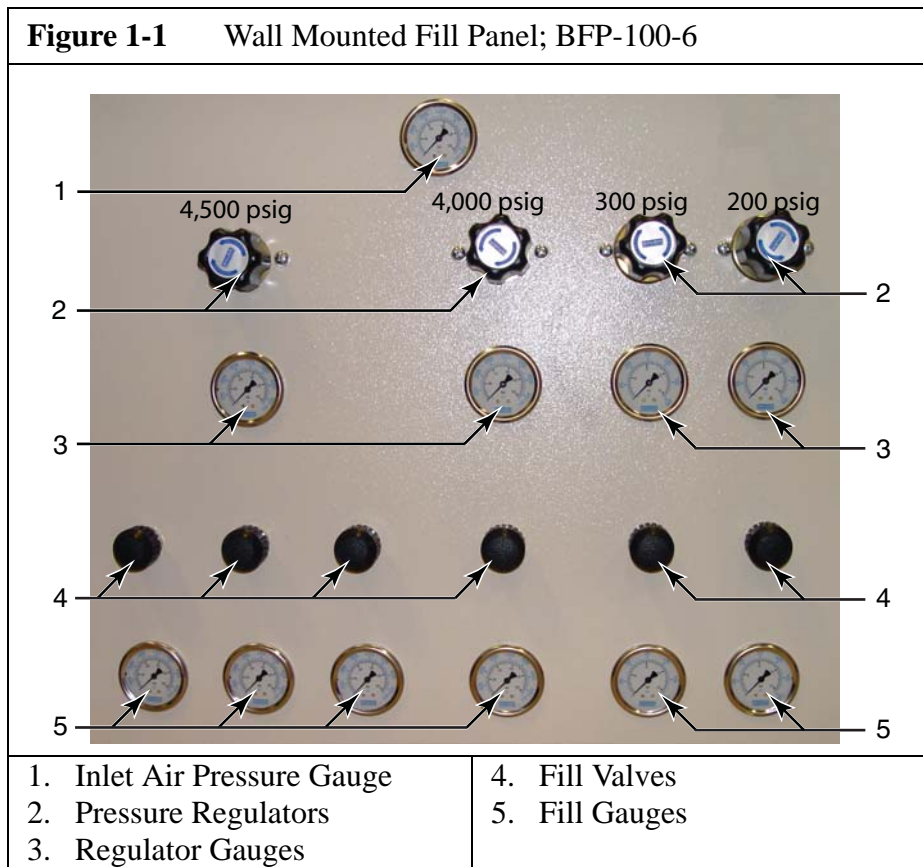
1.3 How to Use the Appendix

Information contained in the Appendix to this manual includes the following.

- The safety instructions applicable to this product. They must be read, understood and complied with prior to operating the product.
- The instructions for installing this product. They must be read, understood and complied with prior to operating the product.
- The instructions for long term storage (over 90 days) of this product.

1.4 Unit Description

The BAUER BF 100 - 6 fill station panel is used in conjunction with an air-storage system or an air-compressor to recharge air-bottles.



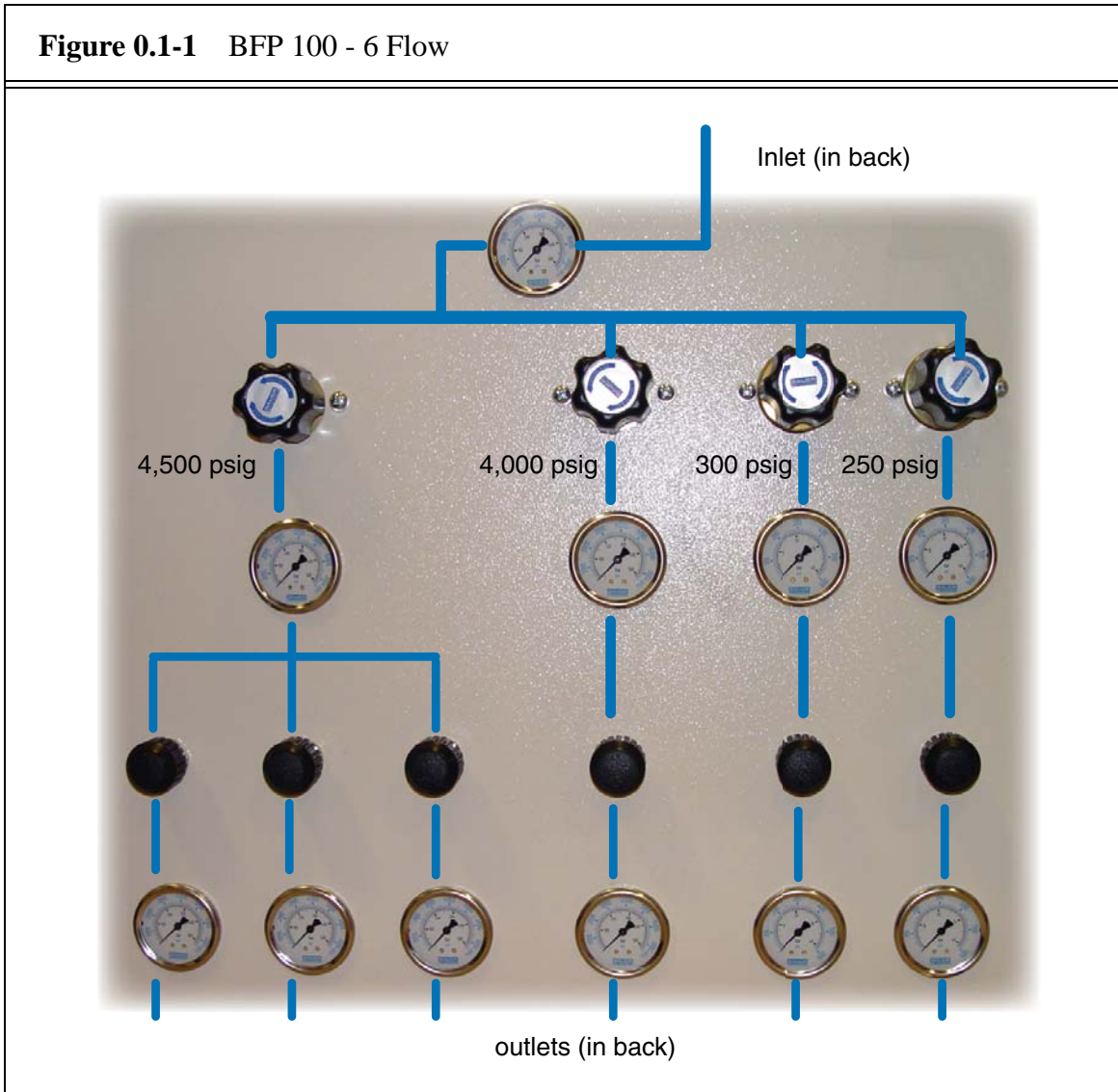
1.5 Specifications - BF 100 - 6

Medium	air
Operating pressure, std.	3,250 psig (224 bar)
Operating pressure, max.	6,000 psig (414 bar)
Ambient temperature range	32 - 105° F (0 - 40° C)
Inlet pressure gauge	0 - 7,500 psig (0 - 517 bar)
Adjustable pressure regulator	2 @ 6,000 psig In, 0 - 5,000 psig Out
	2 @ 6,000 psig In, 0 - 400 psig Out
	(2 @ 414 bar In, 0 - 345 bar Out)
	(2 @ 414 bar In, 0 - 27.6 bar Out)
BFP (Basic Fill Panel) Dimensions	27" H x 30" W x 10 3/4" D
	(68.6 cm H x 76.2 cm W x 27.3 cm D)

1.6 Pneumatic Flow

The compressed air enters through the inlet, in the back of the unit. It flows to the inlet pressure gauge, where it is channeled to 4 separate regulators. The regulators are set from left to right (facing the controls) 4,500 psig, 4,000 psig, 300 psig, and 200 psig. The compressed air travels from the regulators through the regulator gauges down to the bottle fill valves and bottle fill gauges. The air then exits the bottle fill panel through the back of the panel..

Figure 0.1-1 BFP 100 - 6 Flow



CHAPTER 2: BF SERIES OPERATION

2.1 Bottle Filling Procedures

See Figure 6

⚠ WARNING ⚠

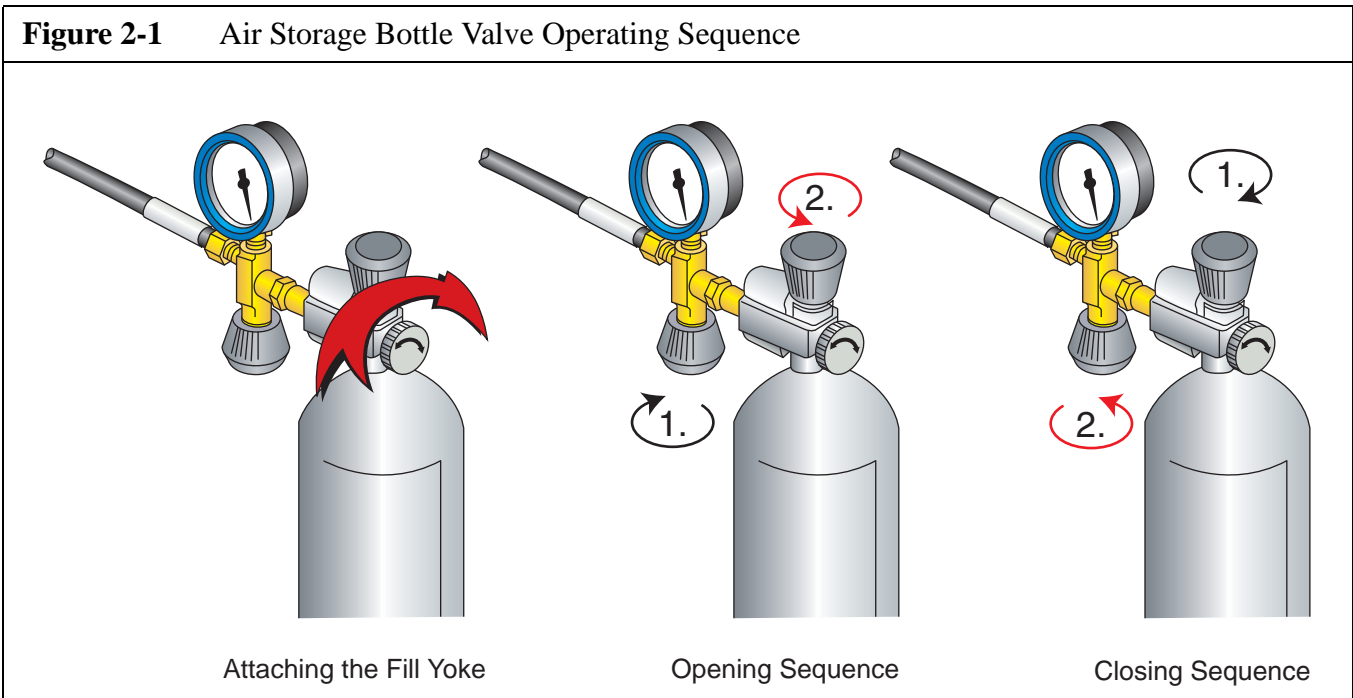
Do not attach bottles to outlets units unless the bottle is rated for appropriate pressure. (Note pressure stamped on the tank neck)

⚠ WARNING ⚠

Never open the fill valve unless the bottle is connected to the fill hose. Whipping of an unrestrained hose caused by high pressure air discharge can cause serious injury!

⚠ CAUTION ⚠

The filling procedure should not be interrupted for more than 10 minutes to avoid increased CO₂ levels in the air filling the bottle.



2.1.1 Attaching the Fill Yoke to the Air Storage Bottle

1. Ensure both the fill valve and bottle valve are closed.
2. Connect the air bottle to the BFP fill hose utilizing the fill yoke.

2.1.2 Opening Sequence for Filling the Bottle

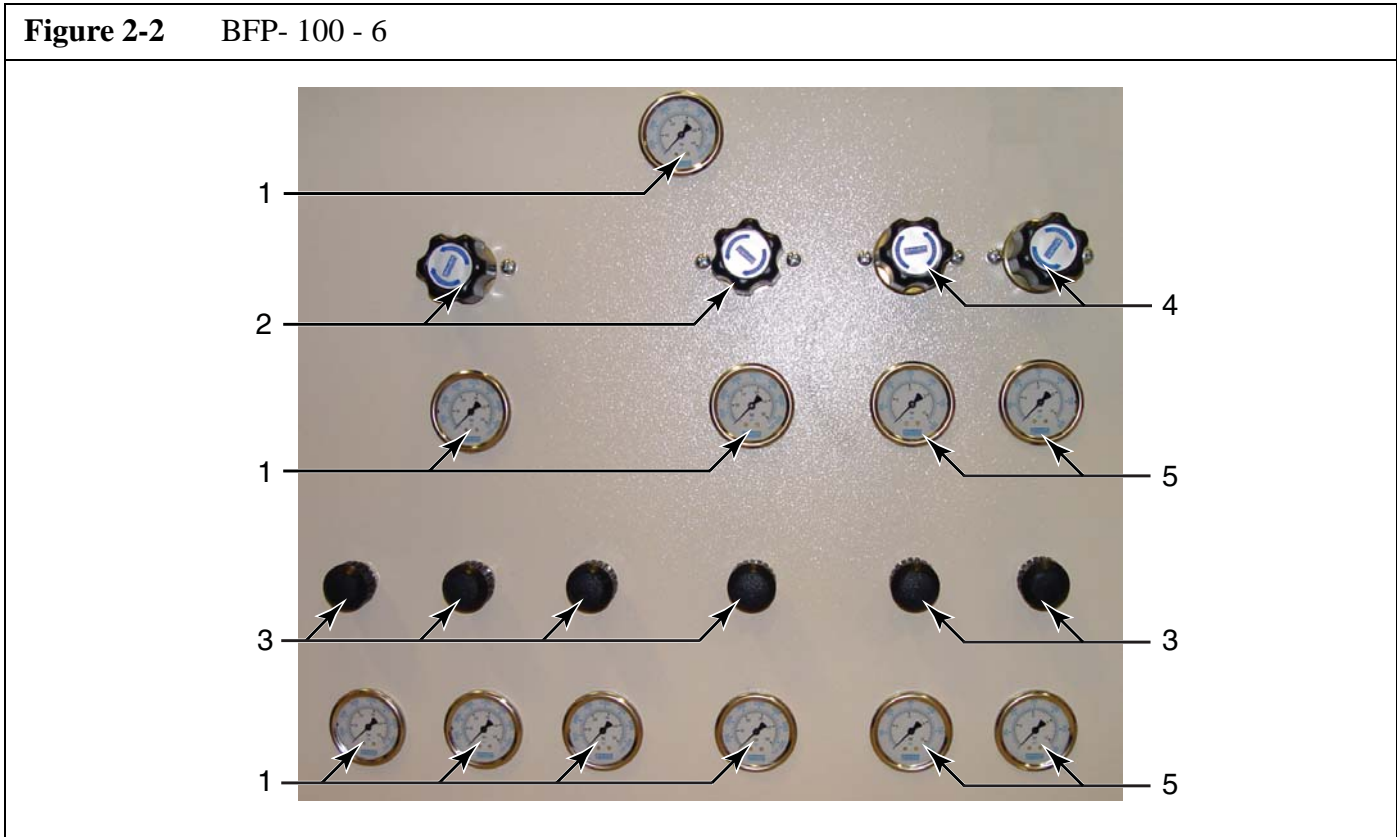
1. First open fill valve. (1)
2. Open bottle valve. (2)
3. Bottle will begin filling.
4. During the filling process, monitor bottle pressure on fill valve gauge and drain condensate at the compressor.

2.1.3 Closing Sequence for After Filling the Bottle

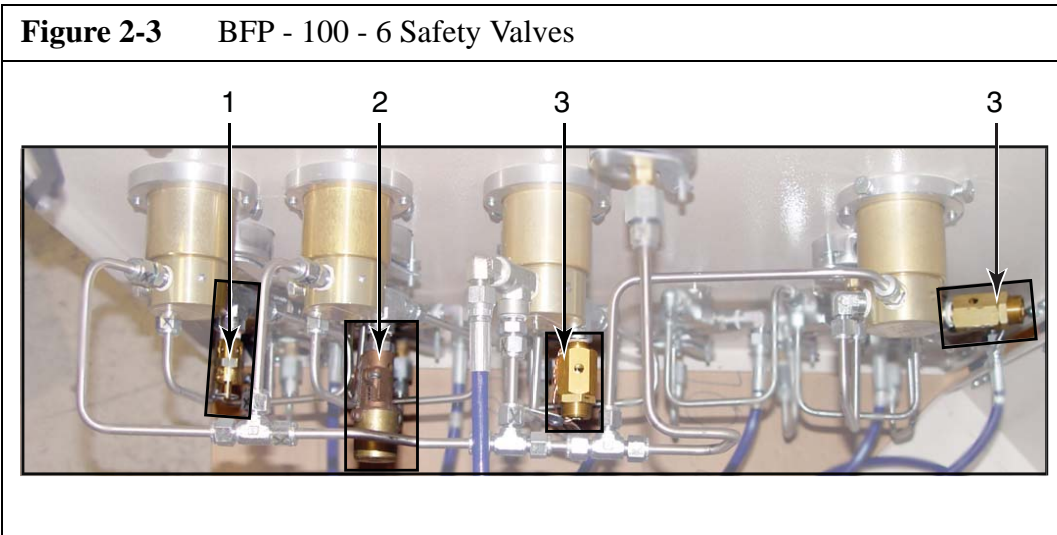
1. First close the bottle valve. (1)
2. Close the fill valve. (2)
3. Remove fill yoke and store compressed air bottle.

2.1.4 Parts Lists

Figure 2-2 BFP- 100 - 6



Item	Qty	Part No.	Description	Notes
1	7	GAG-0009W	Pressure Gauge	7,500 psi/bar
2	2	REG-0003	Regulator	6,000 psi - in — 0 - 5,000 psi - out
3	2	VAL-0076	Fill Valve (needle valve)	
4	2	REG-0013	Regulator	6,000 psi - in — 0 - 400 psi - out
5	4	GAG-0007W	Pressure Gauge	600 psi/bar



Item	Qty	Part No.	Description	Notes
1	1	VAL-0131	Safety Valve	set to 275 psig
2	1	VAL-0167	Safety Valve	set to 325 psig
3	1	VAL-0169	Safety Valve	set to 4,400 psig
4	1	VAL-0169	Safety Valve	set to 5,000 psig

CHAPTER 3: MAINTENANCE**3.1 Pressure Gauges**

Observe the pressure gauges daily. If the readings of any of the gauges seem to be incorrect, bleed off all system pressure. Then, remove the gauge and check for wear and tear, accuracy and proper functioning by comparing it to a precision test gauge or a dead weight tester. Replace all broken or damaged gauges immediately.

3.2 Safety Valve

Develop a regular program of visual inspection, looking for clogged drains and discharge pipe, dirt buildup in and around the valve seat, and broken or missing parts.

Avoid excessive operation of the safety valve, as even one opening can provide a means for leakage. Safety valves should be operated only often enough to assure that they are in good working order.

Test the valve every two to six months (depending on the surrounding conditions) by raising the system pressure to the valve's set pressure allowing it to open and reset as it would in normal service. Do not hand operate the valve with less than 75% of the stamped set pressure exerted on the underside of the disc. When hand operating, be sure to hold the valve in an open position long enough to purge accumulated foreign material from the seat area and then allow the valve to snap shut.

Do not paint, oil or otherwise cover any interior or working parts of any safety valve. They do not require any lubrication or protective coating to work properly.

When safety valves require repair, service adjustments or set pressure changes, work shall be accomplished by the manufacturer or holders of "V", "UV" and/or "VR" stamps.

3.3 Tube Connections

Pipe connections (swivel nuts): Tighten just firmly enough so that leakage is stopped (finger tight plus up to an additional 1/2 turn as necessary). Please note that the compression type coupling fittings are capable of exerting extreme force on the tubing and should not be tightened more than is required to seal the joint. To improve the sealing of the pipe connections and to facilitate installation, the following should be observed:

1. Apply a thin layer of Never-Seez NSWT or equivalent on the outside of the ferrule during assembly.
2. Lubricate the threads of the connector with Never-Seez NSWT or a similar PFTE base lubricant to facilitate future disassembly.

3.4 Pressure Hoses

The hoses should be inspected periodically for wear and damage. If a hose is worn or damaged, remove and replace it.

3.5 Storage Bottles

All storage bottles should be visually inspected internally every year.

Every three (3) years, D.O.T. bottles must be hydrotested.

Check local and state regulations regarding testing of ASME and/or D.O.T. bottles.

⚠ NOTE ⚠

Some states require an annual visual inspection.
And hydrotesting requirements also differ from state to state and according to specific bottle types.


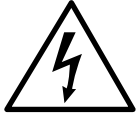




CHAPTER 4: APPENDIX**4.1 Safety****4.1.1 General Safety Precautions**

- Read the operating manual before installing or operating this compressor unit. Follow appropriate handling, operation and maintenance procedures from the very beginning. The maintenance schedule contains measures required to keep this compressor unit in good condition. Maintenance is simple, but must be executed regularly to achieve safe operation, maximum efficiency and long service life.
- We recommend that all maintenance work be recorded in a service book, showing the date and details of the work carried out. This will help to avoid expensive repairs caused by missed maintenance work. If it is necessary to make a claim against the warranty, it will help to have proof that regular maintenance has been carried out and that the damage has not been caused by insufficient maintenance.
- This compressor unit must be installed, operated, maintained and repaired only by authorized, trained and qualified personnel.
- Consult and follow all OSHA, NEMA, ASME and local regulations, laws and codes covering the installation and operation of this compressor and accessories before operating the unit.
- Do not operate this unit in excess of its rated capacity, speed, pressure, temperature, or otherwise than in accordance with the instructions contained in this manual. Operation of this unit in excess of the conditions set forth in this manual will subject the unit to limits which it may not be designed to withstand.
- Keep safety guards in place.
- Do not modify the compressor or its systems.
- Do not wear loose clothing around machinery. Loose clothing, neckties, rings, wrists watches, bracelets, hand rags, etc. are potential hazards.
- Provide adequate fire protection. Make sure fire extinguishers are accessible. Select alternate routes of escape and post such routes.
- Make sure you are equipped with all required safety equipment; hearing protection, safety glasses, hard hats, safety shoes and fire extinguisher.
- Visually inspect the unit before starting. Remove and /or replace any loose or broken components, tools, valves, missing equipment, etc.
- Do not tamper with, modify, or bypass safety and shutdown equipment.
- Do not tighten or adjust fitting or connections under pressure.
- The use of plastic pipe or rubber hose in place of steel tube or iron pipe, soldered joints or failure to insure system compatibility of flex joints and flexible hose can result in mechanical failure, property damage, and serious injury or death.
- The use of plastic or nonmetallic bowls on line filters without metal guards can be dangerous.
- Replace damaged fan blades promptly. Fan assemblies must remain in proper balance. An unbalanced fan can fly apart and create an extremely dangerous condition.

- Allow the compressor to cool before servicing. Whenever the compressor is shut down and overheating is suspected, a minimum period of 15 minutes must elapse before opening the crankcase. Premature opening of the crankcase of an overheated unit can result in an explosion.
- Incorrect placement of the inlet and pressure valves in a compressor cylinder head can cause an extremely dangerous condition. Refer to the appropriate section of this manual before installing or replacing valves.
- Before doing any work involving maintenance or adjustment, be sure the electrical supply has been disconnected, and the complete compressor system has been vented of all internal pressure. Failure to follow these warnings may result in an accident causing personal injury and/or property damage.
- Before working on the electrical system, be sure to disconnect the electrical supply from the system at the circuit breaker or other manual disconnect. Do not rely on the ON/OFF switch to disconnect the electrical supply.
- Installer must provide an earth ground and maintain proper clearance for all electrical components.
- All electrical installation must be in accordance with recognized national, state, and local electrical codes.
- Do not use gasoline, diesel fuel or other flammable products as a cleaning solution.
- A compressor which has been used for gas service is unsuitable for air applications. Should the purchaser and/or user proceed to use the compressor for air service after it has been used for gas, the purchaser/user assumes all liability resulting therefrom without any responsibility being assumed by Bauer Compressors, Inc. The purchaser is urged to include the above provision in any agreement for resale of this compressor.
- The use of repair parts other than those listed in this manual or purchased from BAUER Compressors, Inc. may create unsafe conditions over which BAUER has no control. Such unsafe conditions can lead to accidents that may be life-threatening, cause substantial bodily injury, and/or result in damage to the equipment. Therefore, BAUER Compressors, Inc. can bear no responsibility for equipment in which non-approved repair parts are installed

4.1.2 Safety Warning Labels

Notes, labels and warning signs are displayed on the compressor unit according to model, application or equipment and may include any of the following.

	<p>HOT SURFACES DO NOT TOUCH!</p> <p>Danger of burning if cylinders, cylinder heads, or pressure lines of individual compressor stages are touched.</p>
	<p>HIGH VOLTAGE!</p> <p>Life threatening danger of electrical shock. Maintenance work on electric units or operating equipment should be carried out by a qualified electrician or by a person supervised by a qualified electrician according to electrical regulations.</p>
	<p>AUTOMATIC COMPRESSOR CONTROL UNIT MAY START WITHOUT WARNING!</p> <p>Before carrying out maintenance and repair work, switch off at the main switch and ensure the unit will not restart.</p>
	<p>THE INSTRUCTIONS MUST BE READ BEFORE OPERATING UNIT!</p> <p>The instruction manual and all other applicable instructions, regulations, etc. must be read and understood by the operating personnel before using the machine.</p>
	<p>HEARING PROTECTION MUST BE WORN!</p> <p>Hearing protectors must be worn when working on a machine which is running.</p>
	<p>DIRECTION OF ROTATION!</p> <p>When switching on the machine, check the arrow to ensure correct direction of rotation by the drive motor.</p>

4.2 Unpacking, Handling and Installation

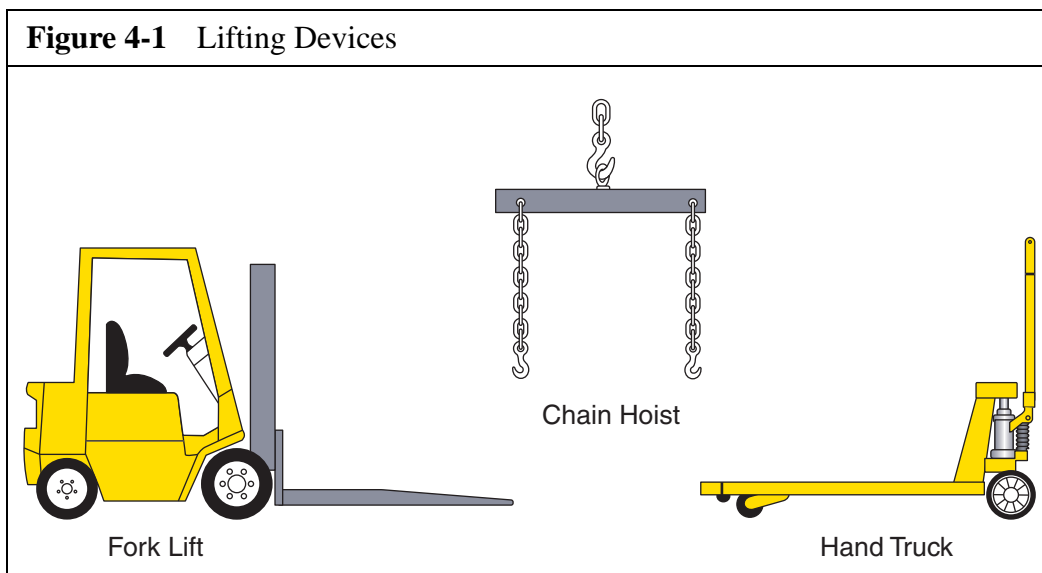
4.2.1 Unpacking and Handling

This compressor unit is packaged according to the requirements for shipping via the requested type of carrier service. It is possible that the compressor unit could have been damaged during shipping. For this reason, we urge you to thoroughly examine the unit for possible damage and report any such damage to the shipping company immediately.

Care must be taken in unpacking the compressor unit. Serious damage could result by not checking for clearance between the item being unpacked and the packaging to be removed.

Handling of the unpacked unit should be performed using only the following devices.

See Figure 4-1.



⚠ WARNING ⚠

Be sure the lifting devices are capable of handling the weight of the unit (see Paragraph 1.4 for the weight of the unit). Before lifting the unit, secure all loose or swinging parts to keep them from moving. Stay clear of lifted load.

The compressor unit may be furnished with one or more shipping braces for shipping and handling only. After installation and before operation, these braces must be removed entirely. Under no circumstances should the braces remain installed during operation or the manufacturer's warranty for the compressor unit will be voided. The braces are all tagged and labelled.

4.2.2 Installation of the Compressor Unit

The floor/site must be capable of supporting the weight of the unit. Secure the compressor unit to the floor using ½” lag bolts. Position the unit so that it is level. Permissible inclination of the compressor unit is listed in Paragraph 1.4.

⚠ CAUTION ⚠

The inclination values listed in Paragraph 1.4 are valid only if the oil level of the compressor is level with but does not exceed the upper mark of the oil dipstick or oil level sight glass

Ensure that the compressor air intake is supplied with fresh air. The intake air must not contain any exhaust fumes or flammable vapors such as paint solvents, which may cause an internal fire. Make sure that the intake air is unobstructed and moisture in the intake air is kept to a minimum. It is important that units draw in clean air. The quality of the incoming air determines the quality of the compressed air. This is important even for industrial air, as any incoming fumes will also be compressed and will increase the toxicity to anyone working with the compressed air.

If a remote control is provided, the unit must be equipped with a clearly visible plate warning the possibility of the unit starting. As an additional measure, anyone starting the unit by remote control must make sure that no one is checking or operating the unit. For this purpose, a second warning plate should be provided at the remote control unit.



AUTOMATIC COMPRESSOR CONTROL UNIT MAY START WITHOUT WARNING!

Before carrying out maintenance and repair work, switch off at the main switch and ensure the unit will not restart.

Observe and maintain an ambient temperature range of 43° to 113° F.

The area in which the compressor unit is installed should be well lit and easily accessible to facilitate servicing and routine maintenance.

4.2.2.1 Space Requirement

A space of 30 to 40 inches should be maintained on all sides, for maintenance access. If a special setup is required, reference special setup drawings for necessary spacing of the unit.

4.2.2.2 Ventilation

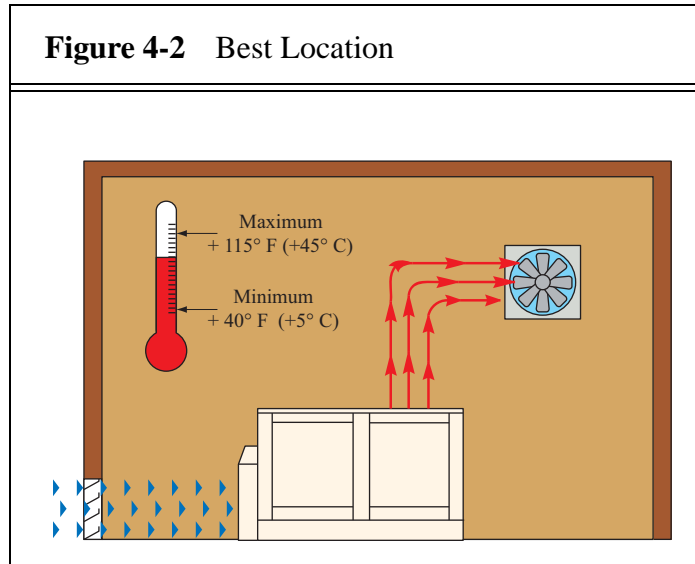
During normal compression, heat is generated by the compressor and by the drive motor/engine. For air-cooled compressor units, this heat needs to be vented away by sufficient ventilation.

4.2.2.2.1 Outdoor Installation

It is recommended that all gasoline and diesel engine driven compressor units be installed outdoors. Additionally, electrically driven compressor units may be installed outdoors only if enclosed with weatherproof enclosure panels.

4.2.2.2.2 Indoor Installation

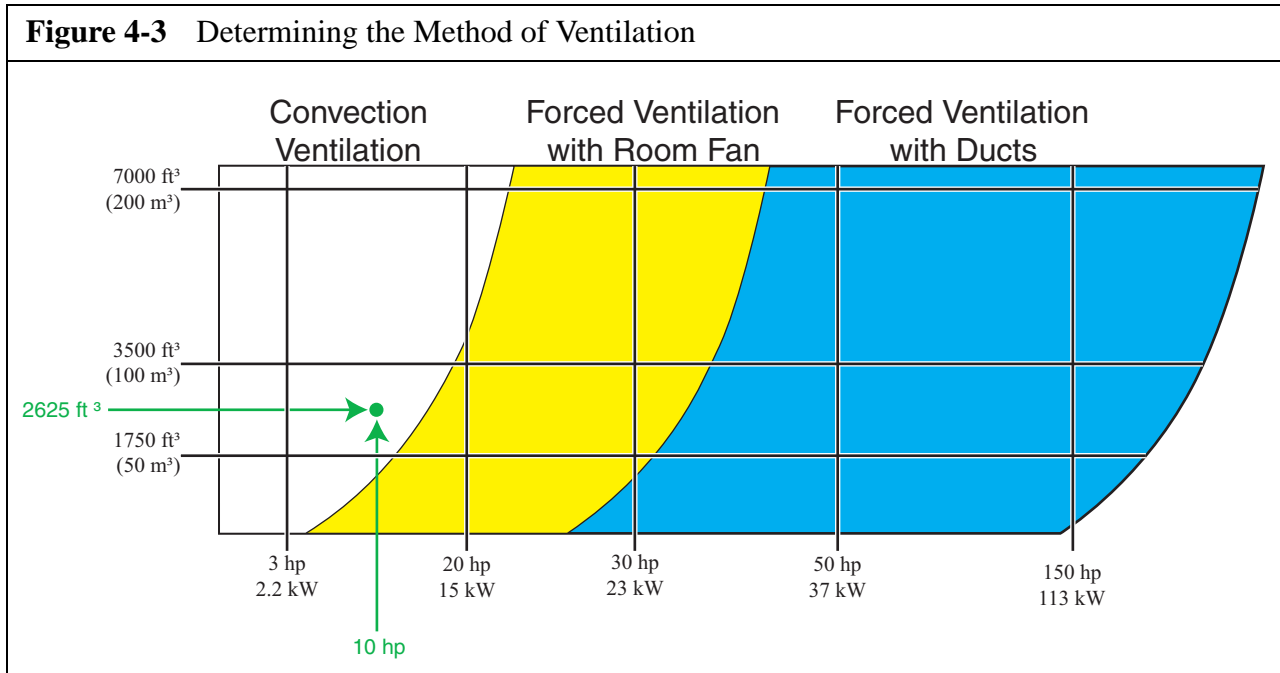
The best location to install the compressor unit indoors is against an outside wall with a suitably large air vent in front of the cooling fan. Additionally, it is necessary to position an exhaust opening in the opposite wall, close to the ceiling or in the ceiling.



As a basic rule of thumb, the room should be ventilated sufficiently so as to prevent the ambient room temperature from exceeding 105° F. Additional heat generating equipment or piping should be avoided or must be well insulated.

4.2.2.2.3 Heat Flow - Choice of Proper Ventilation

Sufficient heat dissipation must be provided by proper ventilation as part of correct installation. It is necessary to dissipate this heat by ventilation. The heat generated in the compressor increases with more compression. Approximately 70% of the heat generated during compression is in the compressor, the additional heat is generated by the compressor drive. The necessary ventilation may be attained by natural or artificial means. The graph in Figure 4-3 illustrates how the room volume and drive power determine the necessity for natural or forced ventilation.



In determining the necessary type of ventilation the following factors should also be considered:

- Ambient temperature of the set-up room
- Length of a possible ventilation ducts
- Back pressure of the ventilation ducts
- Size of the intake and exhaust openings
- Additional heat sources in the set-up room

4.2.2.2.4 Cooling Air Flow Requirements

The minimum amount of cooling air required may be approximated by the following formulas.

Cooling Air Flow (cfm) = 132 x Drive Power (hp)

A table has been included in the appendix for more precise requirements.

4.2.2.2.5 Natural Ventilation

Natural ventilation should only be used up to a maximum drive power of 20 hp. To determine the size of the required intake and exhaust openings, refer to the following table: .

Drive hp	Intake and Exhaust Openings Dependent on Room Volume (V) and Height (h)					
	V = 1750 ft ³ h = 6.5 ft		V = 3500 ft ³ h = 10 ft		V = 7000 ft ³ h = 13 ft	
	Intake (ft ²)	Exhaust (ft ²)	Intake (ft ²)	Exhaust (ft ²)	Intake (ft ²)	Exhaust (ft ²)
3	1.3	1.1
5	3.2	2.7	1.3	1.1
7.5	4.5	3.8	2.6	2.2	1.3	1.1
10	9.7	8.1	6.5	5.4	2.6	2.2
15	14.5	12.4	9.7	8.1	5.8	4.8
20	20.6	17.2	15.6	12.9	9.7	8.1

4.2.2.2.6 Forced Ventilation

Forced ventilation is required for compressors with a 20 hp motor or greater. To determine the required intake opening and exhaust flow refer to the following table:

Drive hp	Dependence on Room Size (V) and Height of Exhaust Opening (h) ^a					
	V = 1750 ft ³ h = 8 ft		V = 3500 ft ³ h = 10 ft		V = 7000 ft ³ h = 13 ft	
	Intake (ft ²)	Exhaust cfm	Intake (ft ²)	Exhaust cfm	Intake (ft ²)	Exhaust cfm
25	3.3	3300	3.2	3200	3.0	3000
30	4.0	3960	3.8	3840	3.6	3600
40	5.3	5280	5.1	5120	4.8	4800
50	6.6	6600	6.4	6400	6.0	6000
60	7.9	7920	7.7	7680	7.2	7200
75	9.9	9900	9.6	9600	9.0	9000
100	13.2	13200	12.8	12800	12.0	12000
125	16.5	16500	16.0	16000	15.0	15000
150	19.8	19800	19.2	19200	18.0	18000

a. The intake sizes given in the above table are for a cooling air velocity of 1000 ft./min. BAUER recommends that the cooling air velocity be in the range of 600 ft./min. to 2000 ft./min.

4.2.2.3 Electrical Installation

4.2.2.3.1 Electric Drive

When making the electrical connections to the system, the following instructions are mandatory:

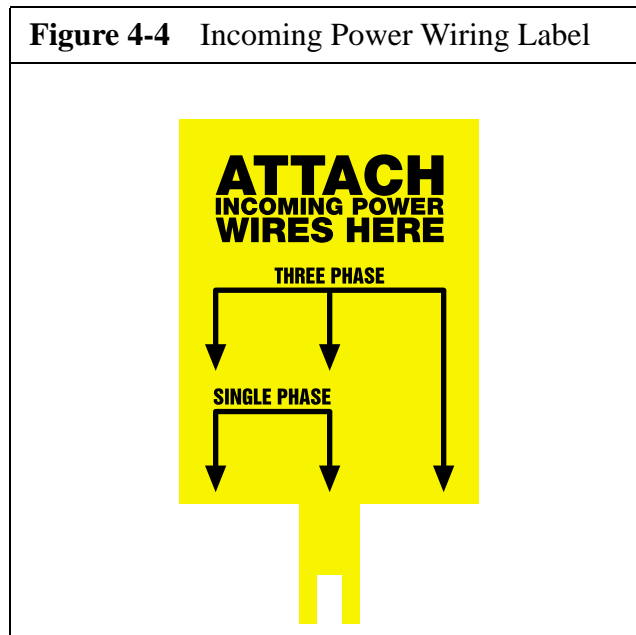
- Comply with all local, state and federal regulations concerning electrical installation.
- Arrange for the electrical connections to be made by a certified electrician only.
- Ensure that the motor voltage, control unit voltage, and frequency conform with the main voltage and frequency. Do not connect the compressor unit to a voltage other than the one specified on the name-plate.
- Provide all necessary cables and main fuses and a master disconnect switch. The fusing of the compressor must be carried out in compliance with local, state and national electrical regulations.

4.2.2.3.2 Electrical Supply

The machine is factory wired according to order. If the voltage is to be changed, consult the factory for instructions and necessary parts.

For standard models the only customer wiring necessary is from the customer supplied disconnect switch to the compressor unit’s electrical enclosures All wiring should be done by a licensed electrician familiar with national, state and local electrical codes.

The label shown in Figure 4-4 indicates the where the incoming power is connected to the compressor unit's electrical enclosure. This label must be removed before using the equipment.



The use of improperly sized wire can result in sluggish operation, unnecessary tripping of overload relays and/or blowing of fuses. The following tables are provided as a guide for proper wire size.

1 PHASE									
Motor hp	Full Load Amps			Fuse Amps ^a			Minimum Wire Size ^b		
	120V	208V	230V	120V	208V	230V	120V	208V	230V
2	24	13.2	12	30	20	17.5	10	...	14
3	34	18.7	17	50	30	25	8	10	10
5	56	30.8	28	80	50	40	4	8	8
7.5	80	44	40	100	70	60	3	8	8
10	...	55	50	...	90	60	...	6	6

a. Dual element time delay fuse amps.

b. Normal copper wire with THW, THWN, or XHHW insulation.

3 PHASE									
Motor hp	Full Load Amps			Fuse Amps ^a			Minimum Wire Size ^b		
	208V	230V	460V	208V	230V	460V	208V	230V	460V
2	7.5	6.8	3.4	12	10	5.6	14	14	14
3	10.6	9.6	4.8	17.5	15	8	14	14	14
5	16.7	15.2	7.6	25	25	12	10	12	14
7.5	24.2	22	11	40	30	17.5	8	10	14
10	30.8	28	14	50	40	20	8	8	12
15	46.2	42	21	60	60	30	6	6	10
20	59.4	54	27	90	80	40	4	4	8
25	74.8	68	34	100	100	50	3	4	8
30	88	80	40	125	100	60	2	3	8
40	114	104	52	175	150	80	0	1	6
50	143	130	65	200	200	100	3/0	2/0	4
60	169	154	77	250	200	100	4/0	3/0	3
75	211.2	192	96	300	300	150	300	250	1
100	273	248	124	400	350	175	500	350	2/0
125	343.2	312	156	500	400	200	2-4/0	2-3/0	3/0
150	396	360	180	600	500	250	2-300	2-4/0	4/0

a. Dual element time delay fuse amps.

b. Normal copper wire with THW, THWN or XHHW insulation.

In the above tables, all values are based on 1996 NEC articles 430 and 310 (NFPA 70). These values are provided as a general guide; however, the information given on the motor nameplate supersedes the above information.

4.3 Long Term Storage

4.3.1 General

If the compressor unit will be out of service for more than six months, it should be preserved in accordance with the following instructions:

1. Make sure that the compressor is kept indoors in a dry, dust-free room.
2. Cover the compressor with plastic sheets only if no condensation will form under the sheet.
3. Remove the sheet from time to time and clean the outside of the unit.
4. If this procedure cannot be followed, or if the compressor will be out of service for more than 24 months, please contact Bauer Product Support for special instructions.

4.3.2 Preparations

Prior to preserving the compressor unit, it must be run until warm, i.e., up to the specified service pressure. Operate the unit for approximately 10 minutes, then carry out the following checks.

1. Check all pipes, filters and valves (including safety valves) for leakage.
2. Tighten all couplings, as required.
3. After 10 minutes, open the outlet valve and operate the compressor at adjusted minimum pressure using the pressure maintaining valve for approximately 5 minutes.
4. After the 5 minutes, shut the compressor unit down and completely drain all separators and filters. Close all valves.
5. Remove filter heads and lubricate the threads with petroleum jelly.

4.3.2.1 Units Equipped with a Filter System

1. Ensure that cartridges remain in the purification system chambers. This will prevent oil from entering the outlet lines as a result of preservation procedures.
2. Remove the intake filter/intake pipe completely.

4.3.3 Preserving the Compressor

1. Operate the compressor again and slowly spray approximately 0.35 oz. (10 cc) of oil into the inlet port while the compressor is running. Keep the shut-off valve open and the condensate drain valves closed.
2. After spraying the oil into the inlet port, run the compressor unit for an additional 5 minutes before shutting the compressor unit down.
3. Close the shut-off valve and condensate drain valves.
4. Close the inlet port with a dust cap and/or tape.

4.3.4 Preventive Maintenance During Storage

Operate the compressor once every six months as follows:

1. Remove the dust cap from the inlet port and install the inlet filter.
2. Open the outlet valve and allow the system to run approximately 5 minutes until there is outflow from the valve and oil is visible in the sight glass of the oil regulating valve.
3. Shut down the compressor.
4. Open the condensate drain valves, depressurize the unit, then close the drain valves again.
5. Remove the intake filter and replace the dust cap on the inlet port.

4.3.5 Lubrication Oils for Preservation

1. After prolonged storage periods, the oil will age in the compressor crankcase. The oil must be drained at least every 24 months and replaced with fresh oil.
2. The stated period can only be attained when the crankcase is sealed during the preservation period in accordance with the preservation requirements.
3. After changing the oil, the compressor must be operated according to the instructions above.
4. Check the lubrication of the compressor during the every-six-month brief operation.
5. The oil pump is functioning properly when oil can be seen flowing through the sight glass of the oil pressure regulator or if the oil pressure gauge indicates the prescribed pressure.

4.3.6 Reactivating the Compressor Unit

1. Remove any dust cap or tape from the inlet port and install an intake filter.
2. Check the oil level of the compressor. If necessary, change the oil.
3. The motor must be thoroughly dry before applying power.
4. For units with a purification system, change all cartridges.
5. Run the compressor with open outlet valve for approximately 10 minutes. Check for proper operation of the lubricating system.
6. After 10 minutes, close the shut-off valve and run the system up to final pressure until the final pressure safety valve vents. On compressor units with a compressor control system, raise the pressure switch setting the switch above normal limits to override the pressure switch. Be sure to reset the switch after checking.
7. Check the interstage safety valves for leakage.
8. Establish the cause of any faults and remedy.
9. Stop the unit when it is running properly. The compressor is then ready for operation.

4.4 Reproducible Forms

4.4.1 Scheduled Maintenance Form

Daily	Para.	Date	Signature

Weekly or as required.	Para.	Date	Signature

500 Operating Hours.	Para.	Date	Signature

1,000 Operating Hours.	Para.	Date	Signature

2,000 Operating Hours.	Para.	Date	Signature

3,000 Operating Hours.	Para.	Date	Signature

Annually.	Para.	Date	Signature

Biennially. (Every two years)	Para.	Date	Signature

4.4.2 Record of Operating Hours

Date	Minutes	Total
Subtotal:		

Date	Minutes	Total
Subtotal:		

4.5 Reference Data

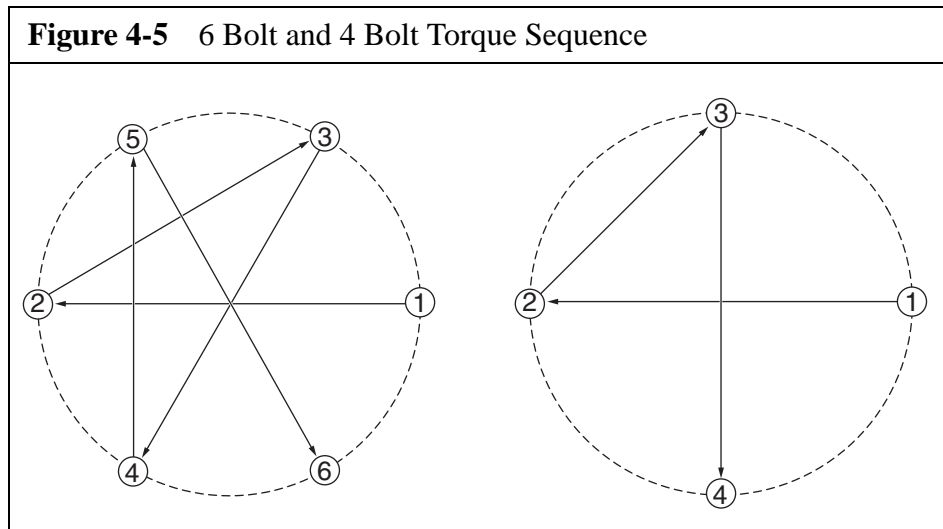
4.5.1 Tightening Torque Values

1. Unless otherwise specified in text, the torque values in Table 1 apply.
2. The indicated torque values are valid for bolts in greased condition.
3. Self locking nuts must be replaced on reassembly
4. Pipe connections (swivel nuts) should be tightened just enough so that leakage is stopped. Not more than finger tight plus up to an additional 1/2 turn.

Torque Values

Bolt or Screw	Size	Max. Torque
Hex and socket head	1/4" (M 6)	7 ft. lbs. (10 Nm)
Hex and socket head	5/16" (M 8)	18 ft. lbs. (25 Nm)
Hex and socket head	3/8" (M 10)	32 ft. lbs. (45 Nm)
Hex and socket head	1/2" (M 12)	53 ft. lbs. (75 Nm)
Hex and socket head	9/16" (M 14)	85 ft. lbs. (120 Nm)
Hex and socket head	5/8" (M 16)	141 ft.-lbs (200 Nm)

4.5.2 Torque Sequence Diagrams



4.5.3 Conversion Formulas

$$^{\circ}\text{F} = 9/5^{\circ}\text{C} + 32$$

$$\text{PSI} = \text{BAR} \times 14.5$$

$$^{\circ}\text{C} = 5/9 \times (^{\circ}\text{F} - 32)$$

$$\text{BAR} = \text{PSI} \times 0.0689$$

4.5.4 Approved Lubricants Chart

Unless otherwise specified in text, use the lubricants in Table 2.

Usage	Lubricants
O-rings, rubber and plastic parts; filter housing threads, sealing rings	Parker Super “O” Lube
Bolts, nuts, studs, valve parts, copper gaskets and tube connection parts (threads, cap nut and compression rings)	Never-Seez® NSWT, Pipe Dope or teflon tape
Paper gaskets	DOW Corning 732 or equivalent silicon compound applied on both sides before assembly,
High temperature connections	DOW Corning 732 or equivalent temperature resistant compound,
Tube connection ferrules,	Never-Seez® NSWT
Table 4-1: Lubricant Chart	

4.5.5 Glossary of Abbreviations and Acronyms

- † Available Only as Part of a Complete Assembly
- AC Activated Charcoal, removes odor and taste
- ACD automatic condensate drain
- ASME American Society of Mechanical Engineers
- CW clockwise
- CCW counterclockwise
- CGA Compressed Gas Association
- DIN Deutsches Institut für Normung
- DOT Department of Transportation
- E1 single phase electrical supply
- E3 three phase electrical supply
- HP Chemical Catalyst, converts carbon monoxide to carbon dioxide
- IAW In Accordance With
- MS Molecular Sieve, removes moisture
- NEC National Electrical Code
- NEMA National Electrical Manufacturers Association
- NFPA National Fire Protection Association
- OSHA Occupational Safety & Health Administration
- ODP open drip-proof (motor)
- OEM Original Equipment Manufacturer
- PCB printed circuit board
- PLC Programable Logic Controller
- PMV pressure maintaining valve
- SC Securus® Moisture Sensing Device

4.6 Additional Documents

OEM Manuals and other BAUER manuals may be included in the documentation shipping package.