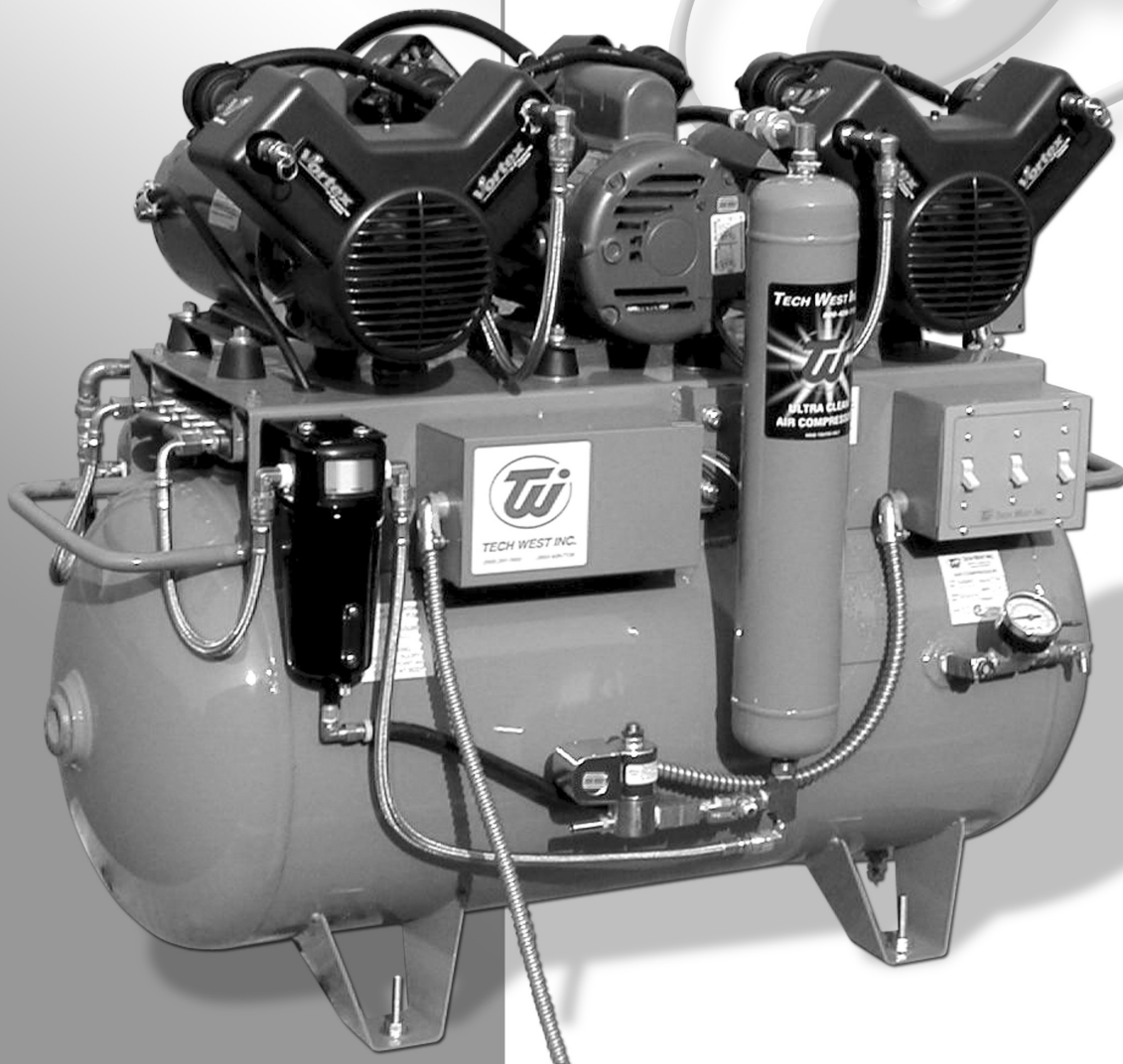


ULTRA CLEAN OILLESS COMPRESSOR



INSTALLATION AND SERVICE MANUAL

Revised 5-16

 **TECH WEST INC.**

Manufacturers of Dental Vacuum
and Air Systems

2625 N. Argyle Ave. • Fresno, CA 93727
(559) 291-1650 • (800) 428-7139 • FAX (559) 348-9677



ULTRA CLEAN OILLESS COMPRESSOR

INSTALLATION AND SERVICE MANUAL

This manual is for the installation and service of Tech West's Ultra Clean Oilless Compressors.

CONTENTS

Installation	
Location Requirements	2
Figure 1: Wire and Breaker Sizes	2
Ultra Clean Oilless Installation Steps	3
Ultra Clean Oilless Compressor Connections	4
Ultra Clean Oilless Start Up	5
Ultra Clean Oilless Maintenance	6
Ultra Clean Oilless Compressor Motor Assembly Breakdown	7-8
Coalescing Filter Parts Breakdown	9
Desiccant Dryer Parts Breakdown	10-11
Gauge and Moisture Indicator Assembly Breakdown	12
Single Ultra Clean Oilless Compressor Assembly	13
Dual Ultra Clean Oilless Compressor Assembly	14
Triple Ultra Clean Oilless Compressor Assembly	15

TROUBLE SHOOTING

Single Compressor Trouble Shooting	16-17
Dual Compressor Trouble Shooting	18-19
Triple Compressor Trouble Shooting	20-21
Air Line Sizing Chart	22
Maintenance & Service	23-24
Notes Sheet	

ULTRA CLEAN OILLESS COMPRESSOR INSTALLATION

1. OILLESS COMPRESSOR LOCATION REQUIREMENTS

The Ultra Clean Oilless Compressor location should be level, accessible and well ventilated.

If the Ultra Clean Oilless Compressor will be located in a confined space, provide adequate ventilation.

Electrical

- (1) Line voltage must be within the limits of Figure 1 below. (Install a “buck-boost transformer” if line voltage is not between these values.) Provide a separate line for each motor. Circuit breaker switches must be 20 - 30 amp depending on model and voltage necessary.
- (2) Local code may require you to provide one quick disconnect (safety switch) for each compressor motor.
- (3) See Figure 1 below for breaker size and line voltage.

CAUTION - Voltage must be 208/240 V or motor damage may occur.

CAUTION - Voltage must be 110/130 V or motor damage may occur.

Figure 1: Recommended Wire and Breaker Size

Model	Voltage	Amperage	Wire Size (Gauge)	Recommended Breaker Size
Single Head Compressors				
ACO2S1	110/115	14.5	12	20
ACO2S2	208/230	7.2	12	20
Dual Head Compressors				
ACO4D2	208/230	14.4	10	30
Triple Head Compressors				
ACO6T2	208/230	21.6	10	30

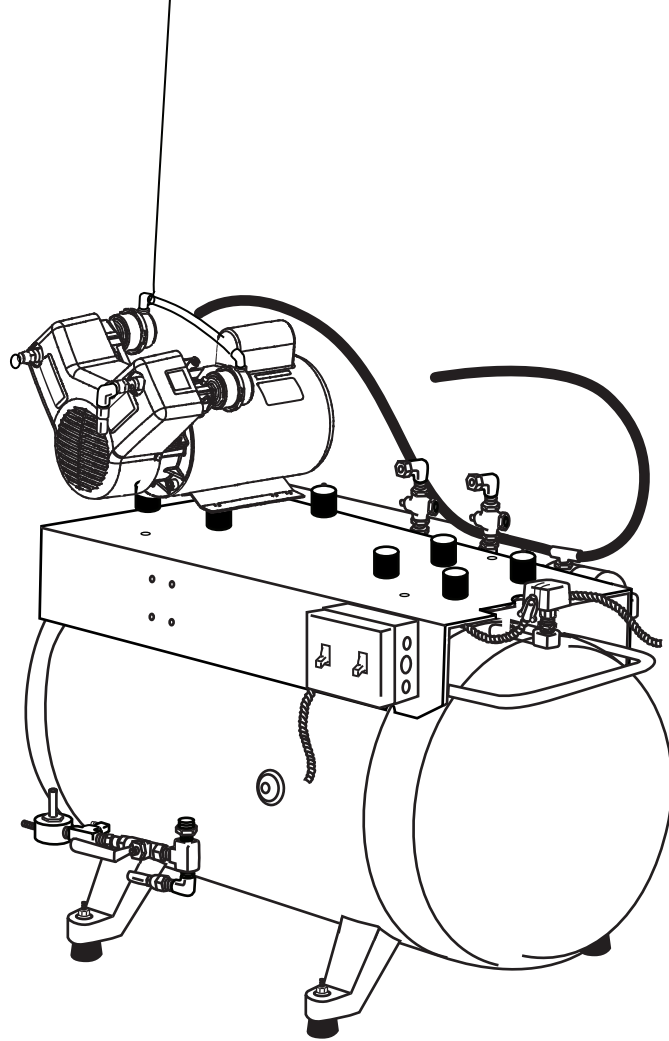
ULTRA CLEAN OILLESS COMPRESSOR INSTALLATION

2. **INSTALLATION STEPS**

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 100 degrees Fahrenheit maximum.

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



ULTRA CLEAN OILLESS COMPRESSOR INSTALLATION

4. 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.

5. 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.

ULTRA CLEAN OILLESS COMPRESSOR

INSTALLATION

6. GENERAL SERVICE INFORMATION

For parts and service on VX series products 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.

With these conditions in mind, we recommend the following preventative maintenance schedule.

RECOMMENDED MAINTENANCE FOR VX MODELS	HOURS Cont. Duty Maximum Pressure	TIME Based on 100% Duty Cycle
Minor Service Kits, Piston Rings & Springs, Skirts, Etc.	8,000 Hours	12 months
Major Replacement Kit, Piston & Rod Assemblies	12,000 Hours	18 months
Replace inlet Filter	4,000 Hours	6 months

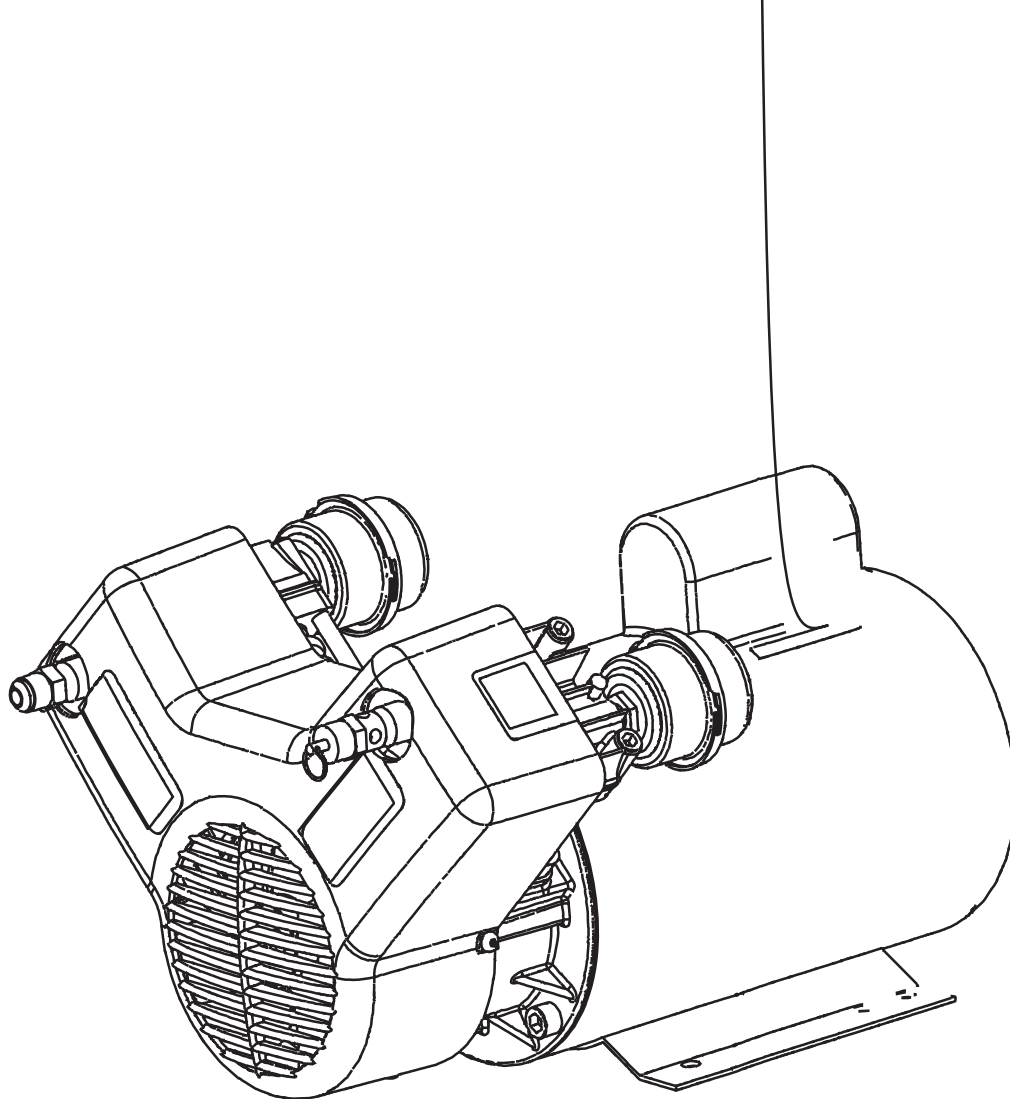
7. PERIODIC SERVICING

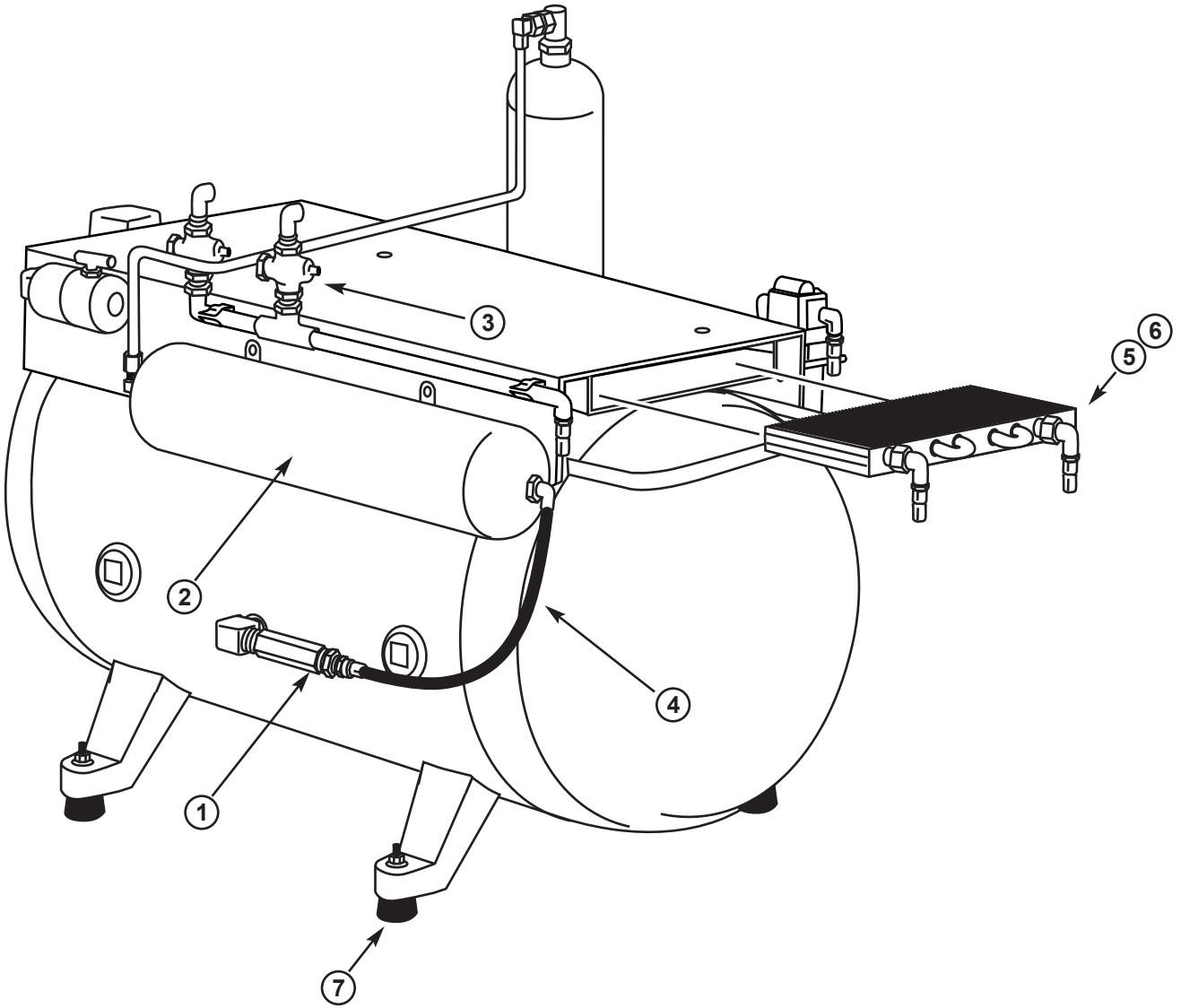
MONTHLY SERVICING

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

YEARLY SERVICING

- Repeat all of the monthly servicing.
- Replace the dessicant air dryer.(Part #: RDC-100)
- Replace the alternate air filter. (Part #: TIF-100)
- Replace the intake filters on the Oilless compressor head. (Part #: TIF-100))
- Replace the moisture indicator on the compressor. (Part #: MI-100)
- Check the coalescing filter and change if needed. (Part #: CFEO-375)

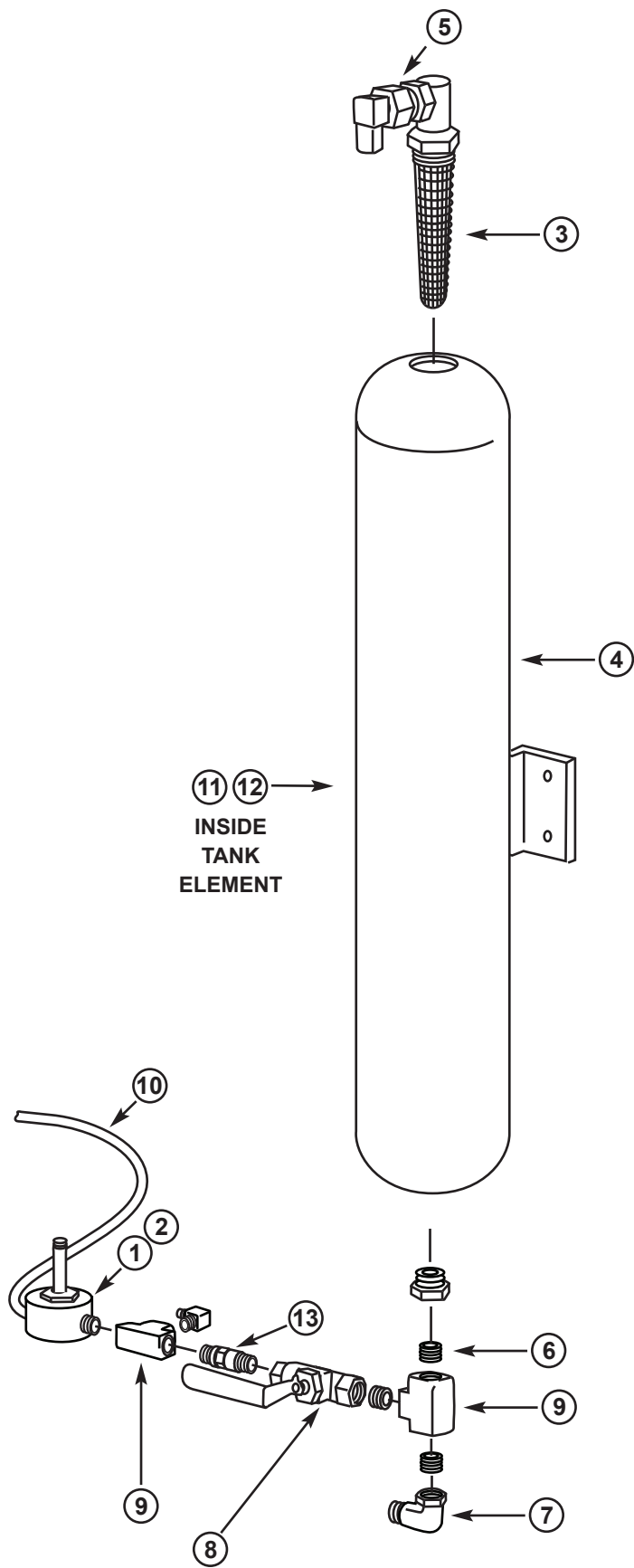




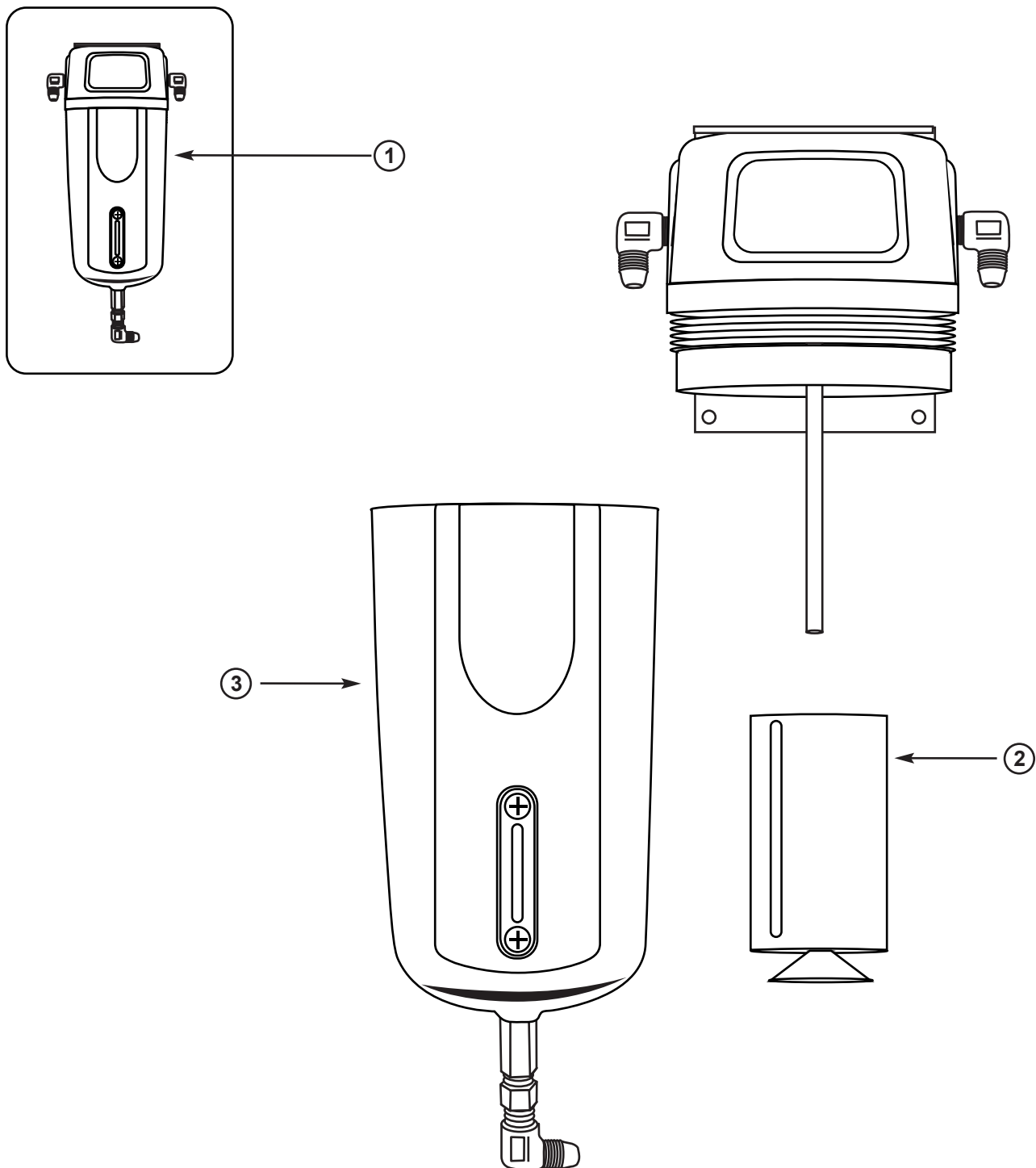
REAR VIEW ASSEMBLY AND PARTS LIST

KEY	PART NO.	DESCRIPTION	UNIT
1	CV-500D-100	1/2" CHECK VALVE	1
2	CPT-100	COMPRESSOR PURGE TANK	1
3.	CV-375D-100	3/8" CHECK VALVE	1-3
4	HA-10-250	1/4 HOSE ASSEMBLY - 10" LONG	1
5	DPC-1	DRYER PRE COOLER SINGLE COMPRESSOR	1
6	DPC-2	DRYER PRE COOLER DUAL & TRIPLE COMPRESSOR	1
7	RFV-100	RUBBER MOUNTING FEET	4

NEW DESICCANT AIR DRYER ASSEMBLY

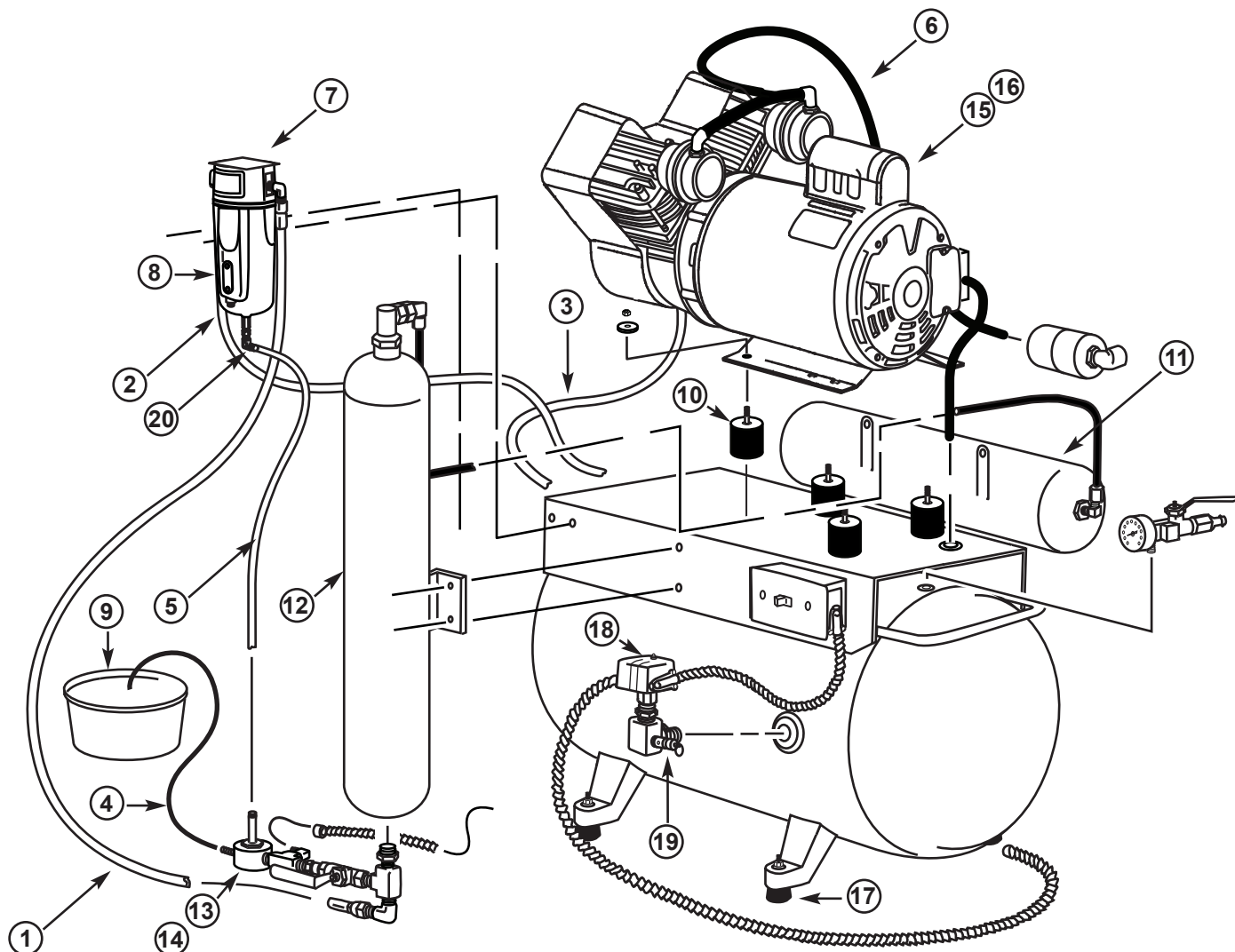


KEY	PART NO.	DESCRIPTION	UNIT
1	DSV-115	115V PURGE SOLENOID VALVE	1
2	DSV-230	230V PURGE SOLENOID VALVE	1
3	AS-500	1/2 FILTER ASSY	1
4	RDC-100	REPLACEMENT DESSICANT TANK	1
5	MV-250	METERING VALVE	1
6	SN-250-CL	STAINLESS STEEL NIPPLE 1/4	3
7	FE-4-6	FLAIR FITTING 1/4 X 3/8	1
8	BV-250	BALL VALVE 1/4	1
9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



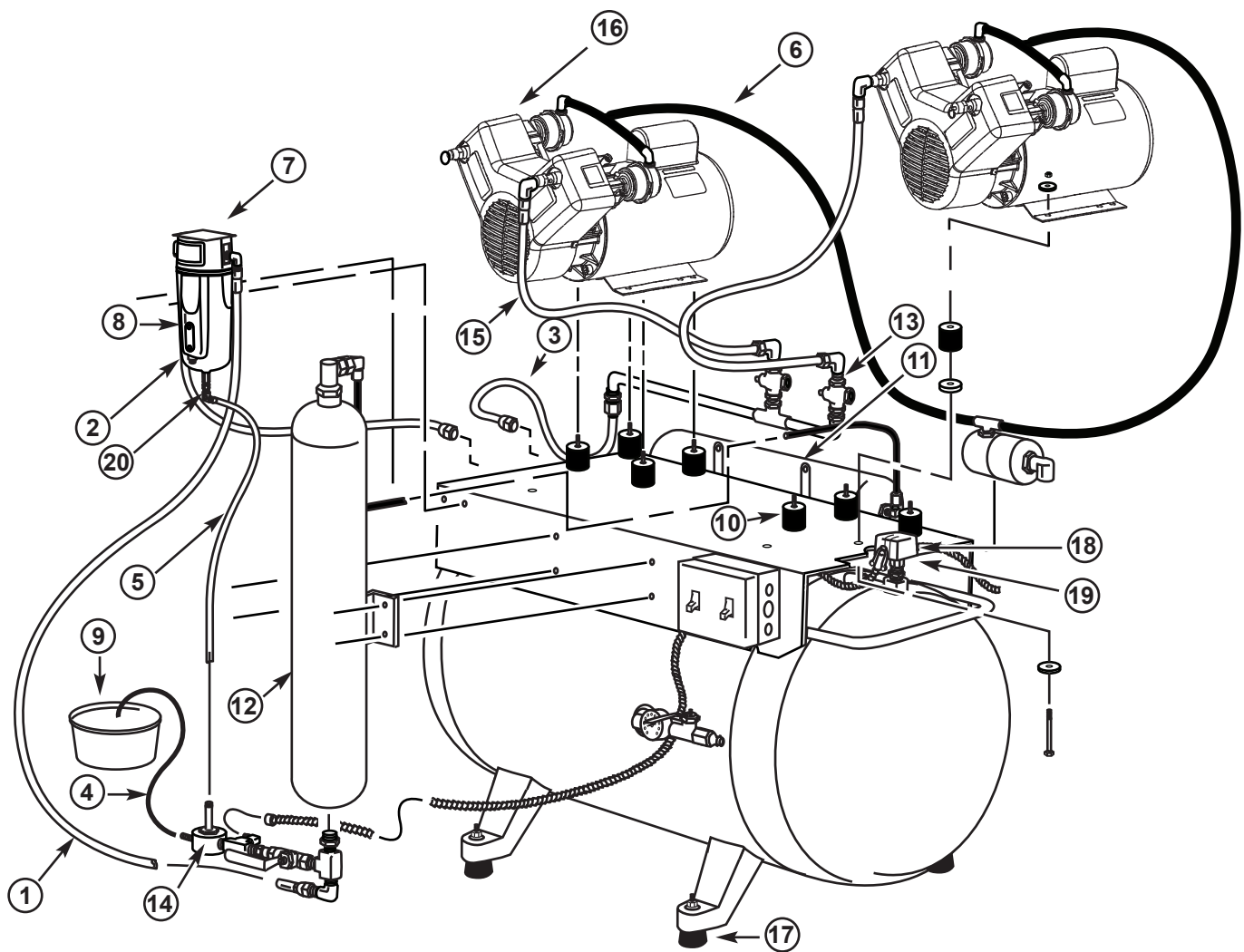
FILTER ASSEMBLY

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



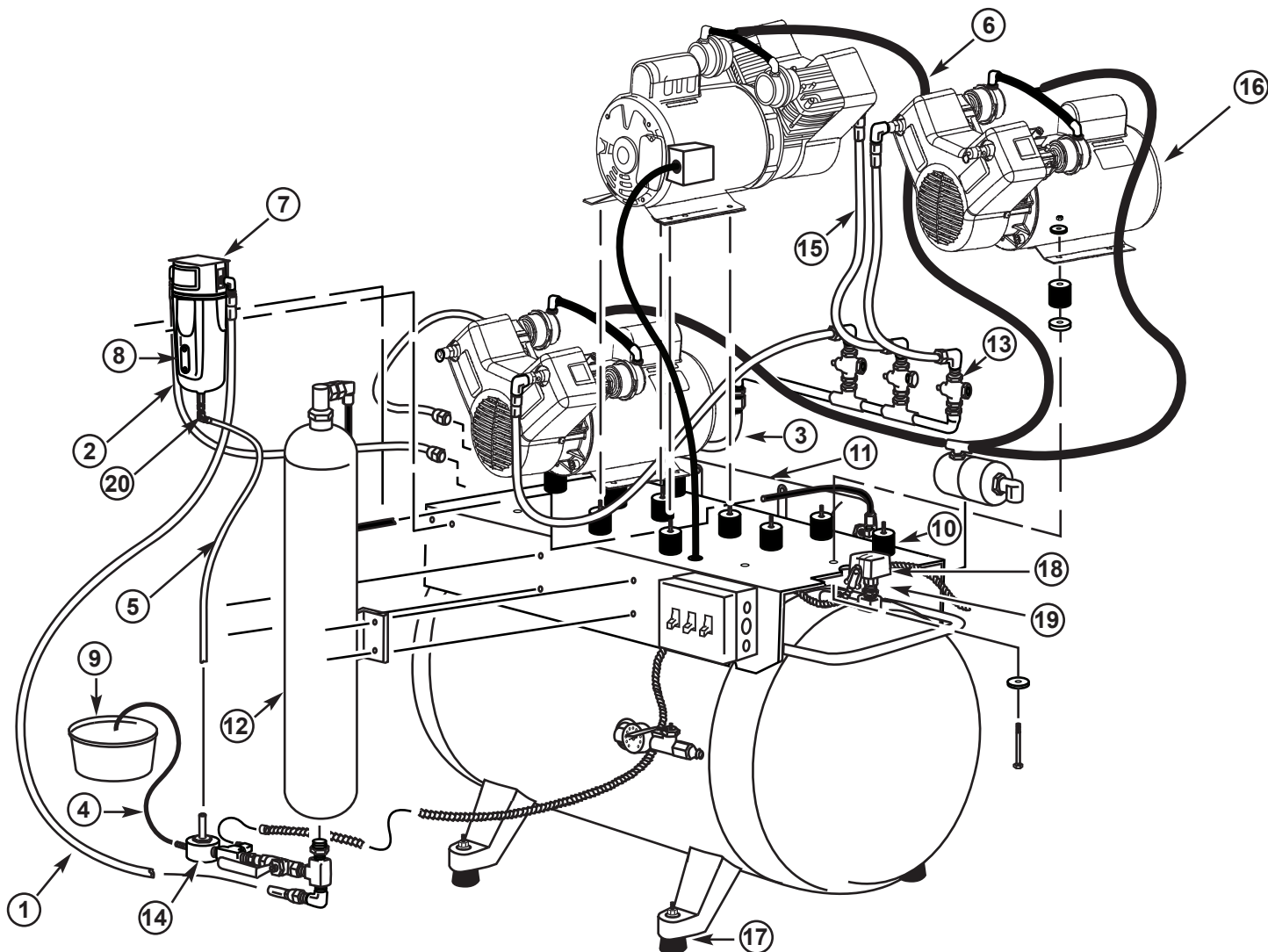
SINGLE ULTRA CLEAN OILLESS COMPRESSOR

KEY	PART NO.	DESCRIPTION	UNIT
1	SBHA-21-375	STEEL BRAID HOSE ASSEMBLY	1
2	SBHA-7.5-375E	STEEL BRAID HOSE ASSEMBLY	1
3	SBHA-11-375E	STEEL BRAID HOSE ASSEMBLY	1
4	FPH-375	PURGE FLEX HOSE CLEAR	PER FT
5	ZZACS61	1/4 HOSE ASSMEBLY	1
6	PFT-625	POLY FLO TUBE 5/8	PER FT
7	CFAO-375	COALESCING FILTER 3/8	1
8	CFE0-375	COALESCING FILTER ELEMENT ONLY	1
9	DPB-100	DRYER PURGE BUCKET	1
10	RIC-GAST	RUBBER MOUNTING FEET	4
11	CPT-100	COMPRESSOR PURGE TANK	1
12	RDC-100	REPLACEMENT DESICCANT CARTRIDGE	1
13	DSV-115	PURGE VALVE SOLENOID VALVE 115V	1
14	DSV-230	PURGE VALVE SOLENOID VALVE 230V	1
15	TOM-1-115	OILLESS MOTOR 1 HP 115V	1
16	TOM-1-230	OILLESS MOTOR 1 HP 230V	1
17	RFV-100	RUBBER MOUNTING FEET	4
18	PSC-3	PRESSURE SWITCH	1
19	POVA-100	SAFETY POP OFF VALVE	1
20	CV-125D	1/8 CHECK VALVE	1



DUAL ULTRA CLEAN OILLESS COMPRESSOR

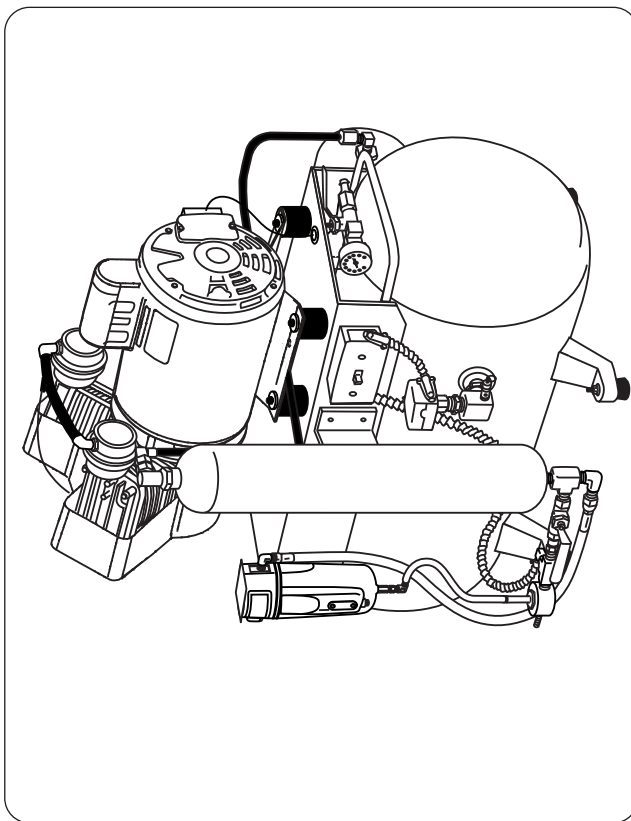
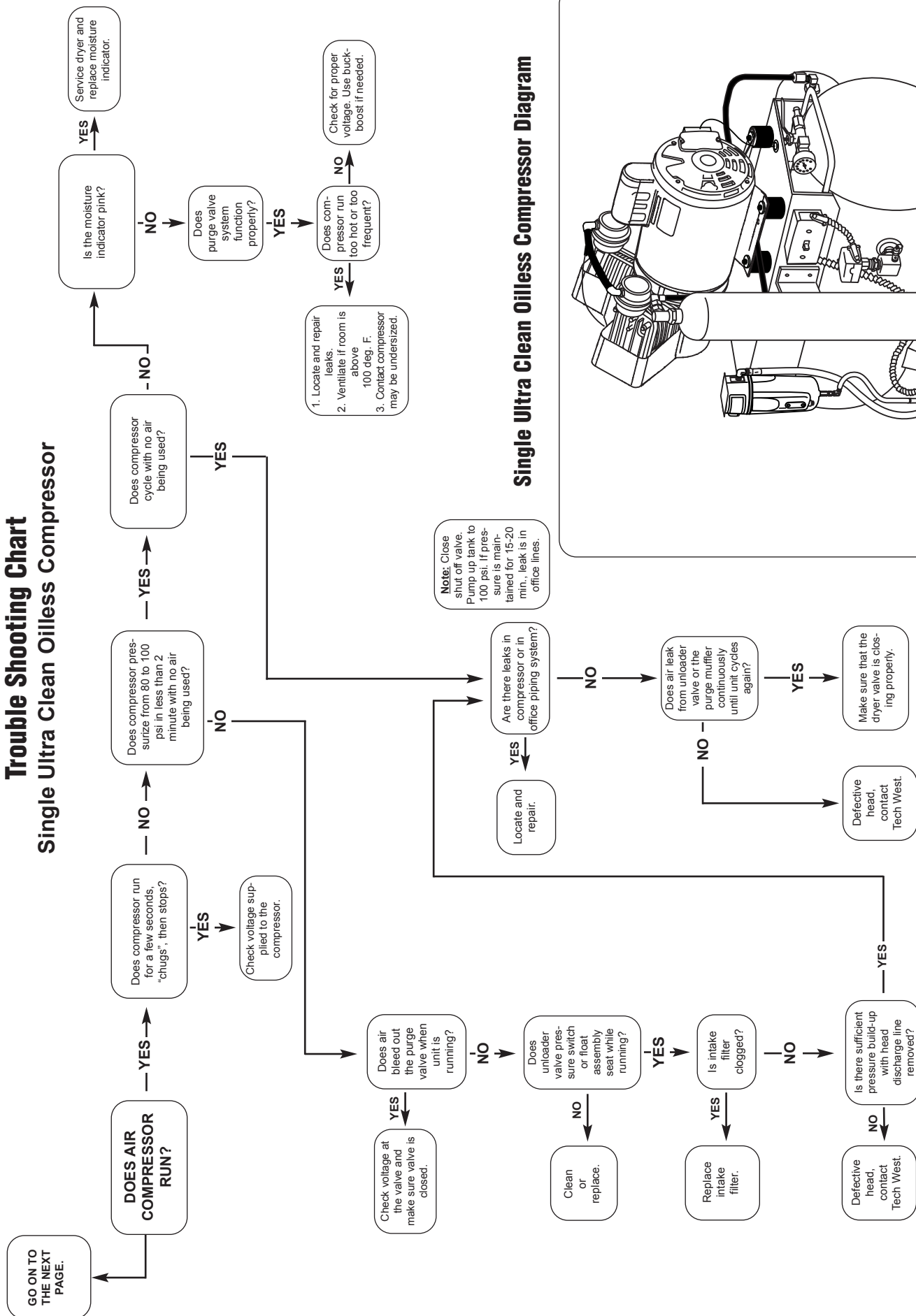
KEY	PART NO.	DESCRIPTION	UNIT
1	SBHA-21-375	STEEL BRAID HOSE ASSEMBLY	1
2	SBHA-10-375E	STEEL BRAID HOSE ASSEMBLY	1
3	SBHA-9-375E	STEEL BRAID HOSE ASSEMBLY	1
4	FPH-375	PURGE FLEX HOSE CLEAR	PER FT
5	ZZACS61	1/4 HOSE ASSEMBLY	1
6	PFT-625	POLY FLO TUBE 5/8	PER FT
7	CFAO-375	COALESCING FILTER 3/8	1
8	CFE0-375	COALESCING FILTER ELEMENT ONLY	1
9	DPB-100	DRYER PURGE BUCKET	1
10	RIC-GAST	RUBBER MOUNTING FEET	8
11	CPT-100	COMPRESSOR PURGE TANK	1
12	RDC-100	REPLACEMENT DESICCANT CARTRIDGE	1
13	CV-375D-100	3/8 CHECK VALVE	2
14	DSV-230	PURGE VALVE SOLENOID VALVE 230V	1
15	SBHA-18-375	STEEL BRAID HOSE ASSEMBLY	2
16	TOM-1-230	OILLESS MOTOR 1 HP 230V	2
17	RFV-100	RUBBER MOUNTING FEET	4
18	PSC-3	PRESSURE SWITCH	1
19	POVA-100	SAFETY POP OFF VALVE	1
20	CV-125D	1/8 CHECK VALVE	1



TRIPLE ULTRA CLEAN OILLESS COMPRESSOR

KEY	PART NO.	DESCRIPTION	UNIT
1	SBHA-21-375	STEEL BRAID HOSE ASSEMBLY	1
2	SBHA-10-375E	STEEL BRAID HOSE ASSEMBLY	1
3	SBHA-9-375E	STEEL BRAID HOSE ASSEMBLY	1
4	FPH-375	PURGE FLEX HOSE CLEAR	PER FT
5	ZZACS61	1/4 HOSE ASSEMBLY	1
6	PFT-625	POLY FLO TUBE 5/8	PER FT
7	CFA0-375	COALESCING FILTER 3/8	1
8	CFE0-375	COALESCING FILTER ELEMENT ONLY	1
9	DPB-100	DRYER PURGE BUCKET	1
10	RIC-GAST	RUBBER MOUNTING FEET	12
11	CPT-100	COMPRESSOR PURGE TANK	1
12	RDC-100	REPLACEMENT DESICCANT CARTRIDGE	1
13	CV-375D-100	3/8 CHECK VALVE	3
14	DSV-230	PURGE VALVE SOLENOID VALVE 230V	1
15	SBHA-18-375	STEEL BRAID HOSE ASSEMBLY	3
16	TOM-1-230	OILLESS MOTOR 1 HP 230V	3
17	RFV-100	RUBBER MOUNTING FEET	4
18	PSC-3	PRESSURE SWITCH	1
19	POVA-100	SAFETY POP OFF VALVE	1
20	CV-125D	1/8 CHECK VALVE	1

Trouble Shooting Chart

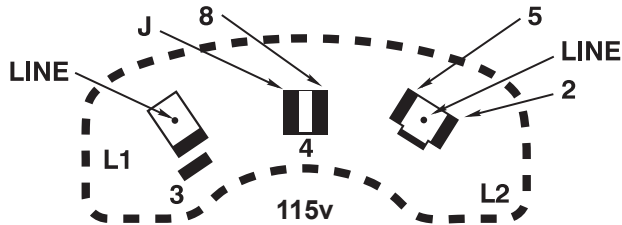


Single Ultra Clean Oilless Compressor Diagram

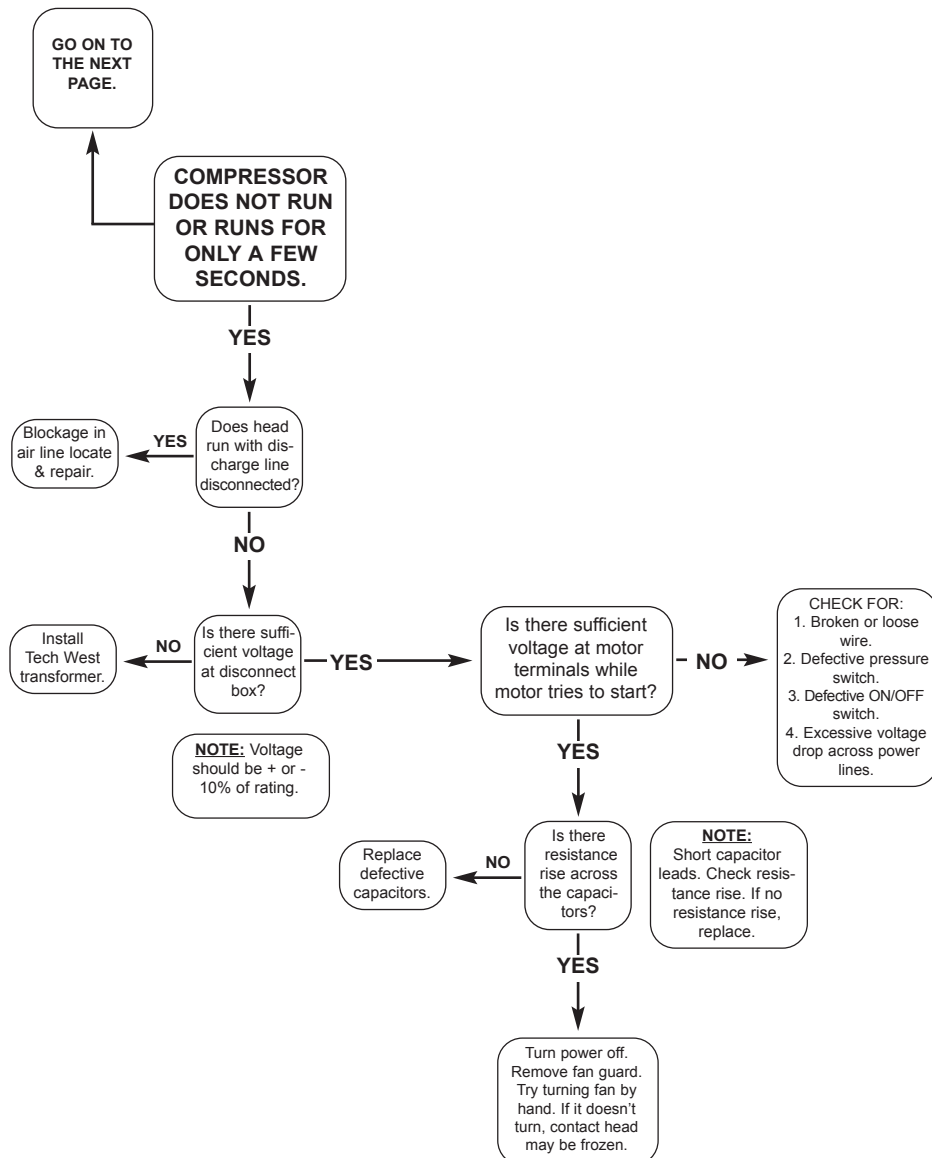
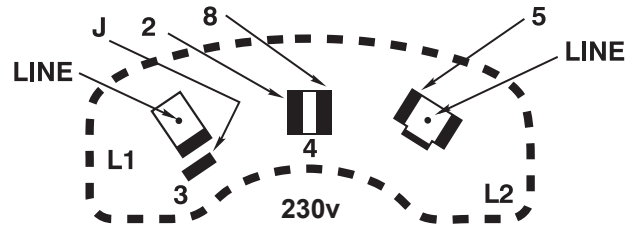
Wiring Diagram

Single Ultra Clean Oilless Compressor

LOW VOLTAGE

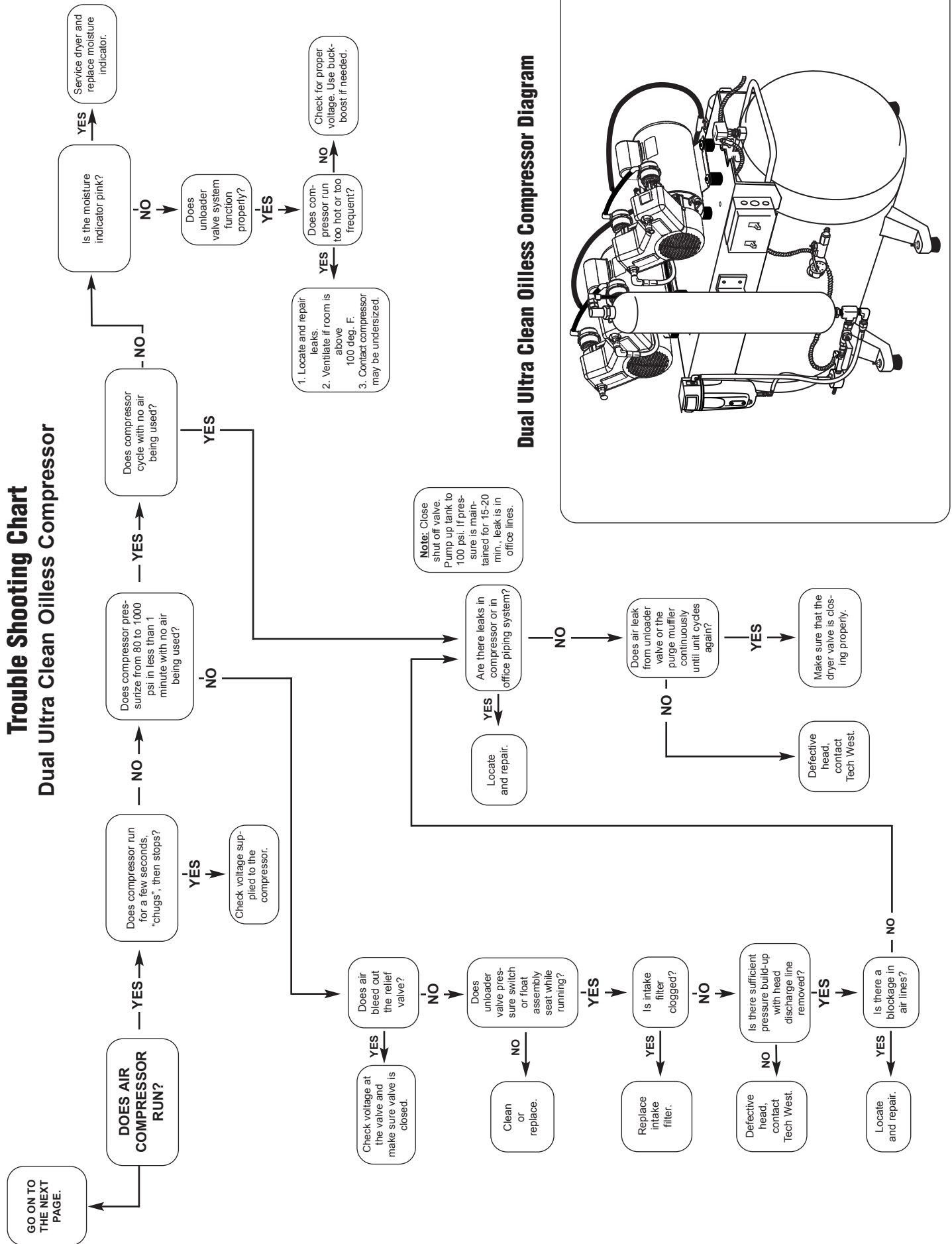


HIGH VOLTAGE

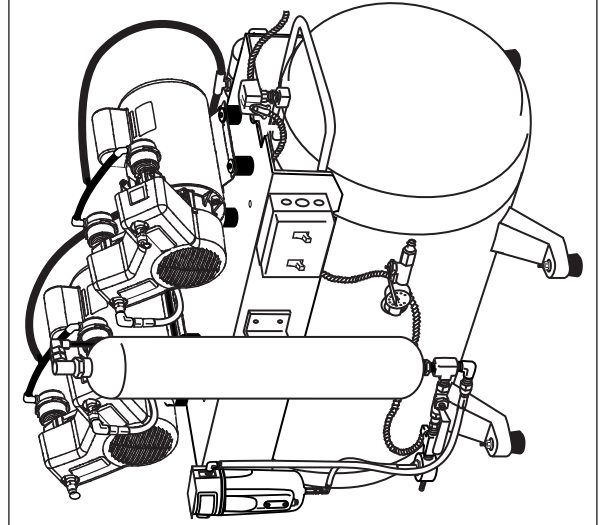


Trouble Shooting Chart

Dual Ultra Clean Oilless Compressor



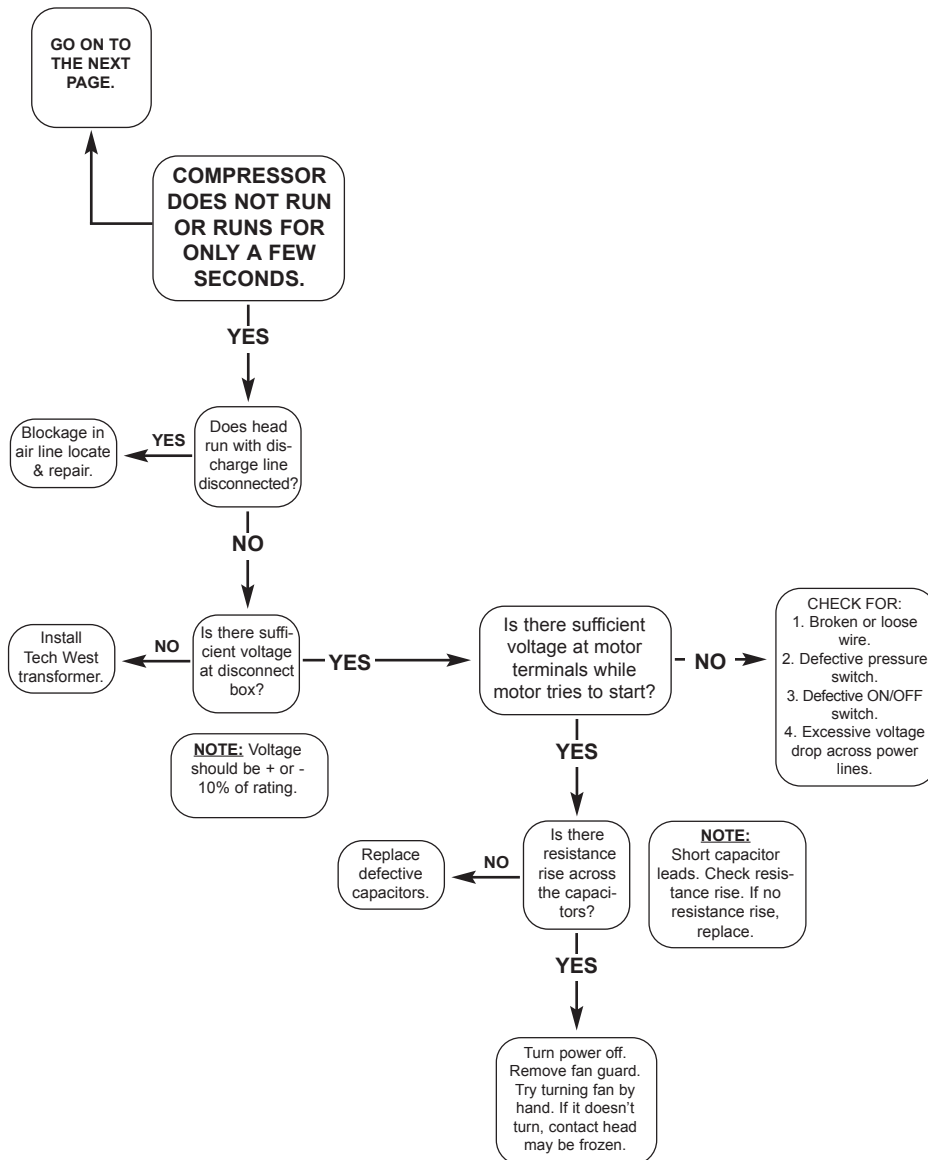
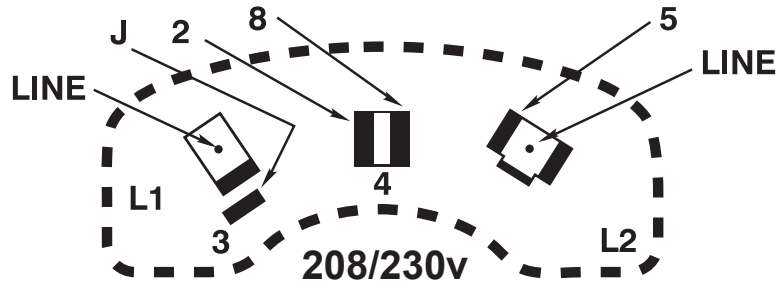
Dual Ultra Clean Oilless Compressor Diagram



Wiring Diagram

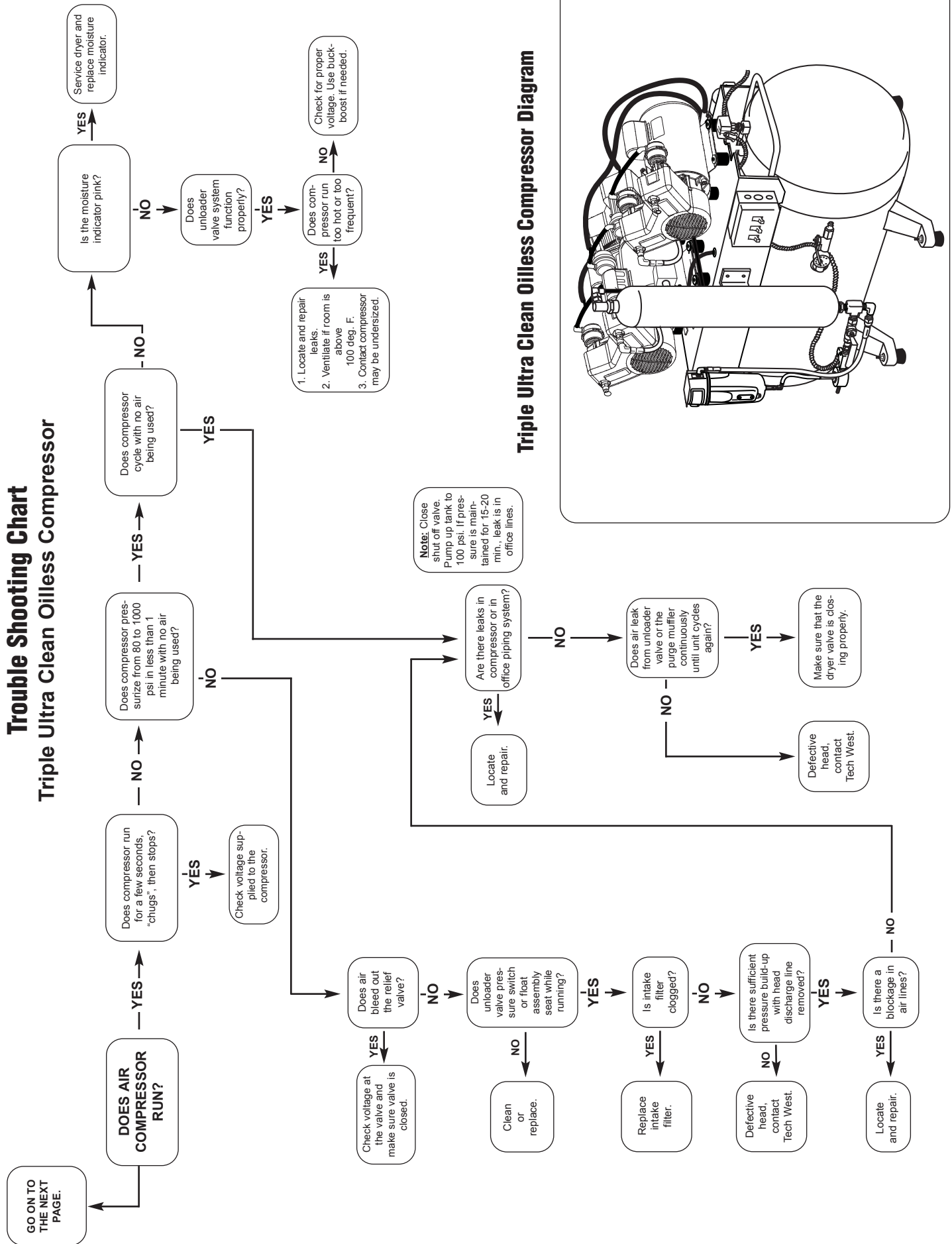
Dual Ultra Clean Oilless Compressor

HIGH VOLTAGE

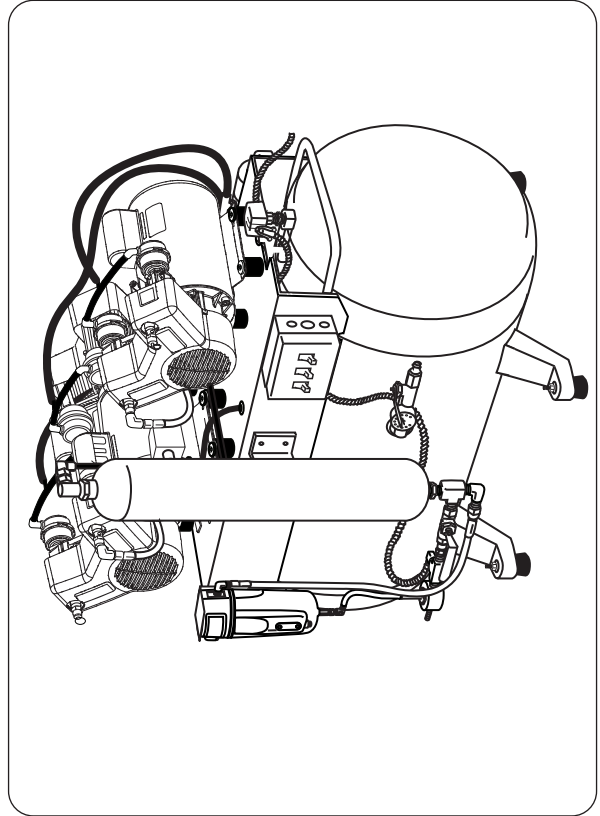


Trouble Shooting Chart

Triple Ultra Clean Oilless Compressor



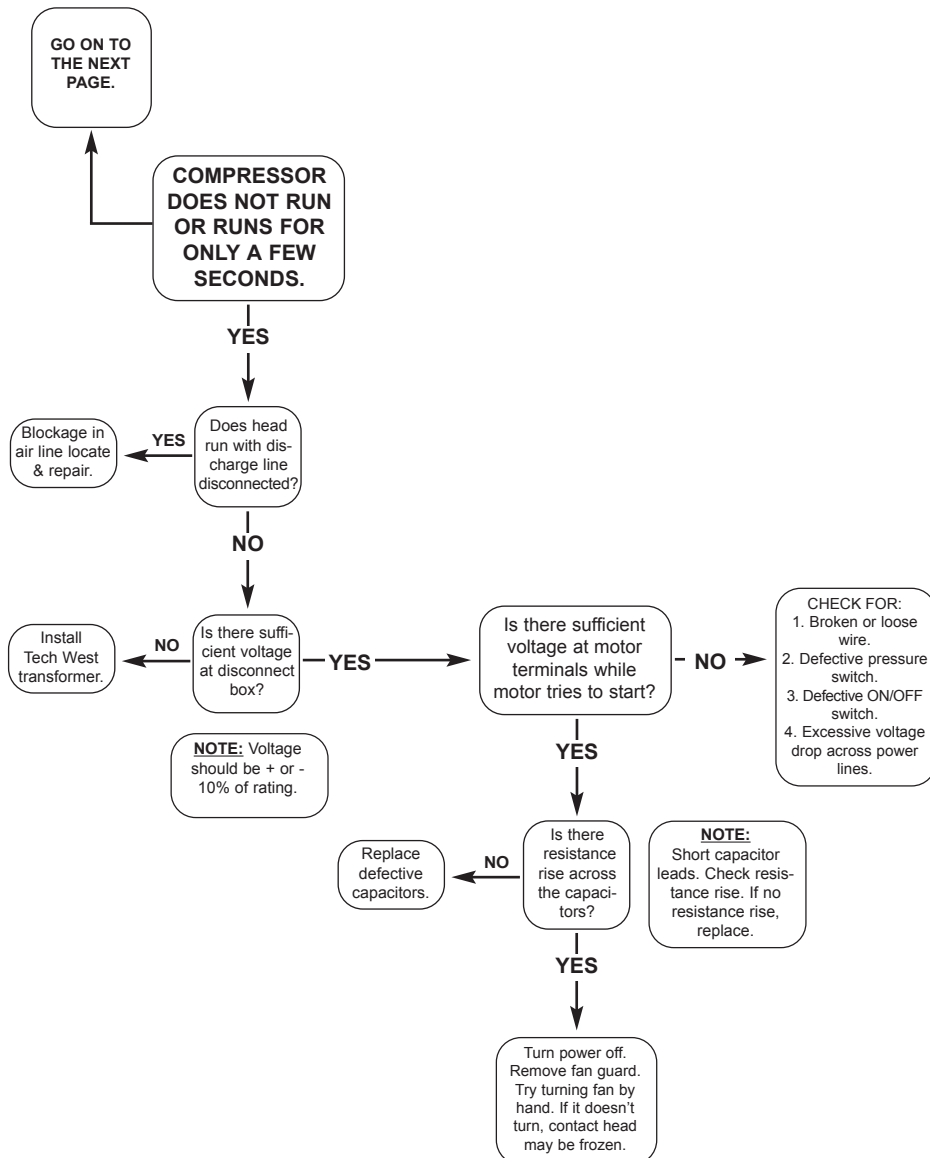
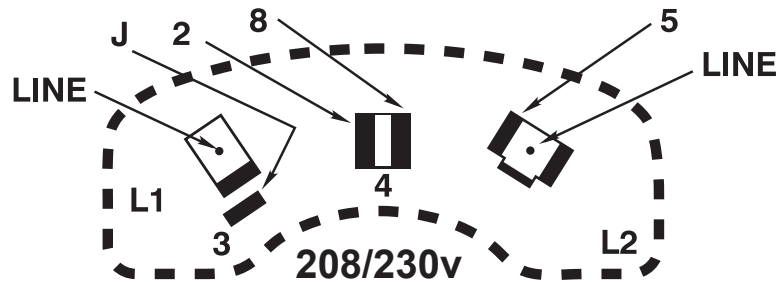
Triple Ultra Clean Oilless Compressor Diagram

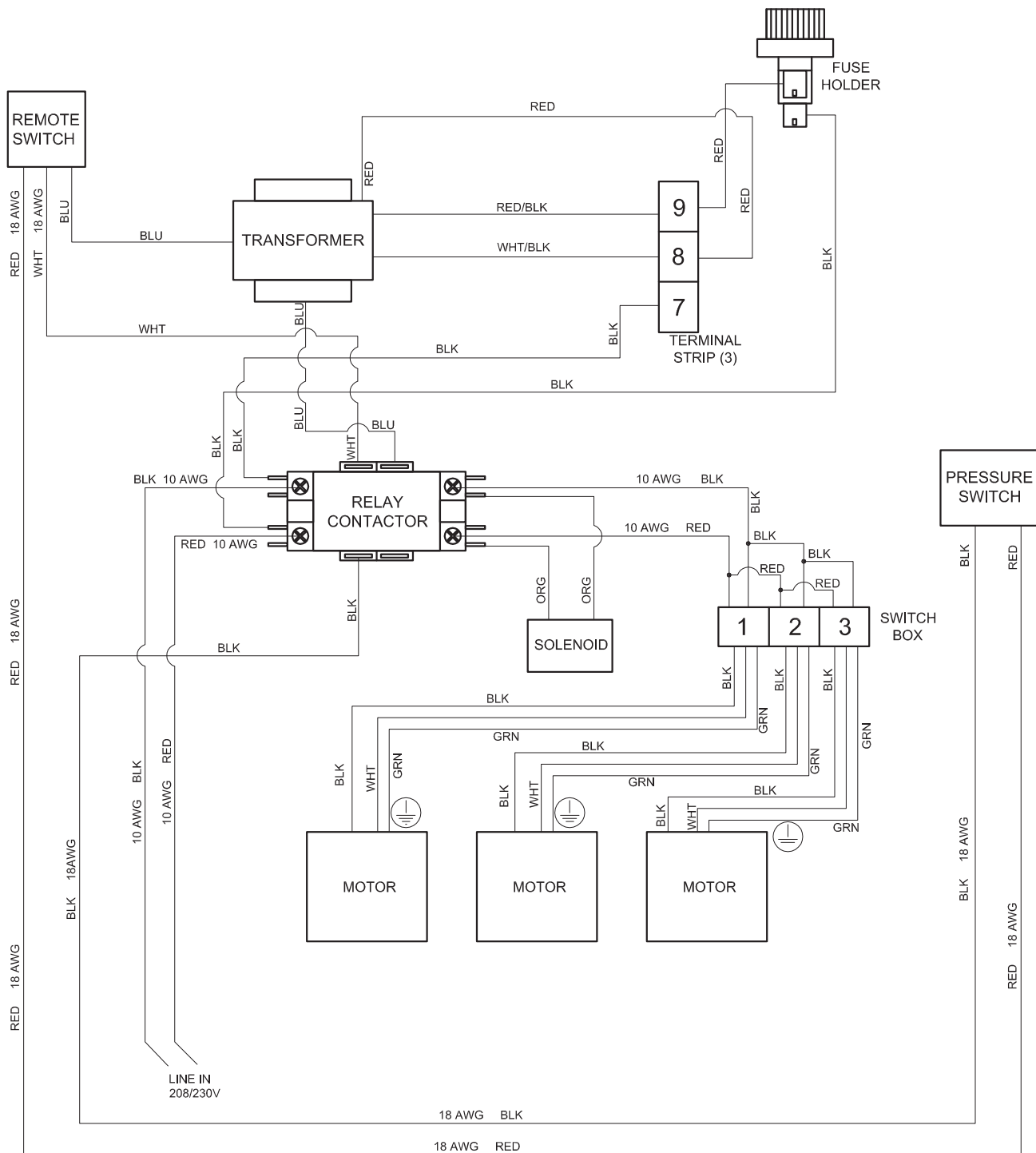


Wiring Diagram

Triple Ultra Clean Oilless Compressor

HIGH VOLTAGE





WIRE SIZE:

- Line In = 10 AWG
- Motor Switches to Relay Contactor = 10 AWG
- Motor Switch Jumpers = 12 AWG
- Pressure Switch Wires = 18 AWG

- Fuse Holder to Terminal Strip & Contactor = 18 AWG
- Terminal Strip to Relay Contactor = 18 AWG
- Motor Wires to Motor Switches = 14 AWG

Figure 3: Compressor Wiring Diagram

Maintenance & Service / Notes

This image shows a full page of blank, lined paper. It features approximately 28 horizontal black lines spaced evenly across the page, typical of standard notebook paper. The lines are thin and extend from the left edge to the right edge. There are no margins, text, or other markings on the page.

Maintenance & Service / Notes

[illegible]

Maintenance & Service / Notes

[illegible]



TW **TECH WEST INC.**

Manufacturers of Dental Vacuum
and Air Systems

2625 N. Argyle Ave. • Fresno, CA 93727
(559) 291-1650 • (800) 428-7139 • FAX (559) 348-9677