

ELITE SERIES OILLESS COMPRESSOR



INSTALLATION, USER, AND SERVICE MANUAL

Revised 9-25

 **TECH WEST INC.**

Manufacturers of Dental Vacuum
and Air Systems

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ELITE SERIES OILLESS AIR COMPRESSOR

INSTALLATION AND SERVICE MANUAL

This manual is for the installation and service of Tech West's Elite Series Oilless Air Compressors.

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IMPORTANT OPERATING INFORMATION



Read & Understand Operators Manual Before Using This Machine. Failure To Follow Operating Instructions Could Result In Death Or Serious Injury.

Voir la notice d'installation avant de raccorder au réseau.

Operating

Indoor use at altitudes up to 6562 ft (2000m).

Ambient temperatures 41° to 104°F (5° to 40°C).

Supply voltage fluctuation of +/- 10% of nominal voltage.

Storage and Transport:

Temperature, 0° to 150°F (-40° to 65°C)

Relative Humidity, 0 to 90%, non-condensing

Atmosphere pressure range of 50kPA to 106kPA

IEC 60601-1 Classification:

Protection against electric shock (6.2):

Class 1

Applied Parts (5.9.1, 8.3):

There are no Applied Parts.

Protection against harmful ingress of water (6.3):

Ordinary, IPX0

Degree of safety in the presence of flammable anesthetics mixture with air or with oxygen or with nitrous oxide (11.4, 11.5):

Not suitable.

ACO2/4/6

30% Duty Cycle; Maximum

ATTENTION USERS:



Alerts users to important operating and maintenance instruction. Read carefully to avoid any problems.



Warns users that voltage not insulated within the unit may be of sufficient magnitude to cause electric shock.



Warns users of hot surfaces. There is a danger of burns. Work near these surfaces only after they have cooled down.



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Fresno, CA 93723



MEDICAL ELECTRICAL EQUIPMENT

WITH RESPECT TO ELECTRICAL SHOCK, FIRE, MECHANICAL AND OTHER SPECIFIED HAZARDS ONLY
IN ACCORDANCE WITH ANSI/AAMI ES60601-1: A1:2012, CI:2009/(R)2012 AND A2:2010/(R)2012,
CSA CAN/CSA-C22.2 NO.60601.14



Indicates the ON and OFF position for the Equipment power switch.



Indicates protective Earth Ground for the equipment power switch.

ELITE SERIES OILLESS AIR COMPRESSOR SPECIFICATIONS

COMPRESSOR LOCATION REQUIREMENTS

The Elite Series Oilless Air Compressor should be level, accessible, and well ventilated. DO NOT INSTALL THE COMPRESSOR IN A CONFINED SPACE, ATOP BUILDINGS, OR IN AREAS WITH MOISTURE. INSTALLATION IS REQUIRED TO BE PERFORMED BY QUALIFIED PERSONNEL.

Electrical

1. Line voltage must be within the limits listed in Figure 1 below. If line voltage is reading below the required values(s), a “buck boost transformer” may be required. Circuit breaker switches must be 20 AMPS.
2. Adhere to all local safety and building codes when installing equipment.

CAUTION — VOLTAGE MUST BE WITHIN THE LIMITS LISTED IN FIGURE 1 BELOW OR DAMAGE MAY OCCUR.

All voltage is based on alternating current ~

Figure 1: Chart of recommended Voltage, Amperage, Wire and Breaker size

MODEL	VOLTAGE	AMPERAGE	WIRE GAUGE	BREAKER SIZE
ACO2S2	208/230	8	10	20
ACO4D2	208/230	16	10	30
ACO6T2	208/230	25.5	8	40

MODEL NUMBER	MAX USERS	NUMBER OF HEADS	TOTAL H.P.	CFM @ 8HG	TANK GALLONS	VOLTAGE	TOTAL AMPS	BREAKER SIZE	DB(A)	EQUIPMENT WEIGHT	EQUIPMENT HEIGHT	EQUIPMENT WIDTH	EQUIPMENT DEPTH
ACO2S2	2-3	1	1.5	5.5	10	208/230	8	20	70	180	28	28	20.5
ACO4D2	5-7	2	3	11	20	208/230	16	30	72	287	34	38	22
ACO6T2	8-10	3	4.5	16.5	30	208/230	25.5	40	74	416	28	36	25
ESCRD-100	OPTIONAL QUIET COVER FOR ACO2S2 MODEL								68	50	15	19	19
ESCD-100	OPTIONAL QUIET COVER FOR ACO4D2 MODEL								68	50	17	29	22

ELITE SERIES OILLESS AIR COMPRESSOR

LINE SIZING

LINE SIZING

Choosing the correct size Elite Series Oilless Air Compressor for your practice depends on the number of air users and the anticipated air demand. To assure optimum compressor operation, the air demands should not exceed the number of air handpiece users shown in the chart below.

MODEL	NUMBER OF USERS	MOTORS	HEADS
ACO4D2	5-7	2	4
ACO6T2	8-10	4	8

AIR LINE SIZING CHART	
NUMBER OF OPERATORIES SEE NOTE	AIR LINE PIPE DIAMETER
	COPPER TYPE "M"
1	1/2"
2	1/2"
3	1/2"
4	1/2"
5	1/2"
6	3/4"
7	3/4"
8	3/4"
9	3/4"
10	1"
11	1"
12	1"

If a remote control panel is being used, the circuit breaker on the face of the compressor control box must be in the ON position.

The 24 volt circuit breaker must also be in the ON position. Make sure the reset button is flush with the face of the circuit breaker. If it isn't, push it in to reset.

If a remote control panel is not being used, be sure that the yellow and orange wires are connected to one another. These wires are located in the pressure switch. The circuit breaker located on the face of the compressor control box is the power control for the motor.

If a remote control panel is being used, ALL switches on the face of the compressor control box must be in the ON Position.

If a remote control panel is not being used, be sure that the yellow and the orange wires are connected to one another. These wires are located on the pressure switch. The power switches located on the face of the compressor control box are the power control for each motor.

Note: Compressor motors are designed to run together. Do not run one head at a time unless one head has failed and you are waiting for service.

The motor circuit breaker must be kept in the ON position and should not be used as a switch.

INTSTALLATION

This dental compressor should only be installed by qualified personnel. Should any questions arise during the installation, call Tech West Technical Support between the hours of 7:00 a.m. to 4:00 p.m. (Pacific Standard Time).

Place the compressor in a clean, dry, well ventilated area, on a solid, level surface. Consider sound level and insulate as needed. Be sure that adequate ventilation is available as the compressor is air cooled. Ambient temperature in the equipment room should be within the temperature range of 40 degrees Fahrenheit minimum to 104 degrees Fahrenheit maximum.

- 1) Check the shipping carton for damage. This could detect damage to the unit which might otherwise be overlooked. Remove cardboard shipping carton.
- 2) Remove the unit from its shipping skid. Inspect the unit for damage including sharp edges and corners. Oilless Compressors are shipped bolted to a pallet. This pallet is intended for shipping only and should be discarded.
- 3) Remove installation kit attached to pallet. It should contain the following:
 - (4) Isolation Feet
 - (1) Alternate Air Hookup Hose
 - (1) 5' Flexible Air Hose
- 4) Install isolation feet on tank legs.
- 5) Move compressor into place and make sure it is completely level.
- 6) Wiring instructions:
 - a) Have all electrical connections made by qualified personnel only. All connections should be in accordance with local codes.
 - b) Use the chart on page 2 to help determine the proper line and breaker size for the unit that is being installed.
- 7) Install the air line from the compressor tank to the building supply.
- 8) Install the 1" flex alternate air hose from the compressor to a fresh air supply.

Installation of Fuse Instructions:

Press down on Fuse holder cap and twist counter clockwise and lift up. Remove defective fuse from cap and replace with new fuse. Replacement fuse must be 1/4 amp slow blow fuse (TWI Part No. SBF-250).

INSTALLATION

SAFETY PRECAUTIONS

- Keep fingers, foreign objects and clothing free from rotating parts and do not touch hot surfaces.
- Never attempt to service an operating unit.
- Isolate unit from system pressure and relieve backpressure before servicing.
- Disconnect all power before servicing. The thermal protector in single phase motors automatically starts motor when device resets.

USE OF THIS PRODUCT IN OR NEAR EXPLOSIVE ATMOSPHERES, OR FOR PUMPING MIXTURES OTHER THAN ATMOSPHERIC AIR MAY CAUSE AN EXPLOSION OR FIRE, RESULTING IN PERSONAL INJURY OR DEATH.

START-UP STEPS

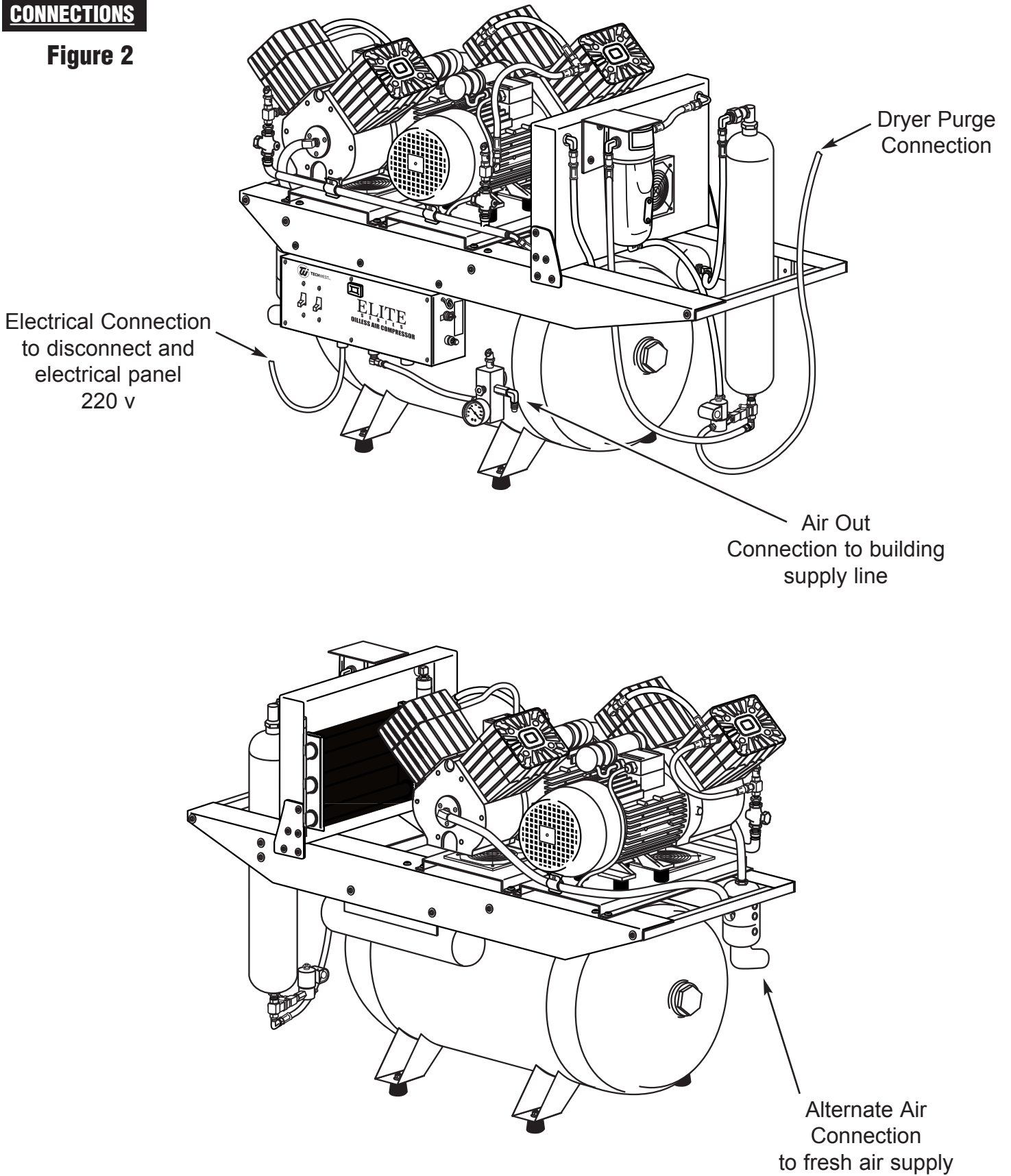
- (a) Make sure the shut-off valve from the compressor tank is closed.
- (b) Turn the breaker from the panel to the "ON" position.
- (c) Turn power "ON" from the toggle switch on the compressor. Compressor should run quietly and vibration free. The storage tank should start to build pressure.
- (d) The compressor will run until the pressure gauge reads 100 psi. The compressor then will automatically shut off and the dryer will purge with a quick blast of air.
- (e) Using soapy water, check the compressor plumbing hook ups for leaks. Repair leaks if needed.
- (f) Pressure test the entire plumbing system for leaks. Use the storage tank pressure gauge to monitor a pressure drop. After the plumbing system has been pressurized for 30 minutes, re-check the gauge for pressure drop. If there is a drop in pressure, find and repair all leaks in the office plumbing.
- (g) Complete and mail in the warranty card for the compressor within ten days of installation.

AIR LEAKS ARE THE MAIN CAUSE OF COMPRESSOR FAILURES.

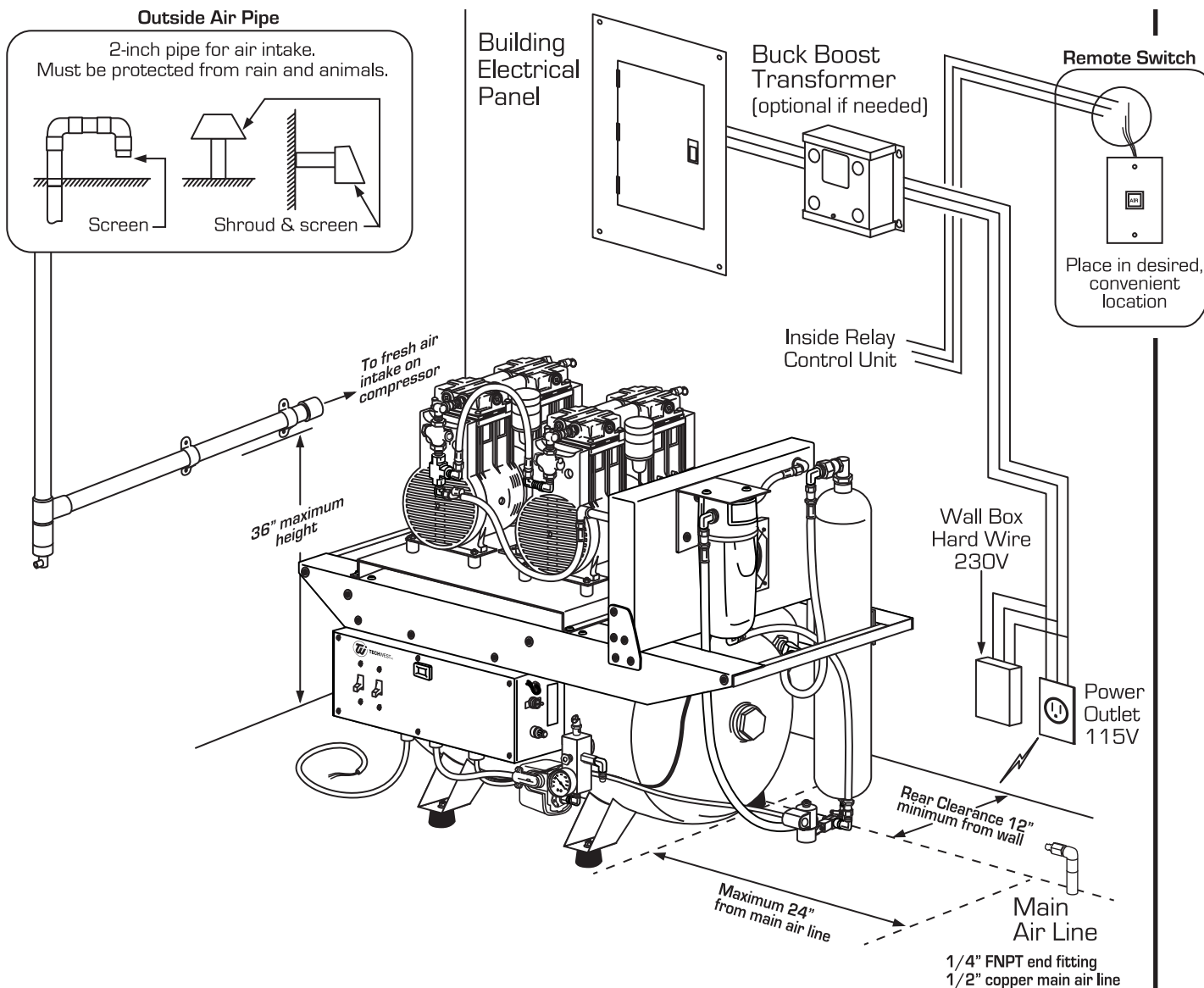
INSTALLATION

CONNECTIONS

Figure 2



TARGET ROOM LAYOUT



Important Information

Purge Valve and Drip Leg -

A drip leg with drain valve must be installed at lower end of the remote air intake pipe to collect condensation during operation. Attach a drain tube to the drip leg valve to allow drainage into floor drain.

Electrical Information

All compressors need to have dedicated circuit breakers. For breaker size and electrical connection type please refer to the product specifications / Dimensions chart on last page.

Service Clearances

Allow 12" on all sides for all units

Ambient Temperatures

Must not exceed 105°F Must remain above 41°F

Air Line Pipe Diameter

Operatories	Copper
1	1/2"
2	1/2"
3	1/2"
4	1/2"
5	1/2"
6	1/2"
7	3/4"
8	3/4"
9	3/4"
10	3/4"
11	3/4"
12	3/4"

SERVICE and MAINTENANCE

GENERAL SERVICE INFORMATION

For parts and service on the Elite series compressor contact the nearest authorized Tech West distributor. To expedite appropriate service, be prepared to provide the unit model number, identification number, and serial number found on the nameplate located on the front of the unit motor.

Component life operating at continuous duty & maximum pressure

Life of the rings and skirts is difficult to predict due to many conditions which directly influence wear. Some of these conditions may include ambient air temperature, air cleanliness, operating pressure, piston stroke on the particular model being utilized, 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.

PERIODIC SERVICING

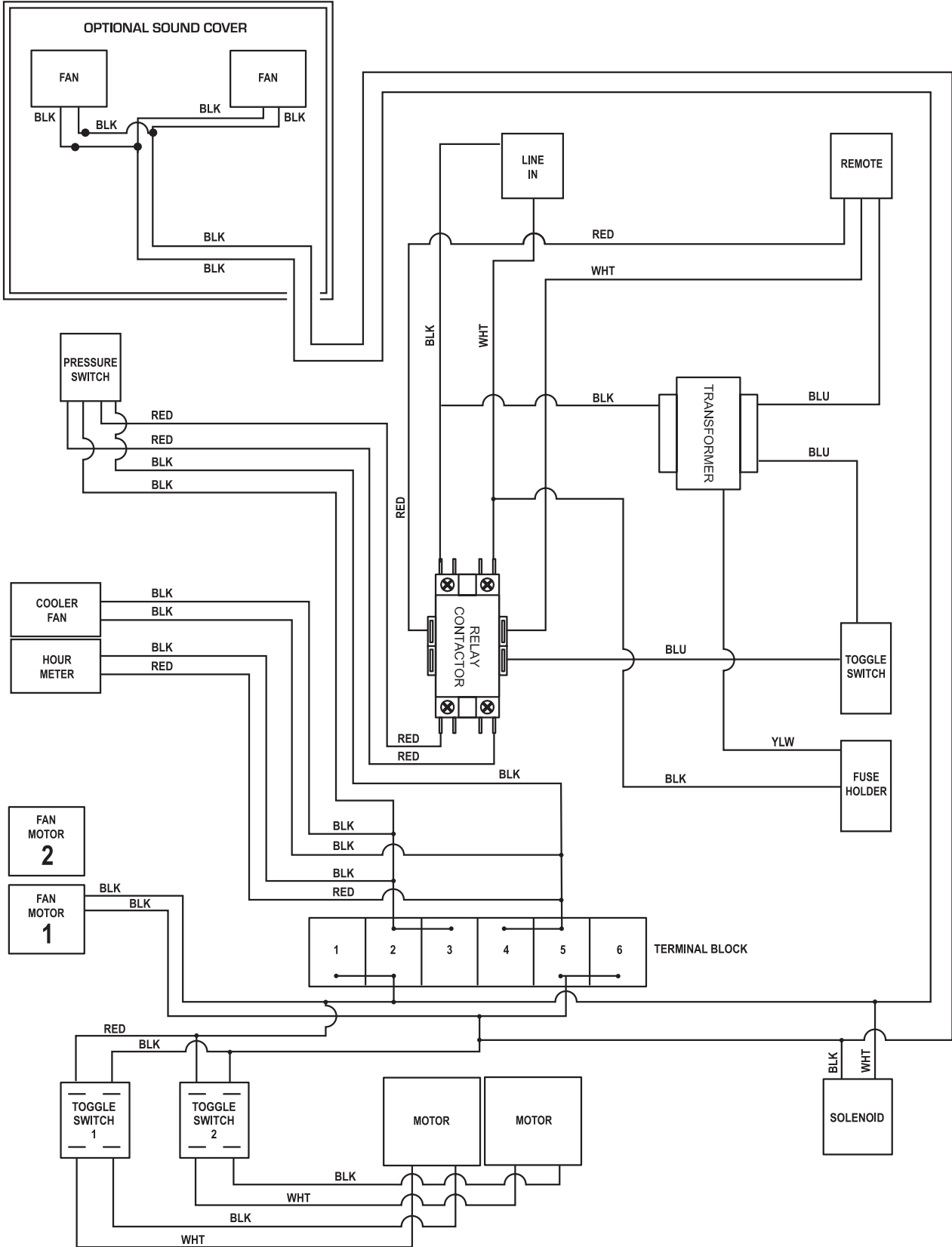
MONTHLY SERVICING

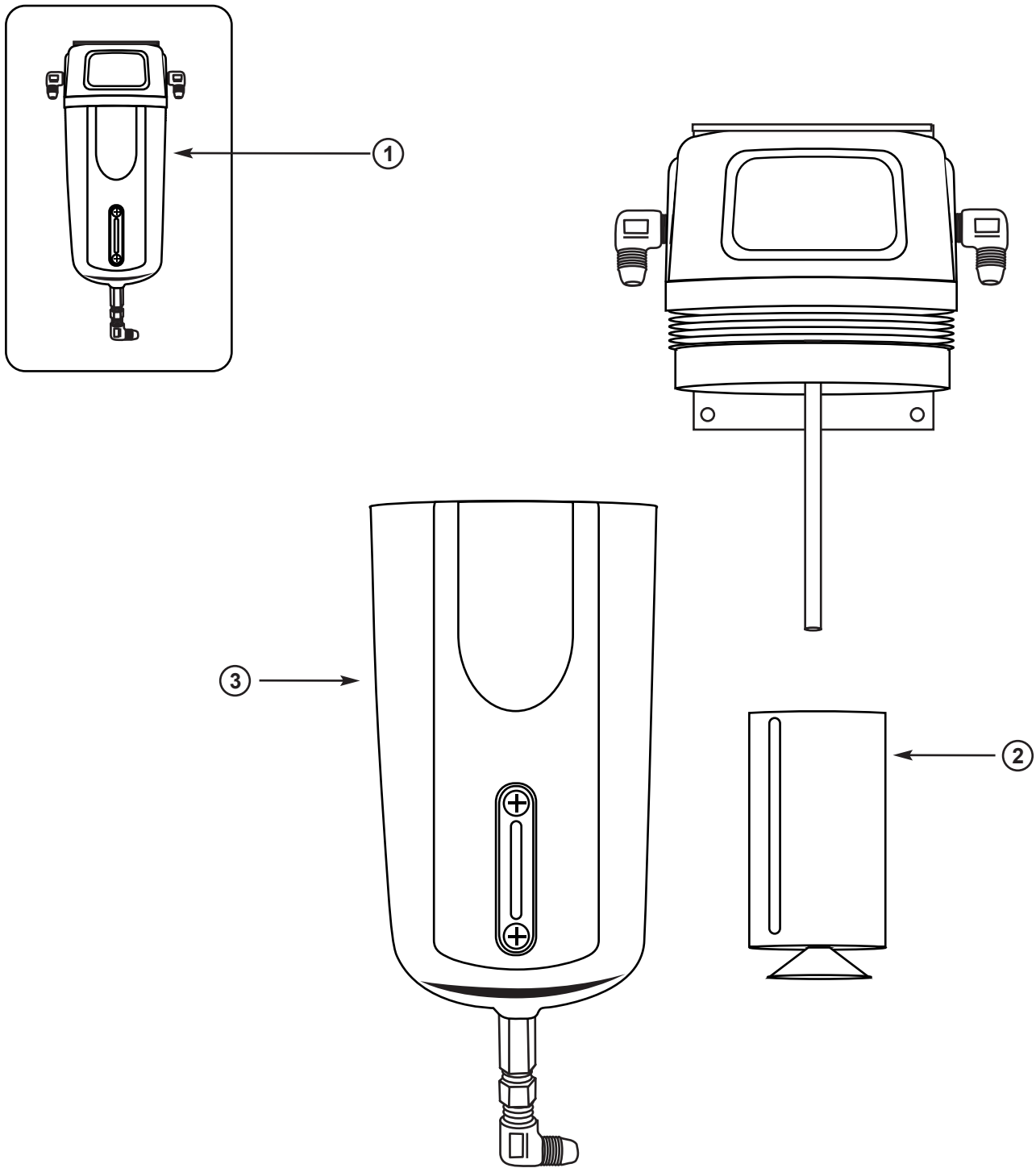
- (a) Remove the purge bucket and empty as needed
- (b) Crack the drain petcock on the bottom of the storage tank to check for water and drain if needed.
- (c) Check moisture indicator to see that it is still "BLUE". If it is pink, it is time to service the air dryer.
- (d) Check intake air supply filters. Replace filters as needed.

YEARLY SERVICING (for Elite models only)

- (a) Repeat all of the monthly servicing.
- (b) Replace the alternate air filter. (Part #: TIF-100 for the ACO4D2)
(Part #: TIF-200 for the ACO6T2)
- (c) Check the coalescing filter and change if needed. (Part #: CFEO-375)

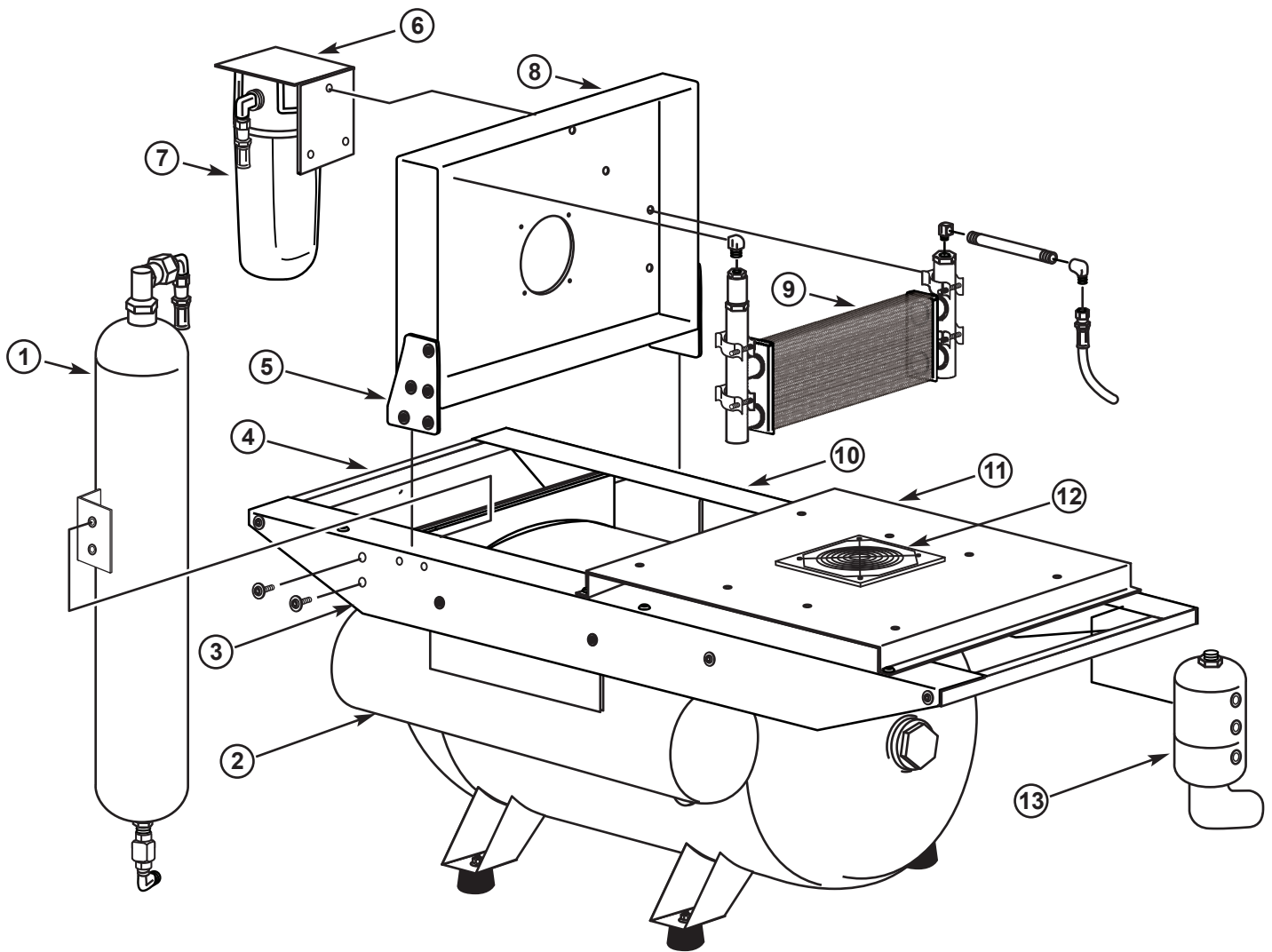
WIRING DIAGRAM





ELITE COALESCING FILTER ASSEMBLY

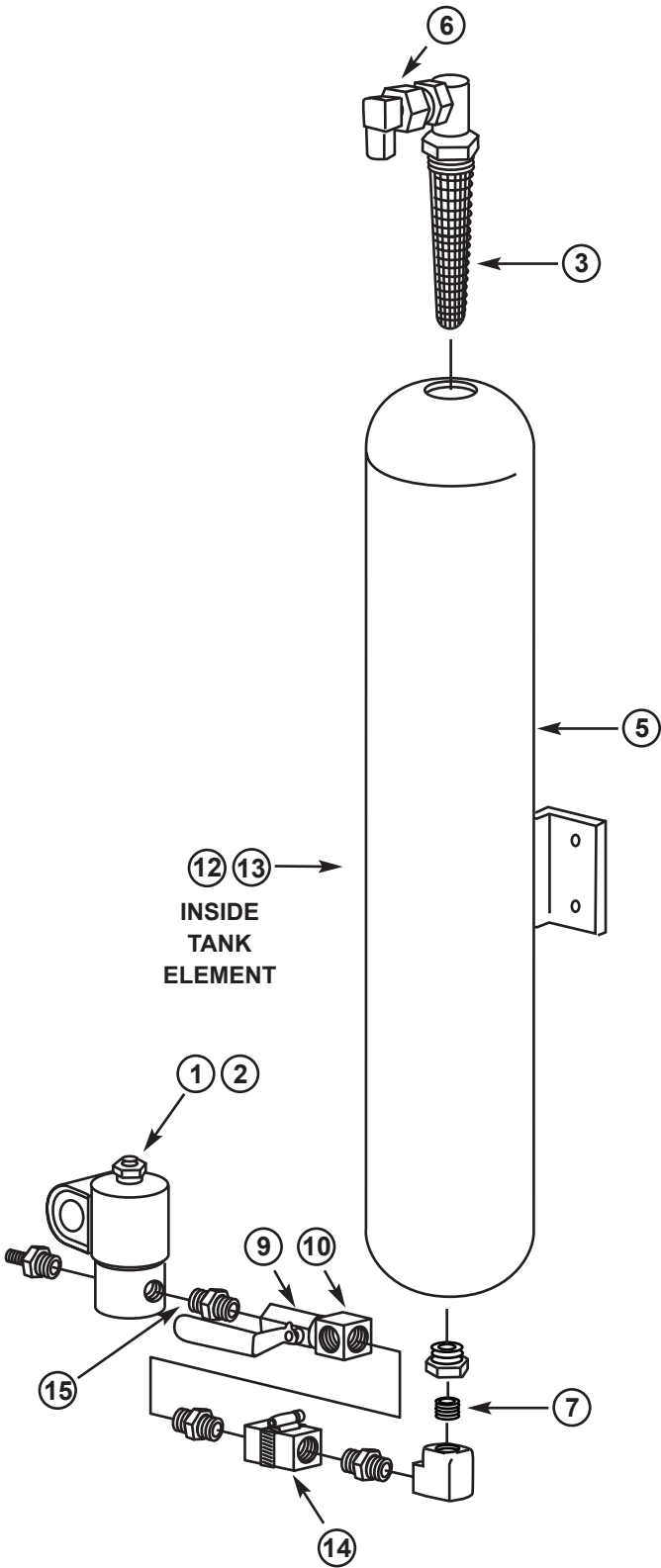
KEY	PART NO.	DESCRIPTION	UNIT
1	CFAO-375	COALESCING FILTER ASSEMBLY 3/8	1
2	CFEO-375	COALESCING FILTER ELEMENT 3/8	1
3	CFBP-375	COALESCING FILTER BOWL	1



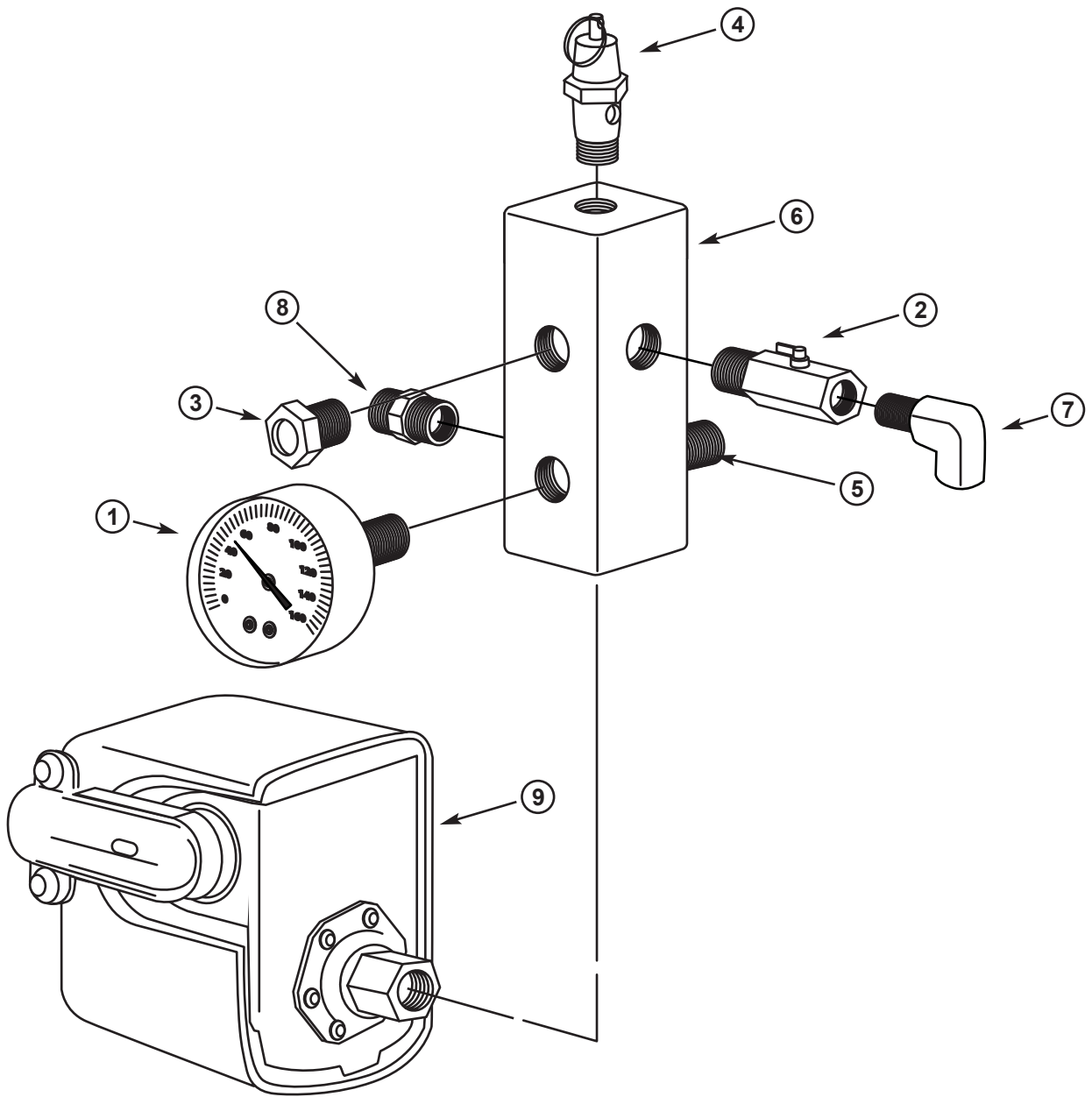
ELITE REAR VIEW TANK ASSEMBLY AND PARTS LIST

KEY	PART NO.	DESCRIPTION	UNIT
1	EDT-100	REPLACEMENT DESICCANT CARTRIDGE - ELITE	1
2	EPT-100	ELITE PURGE TANK	1
3	ETAR-R	ELITE TANK ANGLE ROCKY - REAR	1
4	ETHR	ELITE TANK HANDLE ROCKY	2
5	EPCB	ELITE PRECOOLER BRACKET	2
6	CFB-P	COALESCING FILTER BRACKET	1
7	CFAO-375	COALESCING FILTER ASSEMBLY	1
8	ERPCM	ELITE ROCKY PRECOOLER MOUNT	1
9	DPC-1E	ELITE PRECOOLER - SINGLE	1
10	ETAR-F	ELITE TANK ANGLE ROCKY - FRONT	1
11	ERMM	ELITE ROCKY MOTOR MOUNT	1
12	CF-230	ELITE COOLING FAN - DUAL VOLTAGE	2
13	EAAR	ELITE ALTERNATE AIR - ROCKY	1

ELITE DESICCANT AIR DRYER ASSEMBLY

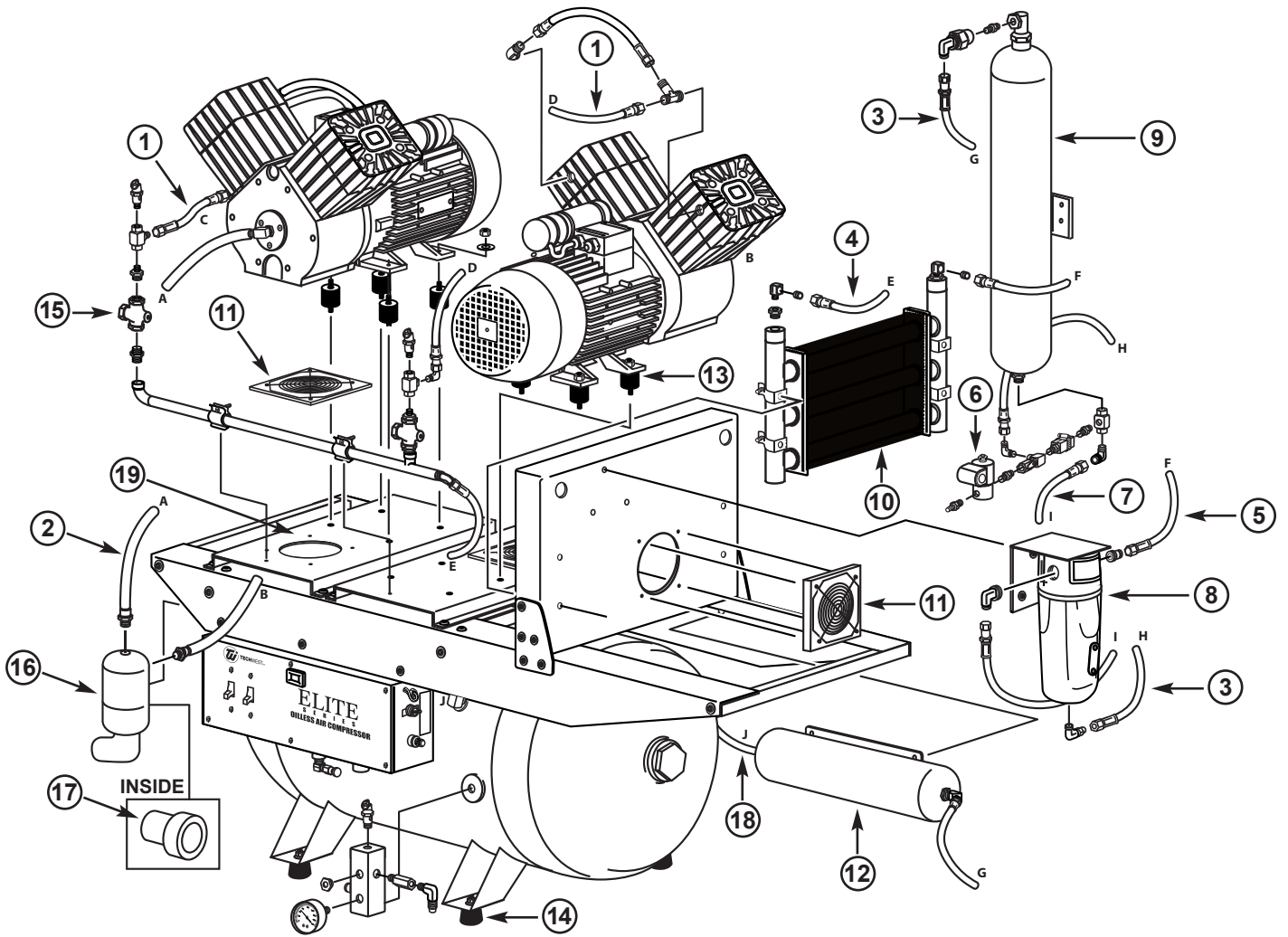


KEY	PART NO.	DESCRIPTION	UNIT
1	DSV-115	115V PURGE SOLENOID VALVE	1
2	DSV-230	230V PURGE SOLENOID VALVE	1
3	AS-500	1/2 FILTER ASSY	1
4	CFSG-100	COALESCING FILTER SITE GLASS	1
5	EDC-100	REPLACEMENT DESICCANT TANK	1
6	MV-250	METERING VALVE	1
7	SN-250-CL	STAINLESS STEEL NIPPLE 1/4	3
8	FE-4-6	FLAIR FITTING 1/4 X 3/8	1
9	BV-250	BALL VALVE 1/4	1
10	BT-250	BRASS TEE 1/4	2
11	FPH-375	CLEAR PURGE HOSE	PER FOOT
12	MSD-100	MOLECULAR-SIEVE 1 LB	2LBS
13	MSD-200	ACTIVATED ALUMINA 1 LB	2LBS
14	CV-250D	1/4 CHECK VALVE	1
15	BN-250-CL	1/4 BRASS NIPPLE - CLOSED	3



ELITE SERIES GAUGE AND CUT-OFF ASSEMBLY

KEY	PART NO.	DESCRIPTION	UNIT
1	CPG-250	COMPRESSOR GAUGE	1
2	BV-250-FM	1/4" BALL VALVE	1
3	MI-100	MOISTURE INDICATOR	1
4	POVA-100	POP OFF VALVE 125 PSI ASME	1
5	SSN-375-CL	STAINLESS STEEL NIPPLE 3/8" CLOSED	1
6	ATM	ALUMINUM TANK MANIFOLD	1
7	FE-4-4	BRASS FLARE ELBOW 1/4" X 1/4"	1
8	BPP-4	BRASS PIPE PLUG 1/4	1
9	PSC-3	PRESSURE SWITCH	1

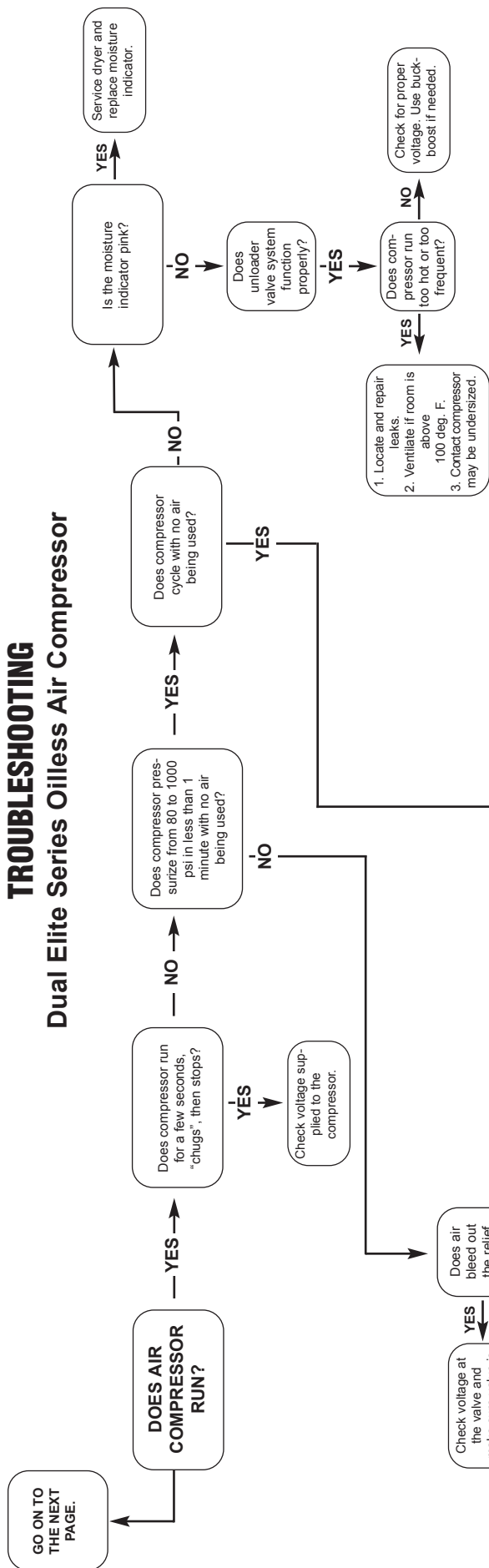


COMPLETE COMPRESSOR ASSEMBLY AND PARTS LIST

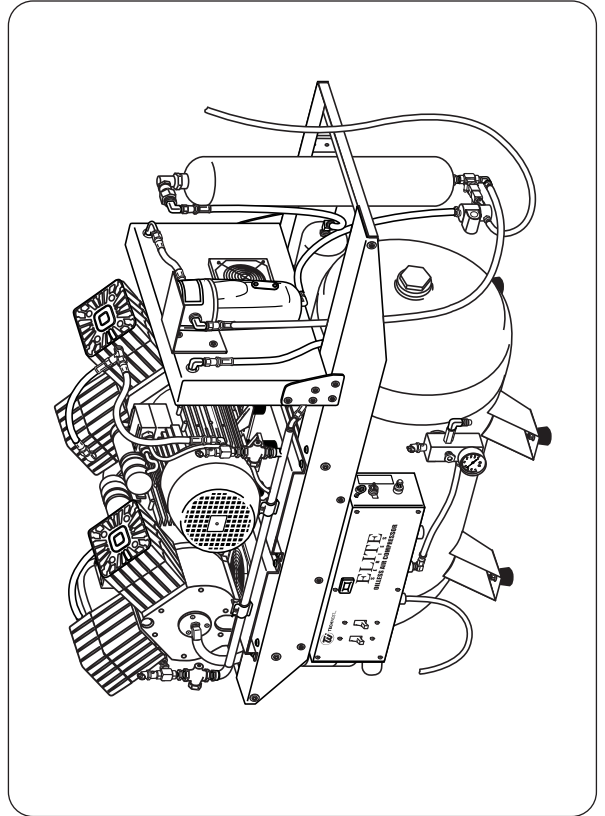
KEY	PART NO.	DESCRIPTION	UNIT
1	SBHA-13-375J	STEEL BRAIDED HOSE ASSEMBLY 13"	1
2	FPH-500R	FLEX PVC HOSE REINFORCED 1/2"	FT
3	HA-17-250	HOSE ASSEMBLY 17"	1
4	SBHA-17-375	STEEL BRAIDED HOSE ASSEMBLY 17"	1
5	SBHA-10.5-375	STEEL BRAIDED HOSE ASSEMBLY 10.5"	1
6	DSV-230	DRYER SOLENOID VALVE 230V	1
7	SBHA-28-375	STEEL BRAIDED HOSE ASSEMBLY 28"	1
8	CFA0-375	COALESCING FILTER ASSEMBLY 3/8" ONLY	1
9	EDT-100	REPLACEMENT DESICANT CARTRIDGE	1
10	DPC-2-E	DRYER PRECOOLER	1
11	CF-230	COOLING FAN 115-230 VOLT	3
12	EPT-100	ELITE PURGE TANK	1
13	RFEM-100	RUBBER FEET EKOM MOTOR	8
14	RFV-100	RUBBER MOUNTING FEET	4
15	CV-375D-100	CHECK VALVE 3/8"	2
16	EAAD	ELITE ALTERNATE AIR INTAKE - DUAL	1
17	TIF-100	AIR INTAKE ELEMENT - DUAL	1
18	HA-24-250	HOSE ASSEMBLY 24'	1
19	EMM	ELITE MOTOR MOUNT	2

TROUBLESHOOTING

Dual Elite Series Oilless Air Compressor



Dual Elite Series Oilless Air Compressor Diagram



IMPORTANT SAFETY INFORMATION & WARNINGS

Installation Warnings

- Manufacturer recommends installation to be performed by qualified service personnel.
- See page 15 for a breakdown of gross weight by model.
- All units are equipped with several pressure relief components. These include: one (1) Purge Valve set to release pressure at 125PSI and two (2) Pressure Relief Valves set to release pressure at 165PSI.
FAILURE TO USE PROPER EQUIPMENT TO MOVE AND INSTALL UNIT(S) COULD RESULT IN INJURY.

Potential Hazards

- Only components meeting IEC safety standards are used to assemble unit(s).
- Manufacturer recommends using appropriate signage to warn of potential hazards.
- Power cord should be routed along the wall and away from walkway to avoid tripping.
- All components are selected and engineered to prevent overloading of any kind to the unit(s) and are within the acceptable industry standard temperature limits.
- Design of the unit(s) ensures that enclosures and other components meet the requirements as mentioned in IEC 60601-1.
- See page 4 of this manual for information related to Environmental Operating Conditions.
- Humidity testing has been performed as per IEC 60601-1.
- All components are mounted securely and protected by suitable means such as screws, nuts/bolts, UL approved sheaths, crimping, etc. per the assembly instructions.
- Adhere to all manufacturer warning and safety labels located on unit(s).

Pressure Relief Safety Information

- Safety Valves and Pressure gauges are calibrated.
- Pressure switches are verified to work in the range of 80-100PSI during assembly.
- All units are equipped with several pressure relief components. These include: two (2) Purge Valves set to release pressure at 125PSI and one (1) Pressure Relief Valve set to release pressure at 165PSI.
- Pressure valves are designed with two (2) horizontal facing ports for pressure evacuation. The design is intended to divert any direct pressure from individual(s) within the vicinity of the unit.

Maintenance

- Manufacturer recommends maintenance to be performed by qualified service personnel.
- Disconnect power to unit(s) from main power source prior to performing any service or maintenance.
- All detachable parts including accessories require the use of tools and are labeled with the make, model number and dimensions on the packaging.

Electrical Safety Information

- Electrical safety testing has been performed per IEC 60601-1.
- Disconnect power to unit(s) from main power source prior to performing any service or maintenance.
- All critical components are approved with minimum flammability rating of V2.
- Motors are provided with Class B insulation, Thermal overload protection, and Current protection.
- Transformer is provided with Class A insulation and is protected with a slow blow 0.25A fuse.
- Temperature test have been performed and found to be in the acceptable range per IEC 60601-1 standards.
- Design tolerates single fault failure and fails in safe mode.
- All terminals are pre-wired to meet electrical specifications at manufacturers' warehouse and will not need to be accessed during installation.
- Units are tested to ensure proper connection and grounding before being shipped.
- System is fused to shut off power to unit in the event of excess current draw from a short circuit caused by liquid spill.

FAILURE TO ADHERE TO THE WARNINGS LISTED ABOVE COULD RESULT IN INJURY

ATTENTION: POUR NE PAS COMPROMETTRE LA PROTECTION CONTRE LES RISQUES D'INCENDIE, REMPLACER PAR UN FUSIBLE DE MÊME TYPE ET DEMÊMES CARACTÉRISTIQUES NOMINALES.

WARRANTY INFORMATION

Standard Warranty Period

- The Elite Series Oilless Compressors come with a standard 5 year or 3500 hour warranty that covers the motors.
- The standard warranty period on all other parts for the Elite Series Oilless Compressor is 2 years.

Warranty Claims Process

- If you believe the unit is in need of repair, please call your preferred dental dealer and speak with a qualified technician.

Warranty Disclosures

- The Elite Series Rocky Compressor is not intended for use with Dental Milling Machines or 3D Dental Printers. Doing so will void all manufacturer warranties.
- Improper installation without adequate ventilation will void all manufacturer warranties.
- Improper installation in spaces where temperatures will exceed manufacturers' recommendations will void all warranties.
- Improper installation without adequate voltage and electrical connections will void all warranties.
- Failure to adhere to manufacturers recommendations for installation and service will void all warranties.

Units purchased in error are subject to a 15% restocking fee plus applicable freight charges.

Return Policy

- No returns are authorized without first acquiring a Returned Merchandise Authorization (R.M.A.).
- All returns are subject to a 15% restocking fee.
- No returns are authorized after 60 days from the date of shipping.



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