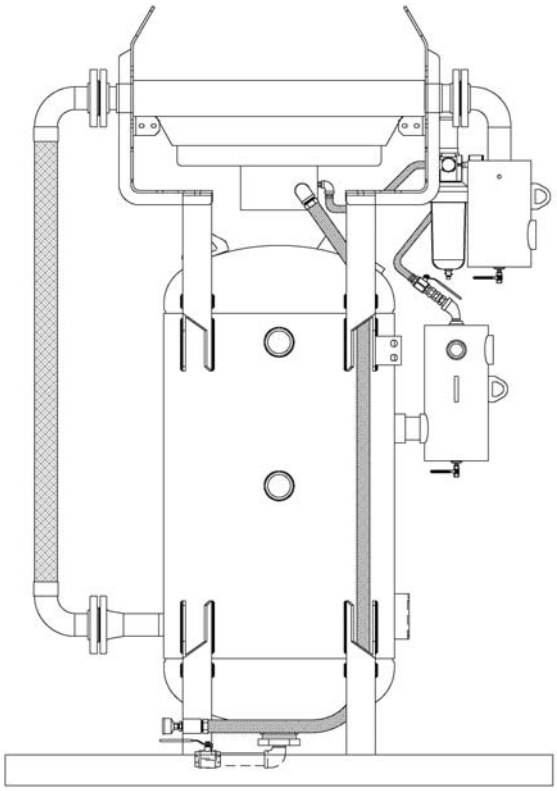
ACS/ADS AIRPREP SYSTEM

OPERATION AND MAINTENANCE MANUAL

August 2020



SCHMIDT®

SAVE THIS MANUAL AND MAKE AVAILABLE
TO ALL USERS OF THIS EQUIPMENT!

Manual Part Number 7200-260 rev10-20
(Available for downloading from SchmidtAbrasiveBlasting.com)

AXXIOM MANUFACTURING, INC.™
engineered abrasive systems

SCHMIDT®

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Visit us at www.SchmidtAbrasiveBlasting.com

Manual

WARNING

1. **Any person intending to operate this equipment or any person intending to be in the vicinity during its operation must receive proper training from his/her supervisor, employer and/or supplier. If this equipment is to be leased or rented, the supplier must assure that the lessee or renter has received proper training before the lessee or renter takes possession of the equipment. Consult Axxiom Manufacturing, Inc.**

2. **Any person authorized to operate this equipment or any person intending to be in the vicinity during its operation and who is not capable of reading and understanding this manual must be fully trained regarding the *Rules for Safer Operation* and all operating procedures, and must be made aware of all the Dangers, Warnings, and Cautions identified herein. Consult Axxiom Manufacturing, Inc.**

3. **Do Not operate any abrasive blaster or blast equipment before reading and completely understanding all the warnings, operating procedures and instructions, and the *Rules for Safer Operation* contained in this manual.**

4. **Do Not operate any abrasive blaster or blast equipment without following the *Rules for Safer Operation* and all the operating procedures and instructions. Failure to properly use blast equipment could result in serious injury or death.**

5. **Do Not perform any maintenance on any abrasive blaster or blast equipment while it is pressurized. Always depressurize the abrasive blaster vessel before loading abrasive or performing any maintenance.**

6. **Do Not use abrasives containing free silica. Silica can cause silicosis or other related respiratory damage. All operators must wear personal protective equipment for all abrasive blasting operations. Observe all applicable local, state, and federal safety regulations in conjunction with airline filters and respiratory protection. Reference OSHA 29 CFR 1910.134.**

7. **Do Not enter areas during abrasive blasting operations without breathing protection. All personnel in the vicinity of abrasive blasting operations should wear NIOSH approved air fed respirators, hoods, or helmets.**

8. **Do Not modify or alter any abrasive blaster, blast equipment or controls thereof without written consent from Axxiom Manufacturing, Inc.**

9. **Do Not use bleeder type deadman valves on any Schmidt® abrasive blaster. The use of A-BEC, Clemco or a similar bleeder type deadman valve can cause unintentional start-up without warning, which can result in serious personal injury.**

10. **Do Not sell, rent, or operate abrasive blasters without remote controls. OSHA regulations require remote controls on all blast machines. Failure to use remote controls can cause serious injury or death to the operator(s) or other personnel in the blasting area. Reference OSHA 29 CFR 1910.244(b).**

11. **Do Not repair or replace any portion of Schmidt® equipment using components that are not Schmidt® original factory replacement parts. Use of replacement components that are not Schmidt® original factory replacement parts may result in equipment failure which can result in serious personal injury and in addition will void all warranties.**

Manual Use, Explanation of Safety Symbols, and Glossary

This manual contains information needed to operate and maintain your AirPrep System. Read this entire operations and maintenance manual before using your AirPrep System. Pay close attention to the *Rules for Safer Operation* (Section 1.0), and the Dangers, Warnings, and Cautions identified.

The purpose of safety symbols and explanations are to alert operators of the possible hazards and explain how to avoid them. The safety symbols and explanations alone do not eliminate any danger. However, following the instructions given and taking proper accident prevention measures will greatly lower the risk of injury to personnel. Below are the three hazard levels as used in this manual.

WHITE LETTERS with RED BACKGROUND

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

BLACK LETTERS with ORANGE BACKGROUND

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

BLACK LETTERS with YELLOW BACKGROUND

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices that may cause property damage.

WHITE LETTERS with BLUE BACKGROUND

NOTICE: Indicates that equipment could malfunction or potentially become damaged if certain instructions are not followed.

This manual contains terms that may be specific to the abrasive blast industry. Understanding these terms will help you understand the procedures and instructions given in this manual. Please familiarize yourself with the following terms and refer to them as needed while reading this manual.

Glossary	
Term	**Definition**
Pressure Vessel	A fabricated tank (or reservoir) that is part of the AirPrep System which is filled with compressed air and deliquescent. (Also referred to as “separator tank” or “vessel”.)
Separator Tank	A fabricated tank (or reservoir) that is part of the AirPrep System which is filled with compressed air and deliquescent. (Also referred to as “pressure vessel” or “vessel”.)
Pressurize	To fill the AirPrep System vessel with compressed air manually or automatically.
Depressurize	To release all the compressed air from inside the AirPrep System vessel manually or automatically. (Also referred to as “blowdown”.)
Blowdown	To release all the compressed air from inside the AirPrep System vessel manually or automatically. (Also referred to as “depressurize”.)

0.0 Warning Label Identification and Location

Listed below are the warning labels and the corresponding hazards encountered with this equipment. Refer to Figures 0.1(a) and 0.1(b) for images of the warning decals. Refer to Figures 0.2(a), 0.2(b) and 0.2(c) for the locations of these warning decals.

No.	Qty.	Part no.	Description	Hazard
1.	2	7031-019	Air Prep System	Not Applicable
2A.	2	7031-033 7031-034 7031-035 7031-036 7031-037 7031-038 7031-051 7031-052	ADS 250 ADS 400 ADS 750 ADS 950 ADS 1200 ADS 1600 ADS 2000 ADS 2500	Not Applicable
2B.	2	7031-025 7031-026 7031-027 7031-028 7031-029 7031-030 7031-049 7031-050	ACS 250 ACS 400 ACS 750 ACS 950 ACS 1200 ACS 1600 ACS 2000 ACS 2500	Not Applicable
3.	1	7031-001	Medium “Schmidt”	Not Applicable
4A.	2	7031-007A	“Danger” Pressurized Vessel	Propelled objects will cause serious injury or death. Depressurize vessel prior to performing any maintenance. See Section 6.2.
4B.	2	7031-007B	“Danger” Pressurized Vessel	Propelled objects will cause serious injury or death. Depressurize vessel prior to performing any maintenance. See Section 6.2.
5.	1	7031-017	Inlet	Not Applicable
6.	1	7031-018	Outlet	Not Applicable
7.	1	7031-057	“Warning” Read manual before using this machine.	Read and understand operator’s manual before using this machine. Failure to follow operating instructions could result in injury or damage to equipment. See Section 1.0.
8.	1	7031-081	Fill Daily	Failure to lubricate air motor will result in motor failure. See Section 5.7.
9.	1	7031-082	“Danger” Pressurized vessel Handway Components	Propelled objects will cause serious injury or death. Incorrect or damaged handway or manway cover components can result in failure. See Section 6.5.

1) 7031-019

2A) 7031-XXX

Figure 0.1(a) – Warning decal summary (continued)

2B) 7031-XXX

3) 7031-001

4A) 7031-007A (4.5” x 8.5”)

4B) 7031-007B (3” x 6”)

5) 7031-017

6) 7031-018

7) 7031-057

8) 7031-081

9) 7031-082

Figure 0.1(b) – Warning decal summary

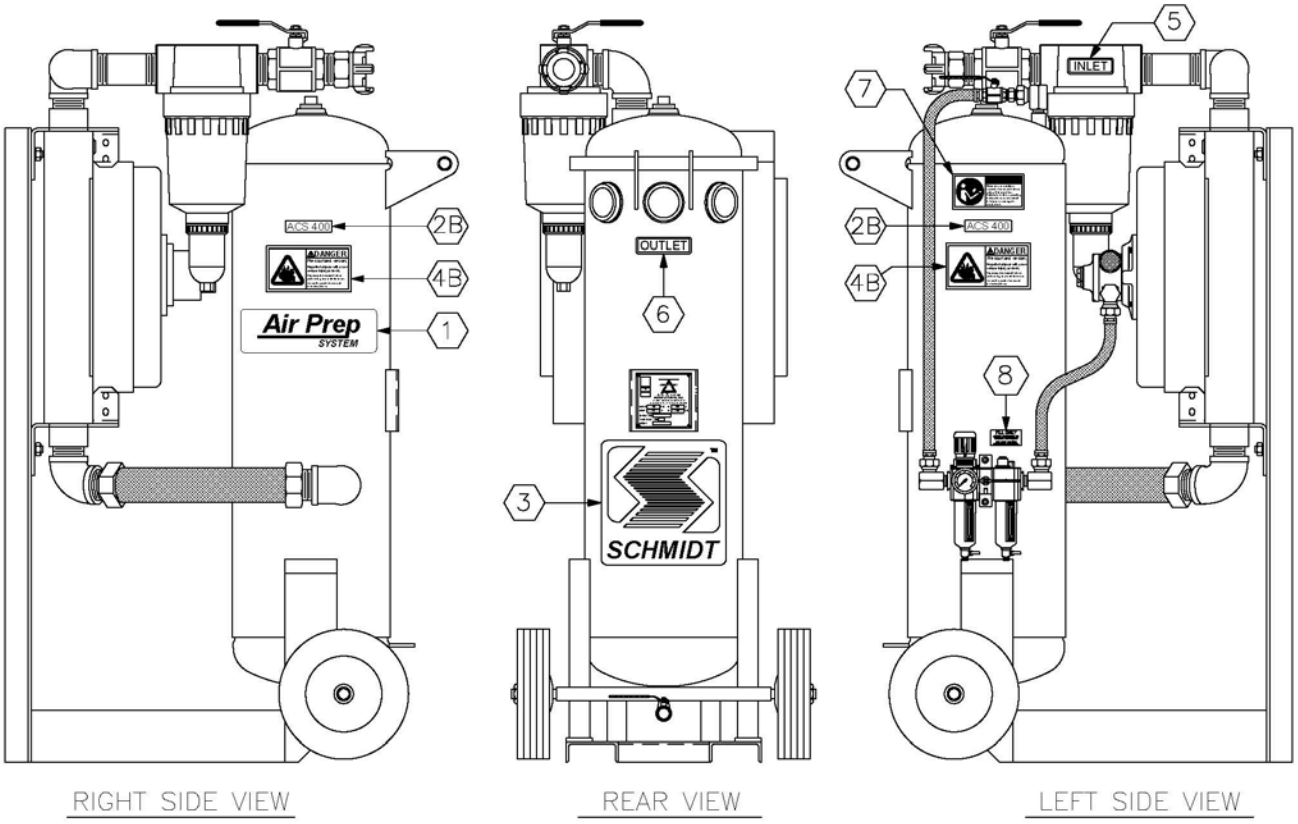

Figure 0.2(a) –Warning decal location for ACS 250-400 Portable Aftercooler

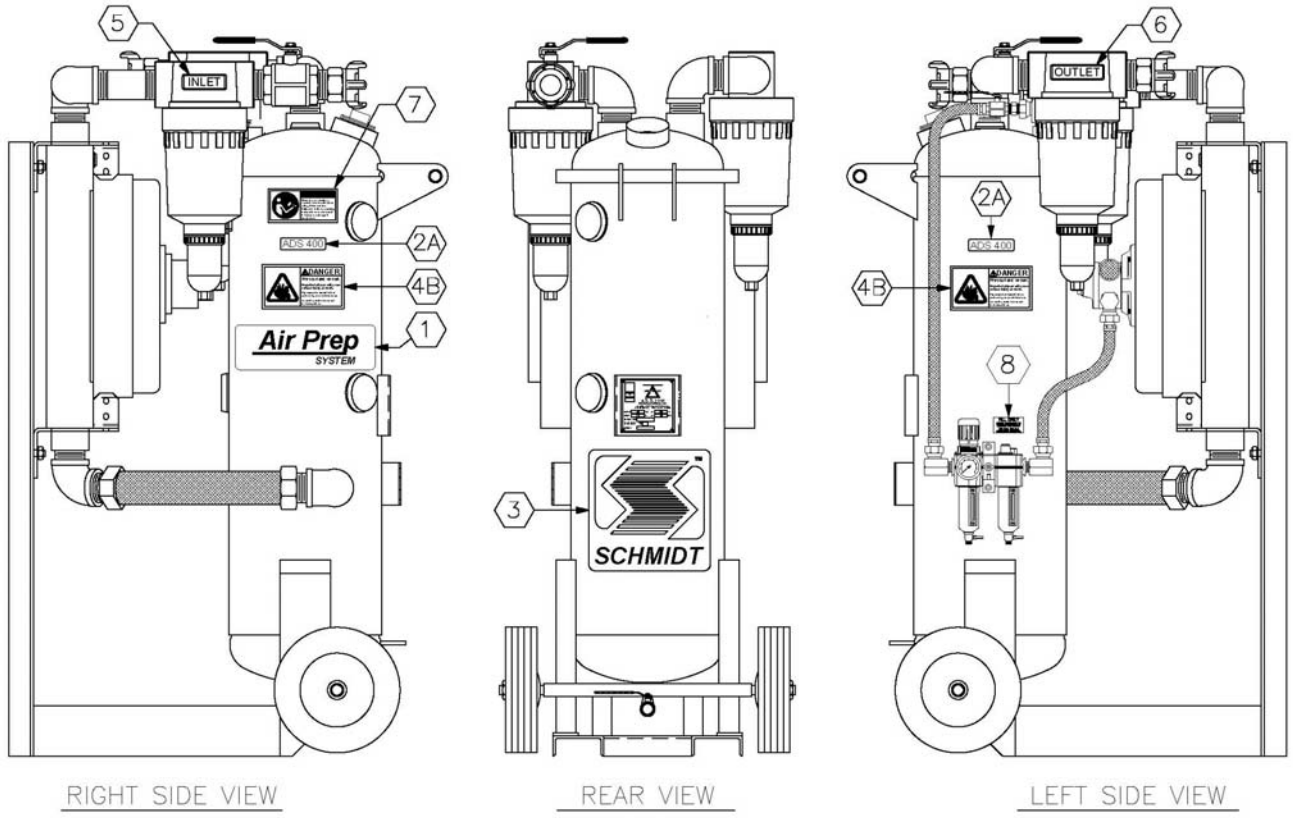

Figure 0.2(b) –Warning decal location for ADS 250-400 Portable Dryer

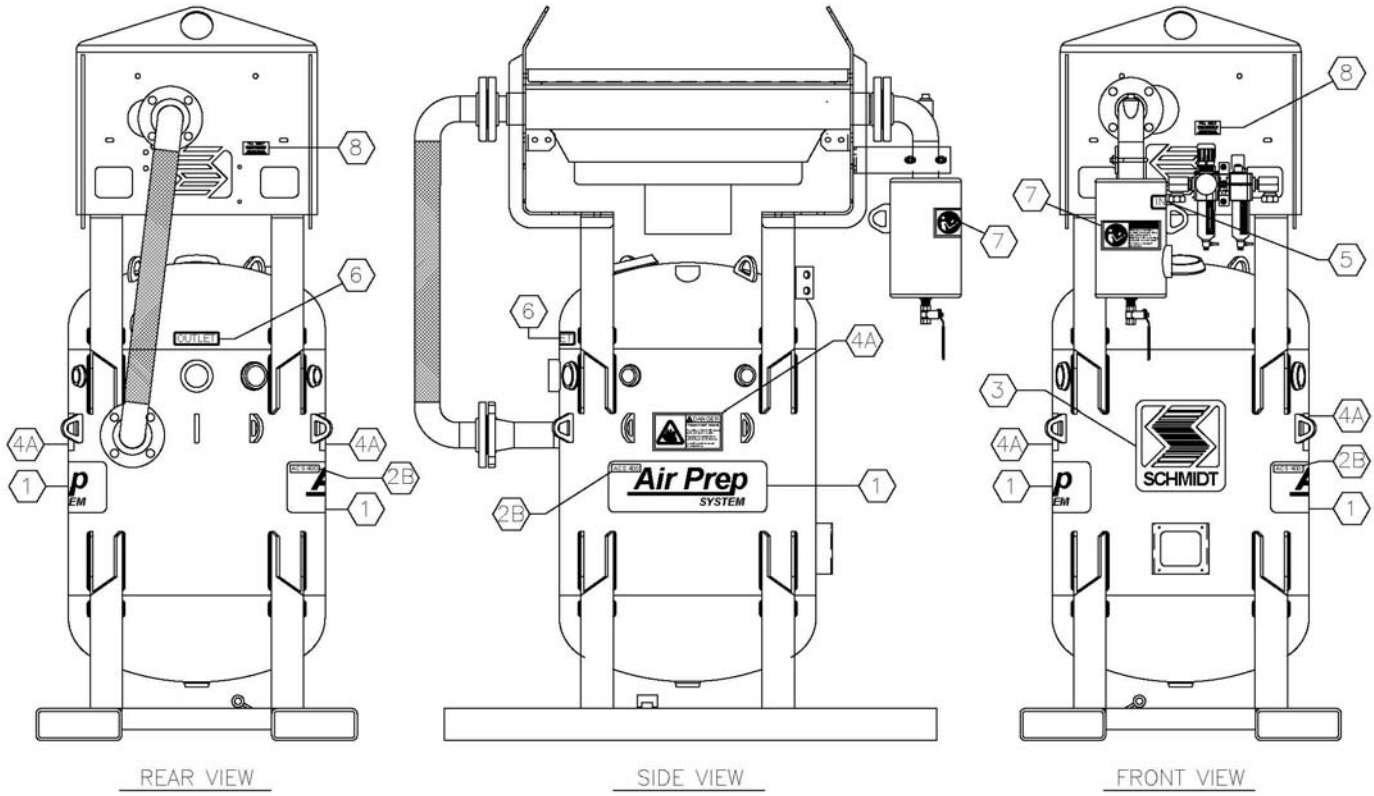

Figure 0.2(c) –Warning decal location for ACS 400-2500 Aftercooler

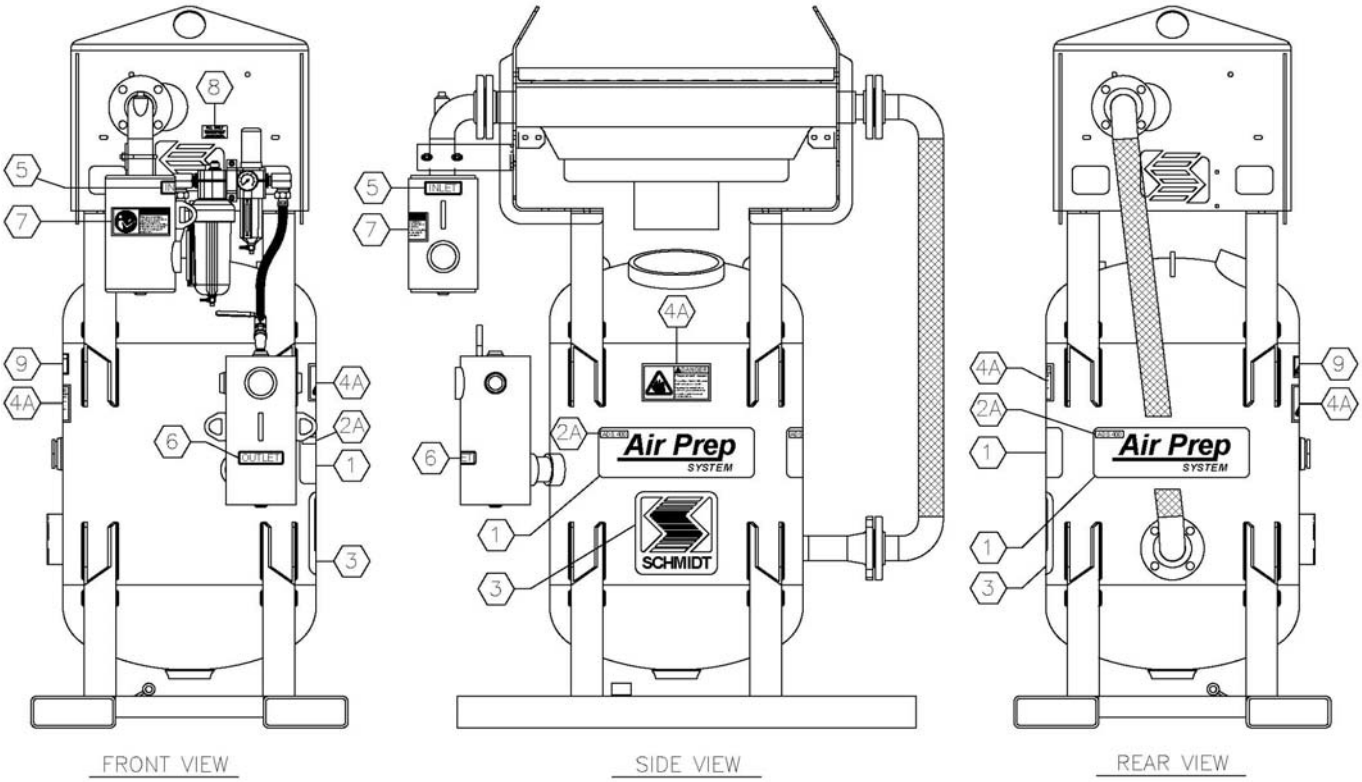

Figure 0.2(d) –Warning decal location for ADS 400-2500 Dryer

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1.0 Rules for Safer Operation

1.1. GENERAL RULE FOR SAFER OPERATION.

SCHMIDT® ABRASIVE BLASTERS HAVE BEEN DESIGNED TO BE SAFE WHEN USED IN THE PROPER MANNER. ALL ABRASIVE BLASTERS ARE POTENTIALLY DANGEROUS IF ALL SAFETY PRECAUTIONS ARE NOT RIGOROUSLY FOLLOWED. PROPER TRAINING IS REQUIRED BEFORE OPERATION. PROPER PROCEDURES MUST BE FOLLOWED. THE ABRASIVE BLASTER AND ALL COMPONENTS MUST BE PROPERLY MAINTAINED. FAILURE TO OPERATE, SERVICE AND MAINTAIN THE ABRASIVE BLASTER AS SET FORTH IN THIS MANUAL MAY CAUSE INJURY OR EVEN DEATH TO ANY PERSON USING, SERVICING OR IN THE VICINITY OF THE ABRASIVE BLASTER.

THIS MANUAL IDENTIFIES POTENTIAL HAZARDS BY DANGER, WARNING, AND CAUTION SYMBOLS. HOWEVER, ALL THE RULES, PROCEDURES AND RECOMMENDATIONS MUST BE FOLLOWED. FAILURE TO OPERATE PROPERLY IS VERY LIKELY TO PLACE PERSONS AND PROPERTY AT HIGH RISK OF DAMAGE, INJURY OR EVEN DEATH.

⚠ DANGER

ABRASIVE BLASTERS AND THE ABRASIVE BLAST OPERATION ARE POTENTIALLY DANGEROUS IF ALL SAFETY PRECAUTIONS ARE NOT FOLLOWED. FAILURE TO OPERATE THE ABRASIVE BLASTER WITHOUT FOLLOWING ALL THE *RULES FOR SAFER OPERATION* MAY RESULT IN SERIOUS INJURY OR DEATH TO OPERATING PERSONNEL OR PERSONS IN THE OPERATING VICINITY.

1.2. KNOW YOUR EQUIPMENT.

Do Not operate this equipment in a manner other than its intended application (see Section 4.0). Do Not operate this equipment or any other Schmidt® equipment without following the *Rules for Safer Operation* and all the operating procedures and instructions. Learn the applications and limitations as well as the specific potential hazards related to this machine. Failure to do so could result in serious injury or death.

1.3. RECEIVE PROPER TRAINING.

Do Not operate this equipment unless you have received operational and maintenance training. Begin by thoroughly reading and understanding this operation and maintenance manual and all included information. Consult an authorized Schmidt distributor or Axxiom manufacturing, Inc.

1.4. PROTECT YOUR FEET.

Do Not operate this equipment without wearing OSHA approved foot protection. Observe all applicable local, state, and federal regulations. See Section 3.10 and OSHA 29 CFR 1910.136.

⚠ CAUTION

Heavy objects can shift while being blasted and may fall on operators. All operators and personnel in the vicinity must wear OSHA approved foot protection during the operation of this equipment. See Section 3.10 and OSHA 29 CFR 1910.136.

1.5. PROTECT YOUR EYES.

Do Not operate this equipment without wearing OSHA approved safety glasses. Observe all applicable local, state, and federal safety regulations. See Section 3.10 and OSHA 29 CFR 1910.133.

⚠ WARNING

When filling the blast vessel and during the blast operation, abrasive can be blown in the face and eyes of operators. All operators and personnel in the vicinity must wear OSHA approved safety glasses during the operation of this equipment. See Section 3.10 and OSHA 29 CFR 1910.133.

1.6. PROTECT YOUR LUNGS.

Do Not operate this equipment without wearing OSHA approved respiratory protection. Abrasive blasting produces dust contaminated with toxic substances from the abrasive used, the coating being removed, and the object being blasted. This dust may contain silica which can cause severe and permanent lung damage, cancer, and other serious diseases. Do Not breathe the dust. Do Not rely on your sight or smell to determine if dust is in the air. Silica and other toxic substances may be in the air without a visible dust cloud. If air-monitoring equipment for silica is not provided at the worksite, then all personnel MUST wear appropriate respiratory protection when using or servicing this equipment. Breathing air supplied to respirators must be of acceptable quality. Consult your employer and OSHA regarding the appropriate respiratory protection and breathing air quality. See Sections 3.9, 3.10, and OSHA 29 CFR 1910.134.

⚠ DANGER

Abrasive blasting produces dust which may contain silica and other toxic substances that can cause severe and permanent lung damage, cancer, and other serious diseases if inhaled. All operators and personnel in the vicinity must wear OSHA approved respiratory protection during the operation of this equipment See Sections 3.9, 3.10, and OSHA 29 CFR 1910.134.

1.7. BREATHING AIR QUALITY.

Do Not use breathing air that does not meet OSHA Class D standards. Use extreme caution when selecting a source of breathing air. Breathing air provided by an oil-lubricated air compressor can contain carbon monoxide; therefore, a carbon monoxide detector is required (See Section 3.10). Carbon monoxide can be in the compressed air produced by an oil-lubricated air compressor when it is operated at extremely high temperature; therefore, a high temperature alarm is required to alert the operators when this condition exists. See Section 3.9 and reference OSHA 29 CFR 1910.134(i).

Extreme caution must be taken when connecting to factory air sources. Factories can have sources of compressed gases such as nitrogen which is fatal if used as a breathing air source. Verify that the air source is breathable air.

⚠ DANGER

Breathing air must meet OSHA Class D standards. Use of breathing air sources that do not meet Class D standards can cause asphyxiation and result in death. Verify that all air sources are breathable quality and use a high-temperature alarm and a carbon monoxide monitor when required. See Sections 3.9, 3.10 and OSHA 29 CFR 1910.134(i).

Enclosed blast areas must be ventilated to reduce airborne dust to an acceptable level as required by OSHA 29 CFR 1910.1000 and 1910.94.

1.8. PROTECT YOUR HEARING.

Do Not operate this equipment without wearing OSHA approved hearing protection. Observe all applicable local, state, and federal safety regulations. See Section 3.10 and refer to OSHA 29 CFR 1910.95 and 1926.101.

Loud noise is generated by the blast nozzle and the blowdown operation of this equipment. All operators and personnel in the vicinity must wear OSHA approved hearing protection during the operation of this equipment. See Section 3.10 and refer to OSHA 29 CFR 1910.95 and 1926.101.

1.9. PROTECT YOUR PERSON

Abrasive blasting produces dust contaminated with toxic substances from the abrasive used, the coating being removed, and the object being blasted. All blast operators and other personnel involved in the blast operation or in the vicinity of the blast operation should wear protective clothing. The protective clothing should be disposable or washable work clothes that should be removed at the worksite so that contaminated dust is not transferred into automobiles or homes. See Section 3.10 and refer to OSHA 29 CFR 1910.94 and 1910.132.

1.10. ADHERE TO ALL REGULATIONS.

Do Not operate this equipment without observing all local, state, and federal safety regulations including, but not limited to, OSHA (Occupational Safety and Health Administration).

1.11. STAY ALERT.

Do Not operate this equipment when you are tired or fatigued. Use caution and common sense while operating and/or performing maintenance on this equipment.

1.12. DO NOT USE DRUGS, ALCOHOL, or MEDICATION.

Do Not operate this equipment while under the influence of drugs, alcohol, or any medication.

1.13. PROTECT BYSTANDERS.

Do Not allow blast equipment operators and other personnel to enter the vicinity of the blast operation without providing respiratory protective equipment that meets OSHA regulations. If dust concentration levels exceed the limitations set in OSHA 29 CFR 1910.1000 then respirators are required.

1.14. KEEP CHILDREN AND VISITORS AWAY.

Do Not allow children or other non-operating personnel to contact this equipment or the connecting hoses and cords. Keep children and non-operating personnel away from work area.

1.15. AVOID DANGEROUS ENVIRONMENTS.

Do Not operate this equipment without familiarizing yourself with the surrounding environment. The blast operation creates high level of noise which may prevent the operator from hearing other possible dangers (i.e. traffic or moving equipment). In such situations a stand-by watch person may be necessary to protect against injury to personnel.

1.16. AVOID DANGEROUS ENVIRONMENTS.

Do Not use this equipment in areas cluttered with debris. Debris in the work area can create tripping hazards which can cause the operator to lose control of the blast hose and result in injury to operating personnel. Keep work area clean and well lit. When working at an elevated location, pay attention to articles and persons below.

1.17. AVOID DANGEROUS ENVIRONMENTS.
Do Not operate this equipment in elevated areas without using fall protection equipment. Certain applications of this equipment may require the use of scaffolding. Use of scaffolding creates hazardous situations such as tripping and fall hazards which can result in serious injury or death to operating personnel. Consult OSHA 29 CFR 1910 Subpart D.

1.18. AVOID DANGEROUS ENVIRONMENTS.
Do Not blast objects that are not properly secured. The blast operation can cause the blasted object to shift or move. Extremely large objects to be blasted can create a crush hazard to operating personnel which can result in serious injury or death. Properly secure the object to be blasted.

1.19. AVOID DANGEROUS ENVIRONMENTS.
Do Not blast objects used to store flammable materials. The blast operation can cause sparks which can ignite fumes or residual flammable materials inside enclosed containers which can explode resulting in serious injury or death to operating personnel.

1.20. AVOID DANGEROUS ENVIORNMENTS
It has been determined that blast abrasives approved for use in blast equipment are not ignitable nor do they present a dust explosion hazard in environments approved for use. However, airborne substances that make up the items and substrates being blasted can be ignitable when mixed with airborne dust from the blast abrasive. To mitigate risk of dust explosion avoid blasting in confined spaces without proper ventilation. Consult plant authorities, OSHA 29 CFR 1910.146 and 1910.94.

Explosion Hazard. Do Not operate blast equipment in confined spaces without proper ventilation. Consult plant authorities, OSHA 29 CFR 1910.146 and 1910.94.

1.21. ELECTRICALLY GROUND EQUIPMENT.
Static electricity is generated by the abrasive flow through the blast hose and/or vacuum hose. To minimize chance of static electrical shock to operating personnel only use anti-static blast hose and/or vacuum hose, properly electrically bond the blast nozzle, blast hose couplings, and the equipment, and properly install an earth ground to the abrasive blaster. See Section 5.12.

1.22. MAINTAIN VESSEL INTEGRITY.
Do Not operate this equipment with the pressure vessel damaged, or with any part of it worn or damaged. Do Not operate this equipment in a condition that may cause failure of the pressure vessel. See Rules 1.23 through 1.33 below.

An AirPrep System is a Pressurized Vessel. Alterations, damage, or misuse of the pressure vessel can result in rupturing. Damaged or incorrect components used on the AirPrep System can result in rupturing. The compressed air inside a pressurized vessel contains a dangerously high level of energy which can propel objects and cause serious injury or death.

1.23. NEVER OPERATE OVER MAXIMUM WORKING PRESSURE.
Do Not operate this equipment above maximum allowable working pressure (MAWP) at maximum operating temperature (°F) shown on the ASME nameplate attached to the vessel. See Sections 2.2 and 8.1.

1.24. INSTALL PRESSURE RELIEF DEVICE.
Do Not operate this equipment without a pressure relief device in place. The ASME Code requires that all vessels be equipped with pressure relief devices prior to installation. The pressure relief device must be set at the maximum allowable working pressure of the abrasive blaster. See the ASME nameplate attached to the vessel. See Section 3.11 for information regarding the pressure relief valve.

1.25. NEVER OPERATE BEYOND ALLOWABLE TEMPERATURE RANGE.

Do Not operate this equipment above the maximum allowable temperature at the allowable pressure or below the minimum design metal temperature (MDMT) shown on the pressure vessel nameplate. The characteristics of the pressure vessel metal are weakened when the temperature is outside the operating range. Operating the pressure vessel outside of allowable temperature range can result in rupturing and cause serious injury or death. See Section 2.2.

1.26. ASME NAMEPLATE REQUIRED.

Do Not operate this equipment if the ASME pressure vessel nameplate is missing. Contact Axxiom Manufacturing, Inc. for technical support.

1.27. DO NOT MODIFY VESSEL.

Do Not modify or alter this equipment, or any blast equipment, or controls thereof without written consent from Axxiom Manufacturing, Inc. Do Not weld, grind, or sand the pressure vessel. *It will not be safe to operate.* Non-authorized modifications could lead to serious injury or death. Non-authorized modifications will void the warranty and the ASME/NB integrity.

1.28. DO NOT HAMMER ON VESSEL.

Do Not hammer on or strike any part of the pressure vessel. Hammering on the pressure vessel can create cracks and cause rupturing.

1.29. FIRE DAMAGE NOTICE.

Do Not operate if the pressure vessel has been damaged by fire. If damaged, take out of service immediately and have it inspected and/or repaired by a qualified facility. Contact Axxiom Manufacturing, Inc. for technical support.

1.30. INSPECT VESSEL REGULARLY.

Do Not operate this equipment with damage to the pressure vessel. *It is not safe*. Inspect outside and inside of the pressure vessel regularly for corrosion or damage (i.e. dents, gouges or bulges). If damaged, take out of service immediately and have it inspected and/or repaired by a qualified facility. Contact Axxiom Manufacturing, Inc. for technical support. See Section 8.0.

1.31. CHECK FOR LEAKS IN VESSEL.

Do Not operate this equipment if there is a leak in the pressure vessel. If leaking, take out of service immediately and have it inspected and/or repaired by a qualified facility. Contact Axxiom Manufacturing, Inc. for technical support. See Section 8.0.

1.32. INSPECT HANDWAY ASSEMBLY.

Do Not operate the abrasive blaster without first inspecting the handway assembly. To ensure proper operation all handway components must be the correct size for the vessel handway opening. See Section 6.3.

1.33. NEVER MODIFY BLOWDOWN.

Do Not connect the blowdown on this equipment onto a common header with any other unit of any description, or any other source of compressed air, without first making sure a check valve is used between the header and this unit. Do Not install this equipment sharing piping with another unit of higher discharge pressure and capacity. A safety hazard could occur in the form of a back-flow condition. Do Not install a muffler or silencer on the blowdown that is not designed for use on AirPrep system. It can cause a malfunction and can result in a hazardous condition. See Section 5.11 and Section 6.2.

1.34. DEPRESSURIZE VESSEL BEFORE PERFORMING MAINTENANCE.

Do Not remove, repair, or replace any item on this equipment while it is pressurized. Do Not attempt to perform maintenance or load abrasive while this equipment is pressurized or is even capable of being pressurized. This means the inlet ball valve should be closed and the air supply should be shut off or disconnected. Anytime the manual blowdown valve is closed it should be assumed that the abrasive blast vessel is pressurized.

⚠ DANGER

An AirPrep System is a Pressurized Vessel. The compressed air inside a pressurized vessel contains a dangerously high level of energy which can propel objects and cause serious injury or death. Depressurize vessel before performing any maintenance. See Section 6.2.

1.35. ALWAYS USE REMOTE CONTROLS.

Do Not sell, rent, or operate abrasive blasters without remote controls. OSHA regulations require remote controls on all abrasive blasters. All abrasive blasters must be equipped with automatic (deadman) type remote controls (either pneumatic or electric). Failure to use remote controls can cause serious injury or death to the operator(s) or other personnel in the blasting area. Reference OSHA 29 CFR 1910.244(b).

1.36. NEVER USE BLEEDER TYPE DEADMAN VALVES.

Do Not use bleeder type deadman valves on any Schmidt® abrasive blaster. The use of A-BEC, Clemco, or a similar bleeder type deadman valve can, without warning, cause unintentional start-up which can result in serious personal injury. A particle of dirt from the air hose can plug the bleed hole in the deadman valve and cause the blast outlet to turn on.

1.37. CHECK FOR DAMAGED PARTS.

Do Not use this equipment with damaged components. Periodically check all valves, hoses, fittings, pipe, and pipe fittings (internal and external) to see that they are in good condition. Repair or replace any component that shows any sign of wear, leakage, or any other damage. See Section 8.0.

⚠ DANGER

Damaged components can fail during operation and result in serious injury or death to operating personnel.

1.38. ALWAYS USE SAFETY PINS ON HOSE COUPLING CONNECTIONS.

Do Not use this equipment without hose coupling safety pins in place and hose whip checks installed on all air and blast hoses. All blast hose couplings and air hose couplings have pin holes that must be safety pinned to protect against accidental disconnections. Accidental hose disconnection can cause serious injury or death. See Sections 5.14 and 8.8.

1.39. ALWAYS USE CORRECT REPLACEMENT PARTS AND ACCESSORIES.

Do Not use replacement parts or accessories that are not rated for pressures equal to or higher than your equipment's operating pressure. Improper hoses and/or fittings used on or connected to the Schmidt equipment can rupture and cause serious injury or death.

Do Not use replacement parts that are not Schmidt® original factory replacement parts. Non-original parts may not fit properly and can cause equipment damage and/or failure which can result in serious injury to operating personnel. Consult Axxiom Manufacturing, Inc. See Section 9.0 and Section 12.2.12.

⚠ WARNING

Use of replacement components that are not Schmidt® original factory replacement parts may result in equipment failure which can result in serious injury to operating personnel.

1.40. ALWAYS USE CORRECT PRESSURE RATED ACCESSORIES.

Do Not use air reservoirs or moisture separator tanks that are not rated for use in compressed air applications. Air reservoirs and moisture separator tanks larger than 6 inches inside diameter must have an ASME code stamp.

⚠ DANGER

An air reservoir or moisture separator tank is a Pressurized Vessel. The compressed air inside a pressurized vessel contains a dangerously high level of energy which can explode propelling objects and result in serious injury or death to operating personnel. Air reservoir and moisture separator tanks must be ASME coded tanks.

1.41. NEVER AIM BLAST NOZZLE TOWARDS ANY PERSON.

Do Not aim the blast nozzle towards yourself or any person. A system malfunction or a blocked blast nozzle that clears can trigger accidental start up resulting in injury to personnel.

1.42. NEVER USE ABRASIVE NOT INTENDED FOR BLAST EQUIPMENT.

Do Not use abrasive blast media containing free silica. Silica can cause silicosis or other related respiratory damage. Verify that the abrasive is intended for use in blasting equipment. Personal protective equipment, including airline filters and respirators, must be used for all abrasive blasting operations. Observe all applicable local, state, and federal safety regulations. See Sections 3.8, 3.10, and reference OSHA 29 CFR 1910.134.

1.43. CHECK ABRASIVE FOR DEBRIS.

Do Not use blast abrasive that contains trash or other debris. Trash or debris can create a blockage and cause equipment malfunction. Screen recycled abrasive to remove trash.

1.44. STOP OPERATION IMMEDIATELY IF ANY ABNORMALITY IS DETECTED.

Do Not operate this equipment if anything abnormal is seen during operation. Stop operation immediately for inspection. Refer to Section 8.0 for maintenance and inspection details.

1.45. DO NOT OVERLOAD THE LIFT EYES.

Do Not load the lifting eyes above the rated capacity. Do Not lift the blast vessel by any point other than the lifting eyes or designated lift points. Do Not lift the blast vessel while it is pressurized. See Section 2.6.

1.46. AVOID WET ENVIRONMENTS.

Do Not expose this equipment to rain. Do not use this equipment in wet conditions. AirPrep Systems operated outdoors must be protected from weather.

1.47. AVOID CORROSIVE ENVIRONMENTS.

Do Not locate this equipment in corrosive atmospheres as rapid deterioration of fan shroud, cooling coil, fan and motor may take place resulting in reduced life.

1.48. AVOID EXTREME TEMPERATURES.

Do Not expose AirPrep Systems fan motors to extreme temperatures. The motors furnished are built for fan duty only. Consideration should be given to the installation location so motors are not subjected to extreme temperatures. AirPrep Systems with air motor have a maximum operating temperature of 250°F (121°C). Refer to the motor nameplate for AirPrep Systems with electric motors. Do Not operate AirPrep Systems below 35°F (1°C).

1.49. DO NOT CYCLE AIRPREP SYSTEM FAN.

AirPrep Systems fan and drive motors are designed for continuous operation. Do Not alter to a cycled fan mode.

1.50. ALLOW PROPER CLEARANCE.

Do Not install this equipment where airflow to aftercooler fan will be restricted. For proper air flow, a minimum of 12" should be allowed between the aftercooler fan and any walls or obstructions.

1.51. DO NOT OPERATE WITH GUARDS REMOVED.

Do Not operated AirPrep Systems with the fan guard removed. Do Not place hands near radiator fan guard. Contact with rotating fan can result in serious injury to operating personnel.

1.52. ELECTRIC FAN MOTORS MUST BE INSTALLED BY QUALIFIED PERSONNEL.

Do Not connect electric motors to a power supply that does not have the same characteristics as shown on the motor nameplate. Be sure to provide proper fusing to minimize chance of possible motor burnout. Before starting the motor, follow manufacturer's recommendations. Turn the fan by hand to eliminate possible motor burnout in the event the fan has been damaged in shipment. Observe operation after the motor has been started for the first time.

1.53. MAINTAIN WARNING DECALS.

Do Not remove, cover, obstruct, or paint over any warnings, cautions, or instructional material attached. Warning decals must be installed, maintained, and located to be visible and with enough light for legibility. See Sections 0.0 and 8.11.

1.54. SAVE THIS OPERATION AND MAINTENANCE MANUAL.

Refer to this operation and maintenance manual as needed as well as any additional information included from other manufacturers. Never permit anyone to operate this equipment without having him/her first read this manual and receive proper training. Make this manual readily available to all operating and maintenance personnel. If the manual becomes lost or illegible replace it immediately. This operation and maintenance manual should be read periodically to maintain the highest skill level; it may prevent a serious accident. This operation and maintenance manual is available for downloading from SchmidtAbrasiveBlasting.com.

1.55. SAFETY REFERENCES

See Section 12.4 for safety information sources and contact information. Use these sources to obtain additional information regarding all aspects of blast operation safety.

2.0 Specifications and General Information

2.1 Notes to Distributors and Owners

2.1.1. Verify that the operation and maintenance manual is included with the AirPrep System when it is received. Verify that the operation and maintenance manual is included with the AirPrep System when it is delivered to the purchaser.

2.1.2. This equipment is intended for knowledgeable and experienced users. No person or persons should be allowed to operate this equipment without first receiving proper training in abrasive blasting operation and use of this equipment.

2.1.3. Immediately notify Axxiom Manufacturing, Inc. of any instances of use of this equipment in any manner other than the intended application. See Section 4.0.

2.1.4. Only qualified personnel should load and unload this equipment for shipping. Slings or other lifting devices must only be attached to the designated lifting points. See the lifting diagrams shown in Section 2.6.

2.1.5. For further information contact:

Axxiom Manufacturing, Inc.
11927 South Highway 6
Fresno, Texas 77545

Phone: 1-800-231-2085
Fax: 1-281-431-1717
Website: www.SchmidtAbrasiveBlasting.com

2.2 Air Prep System (ACS & ADS) Operating Specifications

Maximum Working Pressure	150 psi @ 250°F
Minimum Operating Temperature	35°F @ 150 psi
Air Flow Capacity	See Section 6.0 table 1
Tank Volume	See table below

MODEL NO.	ACS 250P	ACS 400P	ACS 400	ACS 750	ACS 950	ACS 1200	ACS 1600	ACS 2000	ACS 2500
VOLUME (cu ft.) (Liters)	2.7 (76)	2.7 (76)	8.6 (244)	9.8 (278)	10.0 (283)	10.0 (283)	10.0 (283)	19.5 (552)	19.5 (552)

MODEL NO.	ADS 250P	ADS 400P	ADS 400	ADS 750	ADS 950	ADS 1200	ADS 1600	ADS 2000	ADS 2500
VOLUME (cu ft.) (Liters)	2.7 (76)	2.7 (76)	8.7 (246)	11.7 (331)	11.7 (331)	11.7 (331)	19.0 (538)	27.3 (773)	30.4 (861)
APPROXIMATE DELIQUESCENT CAPACITY (cu ft.) (Liters)	1.4 (42)	1.4 (42)	5.2 (147)	8.2 (232)	8.2 (232)	8.2 (232)	13.0 (368)	13.0 (368)	17.0 (481)
APPROXIMATE DELIQUESCENT CAPACITY (Qty. 50lb Bags)	2	2	6	9	9	9	16	16	21

2.3 Important Reference Numbers

Fill in the AirPrep Systems model number and serial number in the blank spaces below. These will be used for reference whenever service or maintenance is required.

AirPrep System Model Number_____

AirPrep System Part Number_____

AirPrep System Serial Number_____National Board Number_____

2.4 Vessel Information

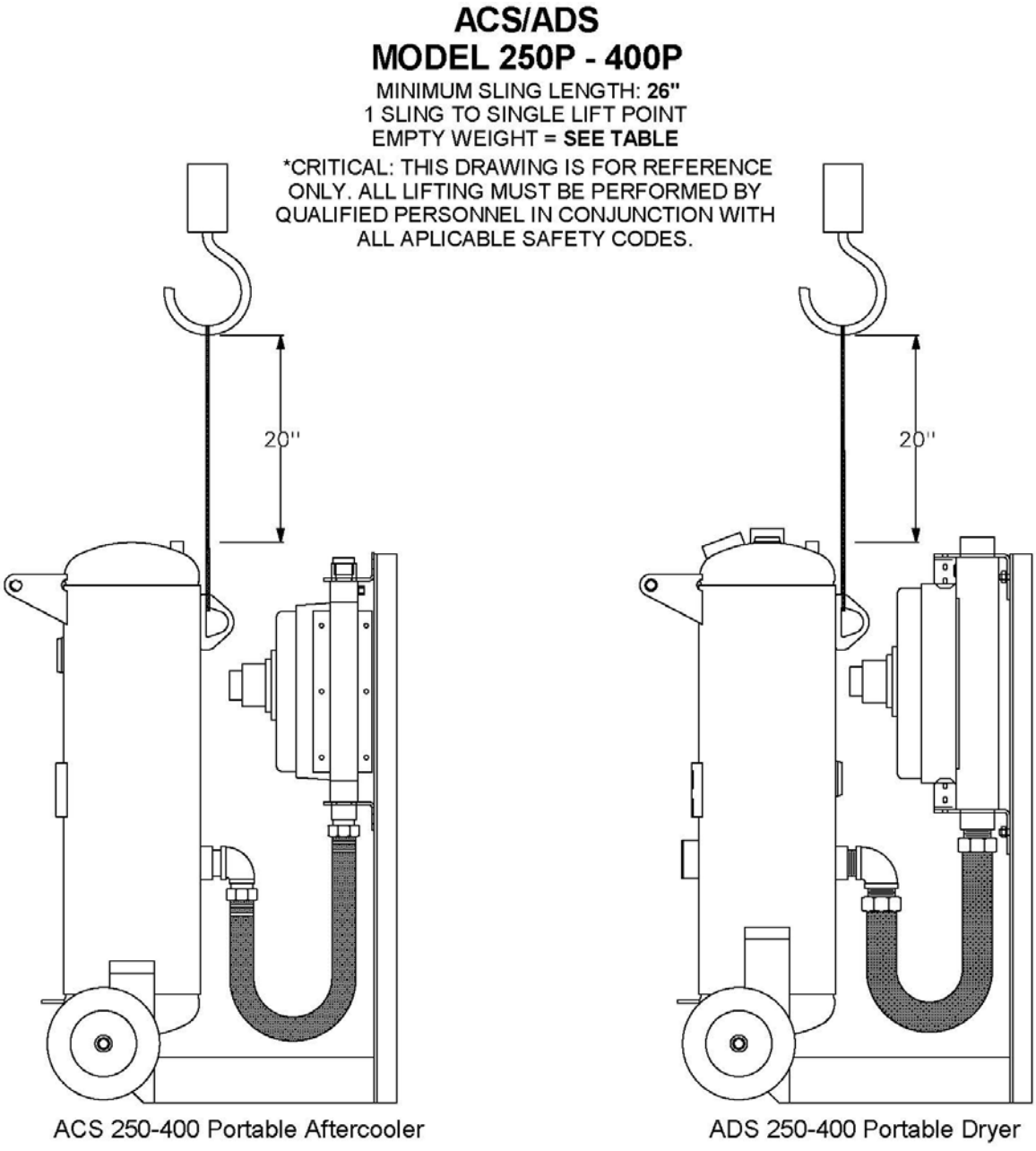
2.4.1. All pressure vessels used in Schmidt AirPrep Systems are manufactured in strict accordance with the provisions of the ASME Code Section VIII, Div. 1.

2.4.2. In order to maintain the high level of quality and quality control used in the manufacture of this vessel, it is required that any and all welded repairs to this vessel be performed by a reputable shop holding a National Board "R" Stamp and/or an ASME "U" stamp, depending on state or city law. Welding on the vessel performed by welders not properly qualified per the ASME Code voids the ASME/NB integrity of the vessel.

2.5 Notes _____

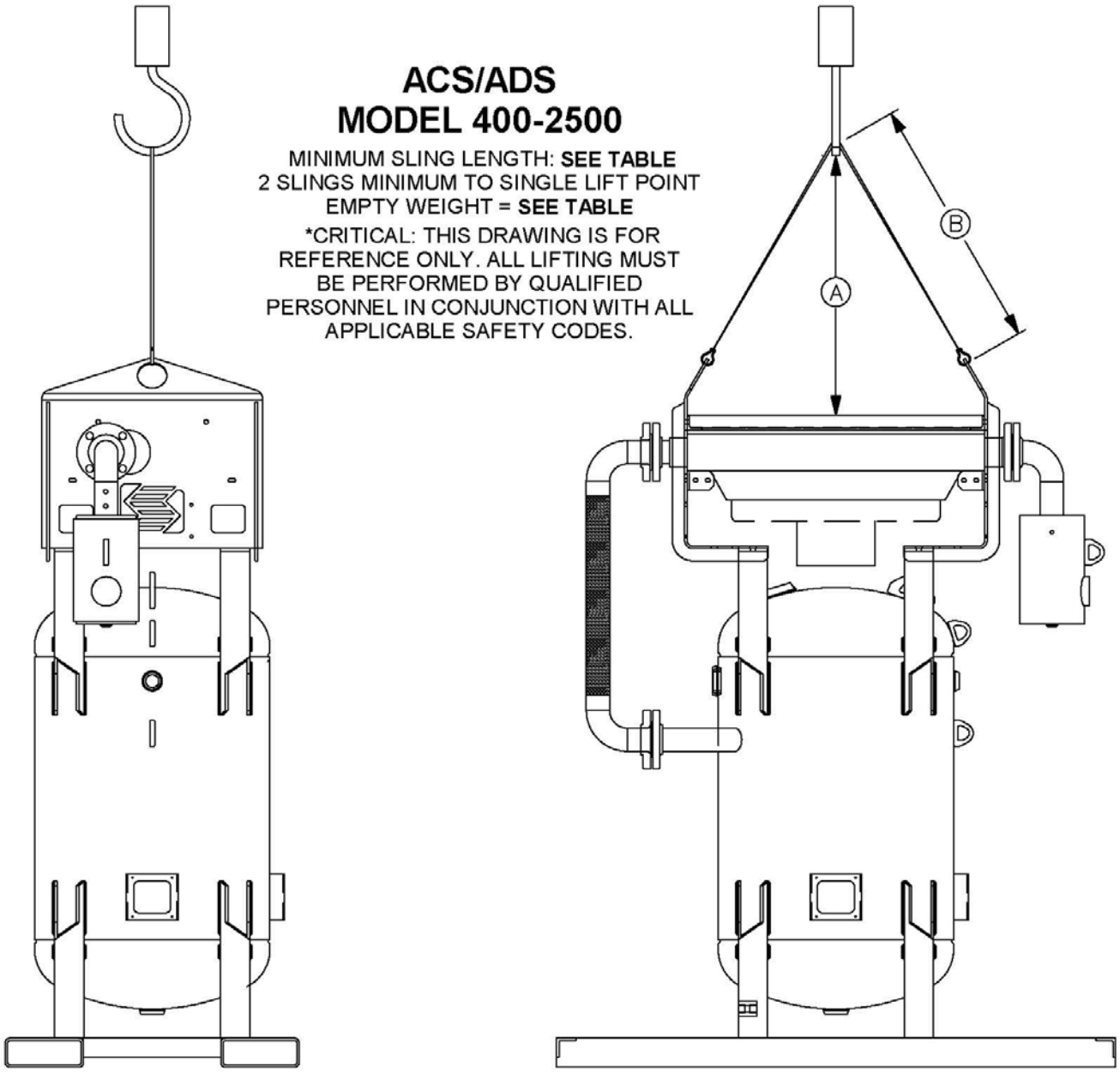
2.6 AirPrep System Lifting

All AirPrep Systems are equipped with lifting eyes located at the top of the equipment. Do Not connect slings or other lifting devices to any other location other than the lifting eyes. All AirPrep Systems larger than ACS/ADS 250 are equipped with forklift pockets as a part of the skid frame. Only qualified personnel should load and unload this equipment using fork trucks with a sufficient load rating.



MODEL	SIZE	WEIGHT		
		ACS	ADS	
ACS / ADS PORTABLE	250P	290 (132)	342 (155)	lb. (kg)
	400P	319 (145)	369 (167)	lb. (kg)

Figure 2.6(a) – 250-400 Portable Air Prep System Lifting Diagram



MODEL	SIZE	A	B		WEIGHT ACS	WEIGHT ADS	
ACS & ADS	400	20" (508)	20" (508)	in. (mm)	631 (286)	760 (345)	lb. (kg)
	750	27" (685.5)	26" (660.4)	in. (mm)	686 (311)	910 (413)	lb. (kg)
	950	32" (812.8)	33" (838.2)	in. (mm)	1112 (504)	1382 (627)	lb. (kg)
	1200	35" (889)	37" (939.8)	in. (mm)	1130 (513)	1422 (645)	lb. (kg)
	1600	35" (889)	37" (939.8)	in. (mm)	1269 (576)	1825 (828)	lb. (kg)
	2000	38" (965.2)	41" (1041.4)	in. (mm)	2105 (955)	2450 (1111)	lb. (kg)
	2500	44" (1117.6)	53" (1346.2)	in. (mm)	2500 (1134)	2850 (1293)	lb. (kg)

Figure 2.6(b) – 400 - 2500 AirPrep System Lifting Diagrams

2.7 Aftercooler System (ACS) Dimensional Specifications

MODEL NO.	PART NO.		HEIGHT in(mm)	WIDTH in(mm)	LENGTH in(mm)	INLET (NPT)	OUTLETS (NPT)	WEIGHT lbs. (kg)
	AIR MOTOR	ELECTRIC MOTOR						
ACS 250P	1300-021P	1300-027P	54 (1372)	24 (610)	35 (889)	2"	(1) 2", (2) 1 ½"	290 (132)
ACS 400P	1300-041P	1300-047P	58 (1473)	24 (610)	35 (889)	2"	(1) 2", (2) 1 ½"	319 (145)
ACS 400	1300-041	1300-042/043 1300-042L 1300-043L	*68 (1727)	30 (762)	49 (1245)	2"	(1) 2", (2) 1 ½", (4) 1"	631 (286)
ACS 750	1300-071	1300-072/073 1300-072L 1300-073L	*73 (1854)	30 (762)	57 (1448)	2"	(1) 2", (2) 1 ½", (4) 1"	686 (311)
ACS 950	1300-091	1300-092/093 1300-092L 1300-093L	*85 (2159)	35 (889)	68 (1727)	3"	(1) 3", (2) 2", (4) 1"	1112 (504)
ACS 1200	1300-121	1300-122	*85 (2159)	35 (889)	72 (1829)	3"	(1) 3", (2) 2", (4) 1"	1130 (513)
ACS 1600	1300-161	1300-162	*85 (2159)	37 (940)	77 (1956)	3"	(1) 3", (2) 2", (4) 1"	1269 (576)
ACS 2000	1300-201	1300-202	†98 (2489)	40 (1016)	78 (1981)	4"	(1) 4", (2) 2", (4) 1"	2105 (955)
ACS 2500	1300-251	1300-252	†108 (2743)	45 (1143)	89 (2261)	4"	(1) 4", (2) 2", (4) 1"	2500 (1134)

*For electric motor add 5" to height. †For electric motor add 6" to height.

2.8 Air Dryer System (ADS) Dimensional Specifications

MODEL NO.	PART NO.		HEIGHT in(mm)	WIDTH in(mm)	LENGTH in(mm)	INLET (NPT)	OUTLETS (NPT)	WEIGHT lbs. (kg)
	AIR MOTOR	ELECTRIC MOTOR						
ADS 250P	1310-021P	1310-027P	54 (1372)	24 (610)	35 (889)	2"	(1) 2”	342 (155)
ADS 400P	1310-041P	1310-046P	58 (1473)	24 (610)	35 (889)	2"	(1) 2"	369 (167)
ADS 400	1310-041	1310-042/046 1310-042L 1310-046L	*68 (1727)	30 (762)	48 (1219)	2"	(1) 2", (2) 1"	760 (345)
ADS 750	1310-071	1310-072/076 1310-072L 1310-076L	*82 (2083)	30 (762)	57 (1448)	2"	(1) 2", (2) 1"	910 (413)
ADS 950	1310-091	1310-092/096 1310-092L 1310-096L	*92 (2337)	35 (889)	68 (1727)	3"	(1) 3", (2) 1"	1382 (627)
ADS 1200	1310-121	1310-122	*92 (2337)	35 (889)	72 (1829)	3"	(1) 3", (2) 1"	1422 (645)
ADS 1600	1310-161	1310-162	*95 (2413)	37 (940)	77 (1956)	3"	(1) 3", (2) 1"	1825 (828)
ADS 2000	1310-201	1310-202	†99 (2515)	40 (1016)	78 (1981)	4"	(1) 4", (2) 2"	2450 (1111)
ADS 2500	1310-251	1310-252	†108 (2743)	45 (1143)	89 (2261)	4"	(1) 4", (2) 2"	2850 (1293)

*For electric motor add 5" to height. †For electric motor add 6" to height.

3.0 System Requirements

3.2 Compressed Air Requirements

Blast nozzle

The blast nozzle size and blast pressure determine the compressed air requirements. Available air flow capacity and/or air compressor size must be considered before selecting the blast nozzle size. An air source dedicated to the abrasive blast system is preferred to reduce system pressure drops and back flow of air. If an existing air compressor will be used or a limited air supply is available, then the blast nozzle must be selected based on these conditions. Be aware that as the blast nozzle wears the air demand will increase. See Table 1 in Section 13.0 for air consumption by nozzle size at various pressures. The required air consumption will be used to select the proper size AirPrep System.

3.3 Air compressor size

Air compressor size is crucial to the operation of the abrasive blasting equipment which in turn will affect the selection of the AirPrep system. Blast nozzle selection and desired productivity must be evaluated to determine the air flow requirements prior to selecting the air compressor size. Sufficient air supply capacity is necessary to maintain the system air pressure. Insufficient air flow capacity will result in reduced blast nozzle pressure and lost productivity. The air compressor must be large enough to supply:

i. The sum of blast air requirements for each nozzle at the highest pressure that will be used (see Section 13.0, Table 1).

ii. The 12 CFM breathing air supplied to each blast operator respirator. **NOTE**: Reference OSHA regulations regarding requirements for breathing air, especially when an oil-lubricated air compressor is used.

iii. The AirPrep System size should be selected based on the size and capability of the air compressor to be used to meet the air requirements determined above.

3.4 AirPrep System Air Supply Lines

The air supply hose and fittings connected to the inlet and outlets of the AirPrep System must be rated at a minimum of 150 psi operating pressure. The air supply hose from the air compressor to the AirPrep System should be at least the same diameter as the air inlet piping (see Section 2.7). AirPrep Systems are equipped with smaller secondary outlet ports which can be reduced in size by installing pipe bushings to match the connecting equipment. Again, the air requirement of the connecting equipment must be considered so that the proper size piping/hose is selected. See Section 5.14.

3.5 AirPrep System Air Pressure

The standard maximum operating pressure for AirPrep Systems is 150 psig; however custom systems may have varying operating pressure. The maximum operating pressure for the AirPrep System is stamped on the ASME nameplate attached to the vessel. AirPrep Systems equipped with air motors to drive the cooling fan are supplied with an air pressure regulator. This air regulator is to reduce the air pressure to the required operating pressure of the fan air motor. The regulator is pre-set at the manufacturer and should not be altered. The required operating pressure for the fan air motor is given in Section 11.0, Table 2.

3.6 Blast System Air Quality

AirPrep Systems are equipped with an inlet filter/separator to remove debris and condensed moisture from the incoming air flow; however, if the air source contains an excessive amount of debris, it may be necessary to install a preliminary filter upstream of the AirPrep System inlet. Excessive contamination of the incoming air can clog the heat exchanger of the AirPrep System and cause expensive damage to the system.

3.7 Electrical Requirements

AirPrep Systems can be equipped with electric fan motors. On units equipped with electric fan motors the supply voltage can range from 110Vac (single phase) to 460Vac (three phase). Each electric motor can be wired one of two voltages as specified by the purchaser at the time of purchase however, the motor can be rewired at installation. If the unit is to be rewired it may be necessary to change the motor starter and/or the thermal overload strips. Only a qualified electrician should install and/or make electrical changes to the AirPrep Systems.

Power connections to AirPrep System with electric motors expose operators to high electrical voltages. Contact with high electrical voltages can result in serious injury or death. Only qualified personnel should install or perform maintenance on the electrical system.

3.9 Breathing Air Quality

All blast operators must be supplied with and required to use NIOSH approved air-fed respirators. Breathing air supplied to these respirators must meet Grade D air quality standards as specified by OSHA 29 CFR 1910.134(i) and the Compressed Gas Association Specifications ANSI/CGA G-7.1. Consult these specifications when selecting a source of breathing air.

Breathing air must be clean, dry, contaminant-free, and provided at a pressure and volume specified by NIOSH. Use NIOSH approved air filters on all sources of breathing air. See Section 3.10.

Breathing air filters do not remove carbon monoxide or any other toxic gases. Use a carbon monoxide monitor to detect unacceptable levels. Consult OSHA 29 CFR 1910.134(i).

Many sources of breathing air are available such as air cylinders, free-air pumps, oil-less air compressors, and oil lubricated air compressors. The most used source is the same air compressor that is used for the blast air which most often is oil lubricated. Breathing air provided by an oil-lubricated air compressor can contain carbon monoxide and therefore requires the use of a carbon monoxide detector (See Section 3.10). Carbon monoxide can be in the compressed air produced by an oil-lubricated air compressor when it is operated at extremely high temperature; therefore, a high temperature alarm is required to alert the operators when this condition exists.

Oil lubricated air compressors can produce carbon monoxide. Carbon monoxide can cause asphyxiation and result in death. Use a high-temperature alarm and a carbon monoxide monitor when an oil lubricated air compressor is used to supply breathing air. Consult OSHA 29 CFR 1910.134(i).

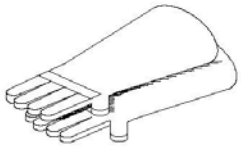
3.10 Personal Protective Equipment (PPE)

AirPrep Systems are designed to be used with abrasive blasting equipment; therefore, operators may be exposed to hazards that may not be directly related to the AirPrep System. Abrasive blasting has many hazards that may cause injuries to operators. To minimize risk of injury to operators, each must be supplied with and required to use Personal Protective Equipment. The Occupational Safety and Health Administration (OSHA) requires the employer to assess the workplace to determine what PPE is necessary and supplied to each operator (Reference 29 CFR 1910 Subpart I). OSHA requires that this equipment meet or be equivalent to standards developed by the American National Standards Institute (ANSI). Figure 3.10 below identifies the minimum personal protective equipment required for each abrasive blast operator. Also identified are the OSHA references for each and the ANSI standard each PPE item must meet. All PPE clothing and equipment should be selected for safe design and quality of construction. Select each for proper fit and for comfort which will encourage operator use.

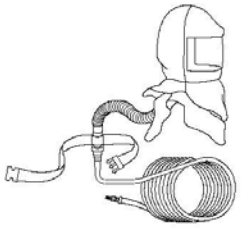
Safety Glasses
Reference OSHA 29 CFR 1910.133
Must meet ANSI Z87.1

Safety Boots
Reference OSHA 29 CFR 1910.136
Must meet ANSI Z41.1

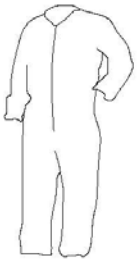
Ear Plugs
Reference OSHA 29 CFR 1926.101
Must meet ANSI S3.19
(Also see OSHA 29 CFR 1910.95)



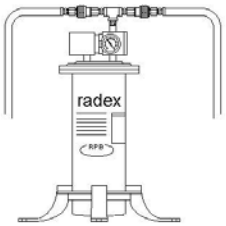
Gloves
Reference OSHA 29 CFR 1910.138
No Applicable ANSI Standard



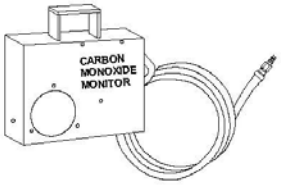
Respirator
Reference OSHA 29 CFR 1910.134
Must be NIOSH approved



Protective Clothing
Reference OSHA 29 CFR 1910.132
No Applicable ANSI Standard



Airline Filter
Reference OSHA 29 CFR 1910.134
Must be NIOSH approved



Carbon Monoxide Monitor
Reference OSHA 29 CFR 1910.134

Figure 3.10 - Personal Protective Equipment

3.11 Pressure Relief Valve Installation

Do Not operate this equipment without a pressure relief device installed to protect the AirPrep System from over-pressurization. The ASME Code requires that all vessels be operated with pressure relief devices in place.

If the AirPrep System does not provide for the installation of a pressure relief valve one can be installed on the blowdown port on the pressure vessel. Refer to Figure 3.11 for an alternate location of the air pressure relief valve.

Local regulations set the specifications for pressure relief valves; therefore it is the responsibility of the owner of the AirPrep System to install a pressure relief valve that meets *all* applicable regulations. The pressure relief device must be set at the maximum allowable working pressure of the AirPrep System pressure vessel. See the ASME/CE vessel nameplates attached to the pressure vessel.

⚠ DANGER

Rupture Hazard. Operating the pressure vessel above the maximum allowable working pressure can result in rupturing the pressure vessel. Install an air pressure relief valve to protect against over pressurization of the blast vessel.

⚠ WARNING

Airborne particles and loud noise hazards from relief valve exhaust air can cause serious injury and loss of hearing. Wear approved eye and ear protection. Stay clear of exhaust air path. DO NOT place hands or other body parts in the exhaust air path. Make sure no personnel are in the exhaust air path. Direct the relief valve exhaust away from work area.

⚠ WARNING

In special cases per request of customer a pressure relief valve may be included with the equipment. It is the responsibility of the owner/user to confirm that the supplied pressure relief valve meets all local regulations.

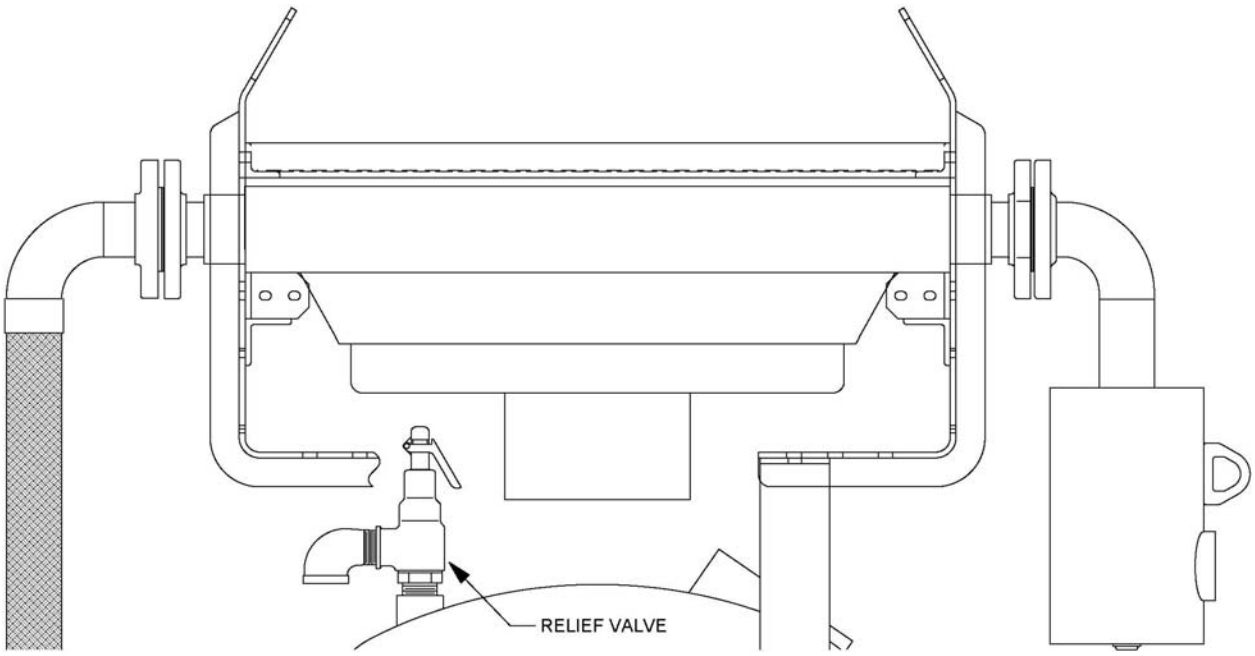


Figure 3.11 – Suggested location for air pressure relief valve

3.12 INSTALLATION CHECKLIST (Photocopy this page to use as a worksheet)

☐ ***Accessories:*** confirm receipt as purchased with the AirPrep System.

☐ ***Inspect AirPrep System:*** check for possible damage during shipment. See Section 8.0 for inspection instructions.

☐ ***Clean AirPrep ADS System:*** remove handway cover and check for debris inside. If Replace handway cover per instructions in Section 6.3.

☐ ***CFM available:*** determine available air supply (cfm) and record here._____
Confirm AirPrep System capacity meets or exceeds the available cfm from above. See Sections 3.2, 3.3, and 3.5 for information on determining air requirements.

☐ ***Air inlet/outlet connection:*** install air supply piping or connect an air supply hose that is the same size as the air inlet size. See Section 3.4 for details.

☐ ***Deliquescent (AirPrep ADS Systems):*** fill dryer vessel with deliquescent tablets. See Section 2.2 for capacity.

☐ ***Breathing air:*** provide Grade D air source for blast operators. See Section 3.9.

☐ ***PPE:*** provide all the necessary personal protective equipment. See Section 3.10.

☐ ***Pressure relief valve:*** install pressure relief valve if not provided on AirPrep System. See Section 3.11 for information on pressure relief valve installation.

☐ ***AirPrep System radiator drain:*** for environments where freezing is possible install a radiator drain ball valve to drain water that accumulates in the radiator. **Critical:** This will protect the radiator from damage caused by inside water freezing. See Section 5.3.

☐ ***Air motor lubricator:*** fill lubricator with SAE #10 oil and set correct drip rate as detailed in Section 7.2. Also see Sections 5.4, 5.6, & 8.5.4.

☐ ***Air motor pressure regulator:*** correct pressure is set by the manufacturer; however, to ensure optimum operation confirm that it is set correctly. See Sections 5.5 and 11.2.

☐ ***Electric power:*** AirPrep Systems equipped with an electric motor that must be installed by a qualified technician. Confirm the specified voltage to ensure proper installation. **Note:** motor starter thermal units are installed for the voltage specified at the time of purchase; if the voltage is changed during installation risk of overload or under protection will result. See Sections 3.7 and 5.7.

☐ ***Install ground:*** install earth ground. Electrically bond components. See Section 5.12.

☐ ***Operator training:*** all operators must completely read and understand the operation and maintenance manual and be properly trained in equipment and blast operations.

☐ ***AirPrep System Setup:*** follow procedures in Section 6.1.

4.0 AirPrep System General Operation

The function of the Schmidt® AirPrep System is to reduce the moisture content of the compressed air used in an abrasive blast system or for other compressed air requirements. The AirPrep System is supplied air from an air compressor which will then supply air to the blast nozzle. The abrasive blast stream through the blast nozzle is used for removing rust, paint, or other unwanted surface defects. After abrasive blasting, the surface is ready for new paint or coating.

The AirPrep System is one of a group of components used in an abrasive blasting job. The typical components are an air compressor, moisture removal device, an abrasive blaster, blast hose, a blast nozzle, operator personal protective equipment, and blast abrasive. See Figure 4.1.

The condensation of moisture in the air flow of a blast operation creates problems with the abrasive flow from the blast vessel; therefore, it is common for the compressed air to be fed through a moisture removal device, such as a Schmidt Air Prep System. The moisture condensation occurs when the compressed air is cooled. The typical occurrences of cooling are inside the blaster when the air expands, and on the surface of the object that is being blasted. An AirPrep System greatly reduces the moisture content in the blast air and air supplied to other equipment such as breathing air filters used in the blast operation. The abrasive blast stream and the dust it creates are harmful; therefore, all blast operators and other personnel in the blast vicinity must use personal protective equipment during the blast operation.

All the components required for the blast operation (except for the air compressor) are available from Axxiom Manufacturing, Inc. Call Axxiom to locate a distributor.

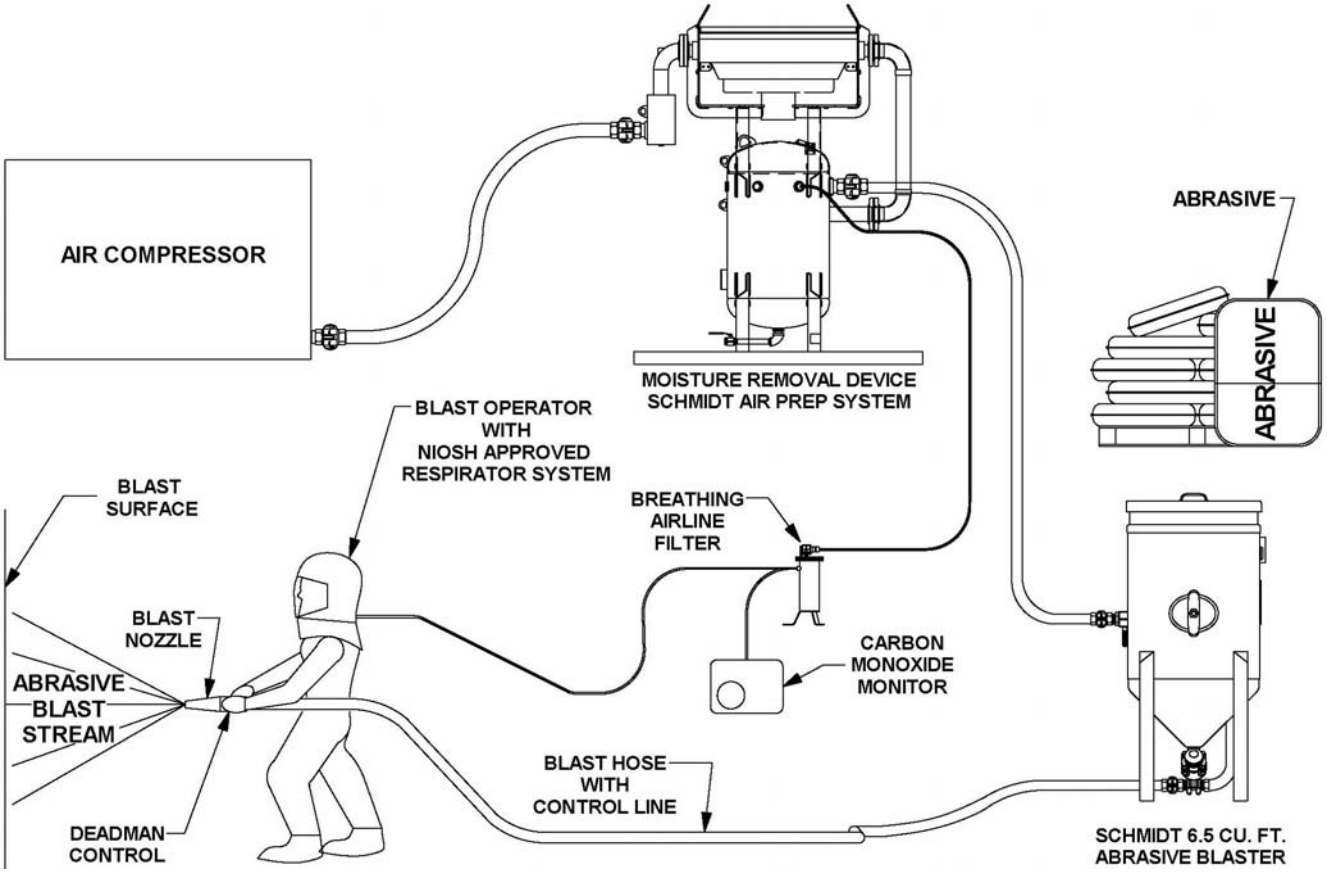


Figure 4.1 – Typical Abrasive Blast System

5.0 AirPrep System General Operation

See Figure 5.1 to help understand the general operation of an AirPrep System. Do not attempt to operate the AirPrep System before reading all sections of this manual and following all setup procedures. See Sections 5.1 through 5.14 and Section 6.0.

An AirPrep System is designed to cool, clean and dry compressed air for use in abrasive blasting equipment. The system removes moisture and contaminants that shorten the life of equipment controls and decrease blasting efficiency.

Compressed air enters the AirPrep System at the pre-filter (#1) which filters trash and condensed moisture from the incoming air. The air flow then enters the aftercooler radiator (#4) where the flow is passed through a heat exchanger. The heat exchanger is constructed of many tubes through which the compressed air passes. Air flow created by the fan and air motor assembly (#5) is blown across the heat exchanger tubes which cools the compressed air. The cooling of the air condenses much of the moisture into water droplets. The cooled air and water droplets flow into the separator tank (#12) at the inlet. As the air flow rises through the tank it passes through stainless steel particulate filter (ACS Systems only) or a bed of marbles then into the deliquescent/desiccant tablets (ADS Systems only). The incoming air flow causes the condensed moisture to fall to the bottom of the vessel. The moisture collected is drained from the bottom of the separator tank through the drain valve (#11).

The AirPrep fan air motor is turned on and off by the ball valve (#13). Closing the ball valve will disable the fan air motor (#5). The AirPrep System separator vessel (#12) is depressurized by closing the air compressor outlet ball valve and then opening the blowdown ball valve (#11) to completely vent the compressed air.

5.1 AirPrep System Air Inlet

The AirPrep System air inlet is located on the pre-filter (#1). The air inlet port is the same size as the aftercooler piping (see Section 2.7). On most models there are no fittings or ball valve provided for the air inlet. Only portable models include inlet/outlet ball valves and crowfeet. Any required fittings or ball valve must be provided by the owner/operator. Any valves, fittings or hoses installed on or connected to the AirPrep System air inlet port must have a minimum operating pressure of 150 psi.

⚠ WARNING

Valve, fitting, and/or hose rupture can cause serious injury or death. Do Not install or connect any valves, fittings or hoses that are not rated for a minimum 150 psi operating pressure.

5.2 Pre-filter

Compressed air enters the system through the air inlet pre-filter (#1) (the maximum inlet pressure should not exceed 150 psi). The pre-filter removes large particle contaminants and moisture from the incoming air. The water and debris that is removed by the pre-filter can be drained through the drain valve (#3) located at the bottom of the pre-filter. This ball valve should be left slightly open anytime the system is in operation. This allows water to be drained as it is filtered from the air. Leave the drain valve (#3) closed anytime the AirPrep System is not in use.

5.3 Aftercooler Radiator

After passing through the pre-filter, the air enters the aftercooler (#4). The aftercooler is a large fan cooled radiator that reduces the temperature of the compressed air which initiates moisture condensation. The fan is powered by either an air motor (#5) or an optional electric motor. Refer to Section 11.0 table 1 for the capacity of the aftercooler unit. The coil surfaces of the aftercooler radiator must be kept clean to maintain performance (see Section 8.0). **CRITICAL:** All AirPrep radiators include a 1/4" drain port plugged at the time of manufacture. When operating the system in an environment where freezing is possible install a ball valve in the radiator drain port to allow draining of accumulated water. This will protect against damage caused by inside water freezing.

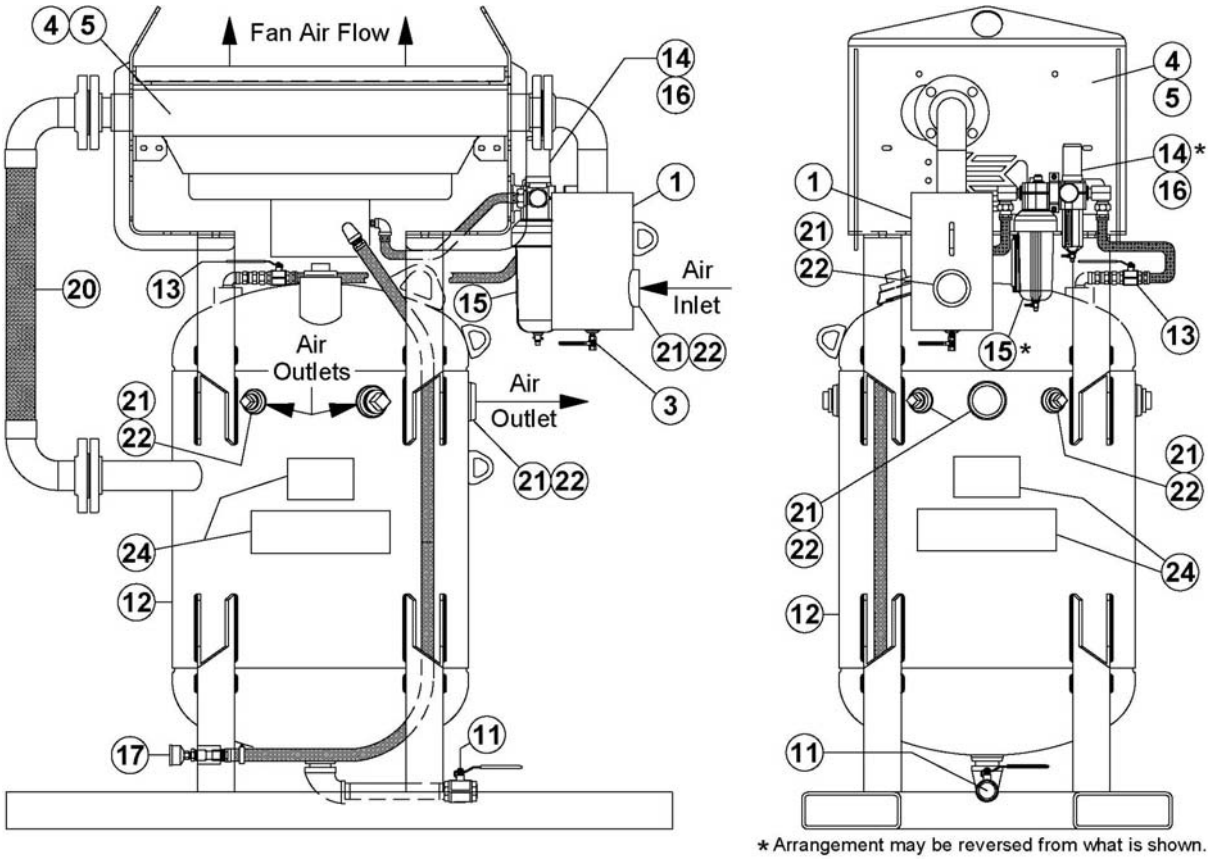


Figure 5.1(a) – Typical AirPrep Aftercooler System

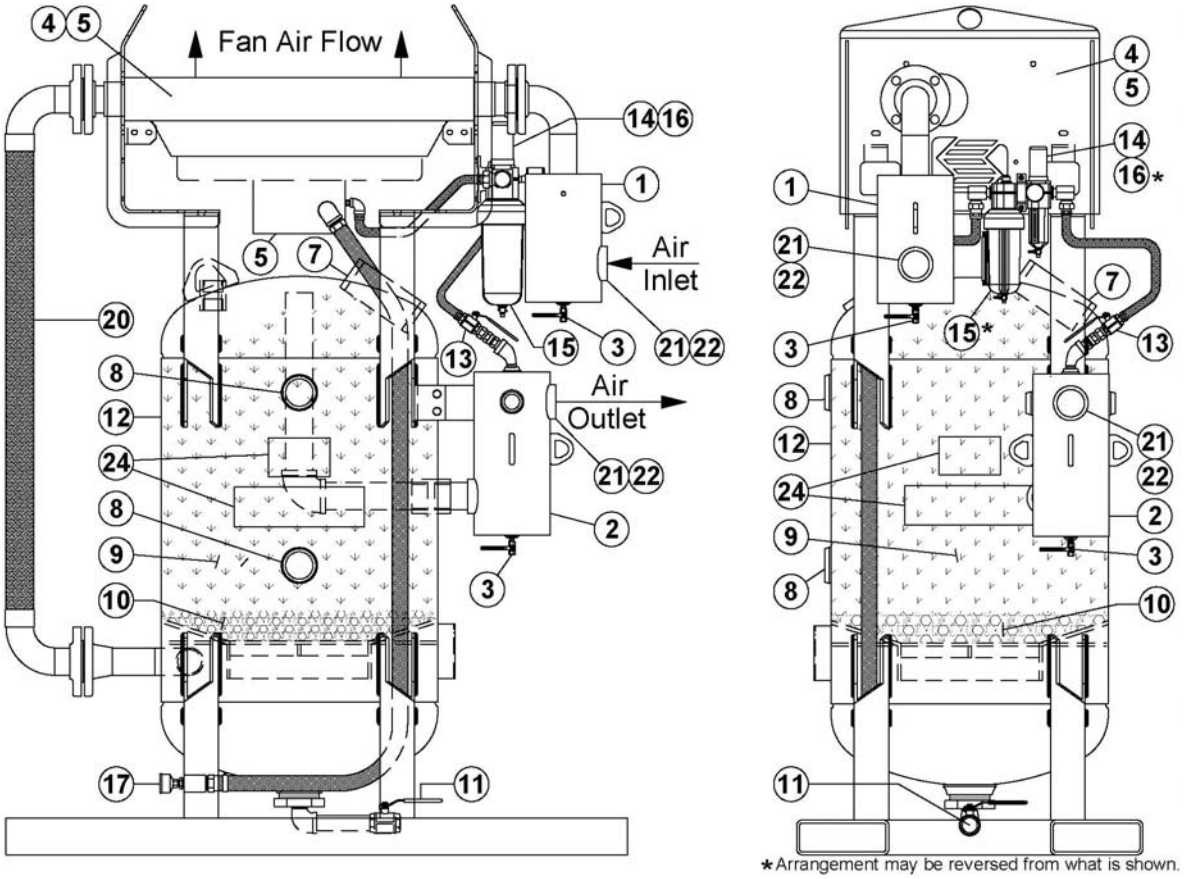


Figure 5.1(b) – Typical AirPrep Dryer System

5.4 Air Motor (radiator fan)

The air motor (#5) is a rotary type motor operated by compressed air. The expansion of the operating air during normal operation creates a cooling effect. Therefore, the temperature of the air motor will not exceed the higher of the surrounding atmosphere or the air input temperatures. The vanes of the air motor take up their own wear and will last 5,000-15,000 hours depending upon speed, method of oiling, operating pressure and the maintenance performed on the motor. The operating air must be clean, oiled and should not exceed the specified pressure; therefore, a filter/regulator and an automatic lubricator are installed in the air line upstream of the motor (refer to Section 11.0, Table 2 for air motor specifications). Ball valve (#13) turns off the air motor. **Note:** The air motor air supply must be clean, dry, and lubricated to minimize chance of motor failure.

5.5 Combination Air Filter/Regulator (fan air motor)

The compressed air supplied to the air motor passes through an air filter/regulator (#14) to remove moisture which could cause rust in the air motor and could cause ice to form on the exhaust muffler (#17). The water that is removed by the filter can be drained by opening the petcock valve at the bottom of the air filter. This valve should be left slightly opened anytime the system is in operation. This allows water to be drained as it is filtered from the air. Some models may be equipped with filters having automatic drains.

The aftercooler fan speed can be controlled by changing the supply air pressure. The pressure is adjusted by turning the knob of the air filter/regulator (#14), clockwise to increase pressure/motor speed and counterclockwise to decrease pressure/motor speed. The air pressure is indicated by the pressure gauge (#16) mounted on the regulator body. **Note:** The air motor pressure must not exceed the specified maximum pressure (see Section 11.0, Table 2).

5.6 Automatic Air Lubricator (fan air motor)

After the air motor supply air passes the filter/regulator it is oiled by the automatic micro-fog lubricator (#15). The amount of lubrication depends on the volume of air passing through the motor. A detergent SAE #10 automotive engine oil is recommended; however, SAE 10W-30 may be substituted. The lubricator flow rate is adjusted based upon the air cfm flow rate required for the air motor. Refer to Section 11.0, Table 2 for air flow and drip rate. The oil feed adjustment is made by turning the knob at the top of the lubricator, clockwise to increase flow or counterclockwise to decrease flow. The lubricator reservoir can be drained if contaminants accumulate inside.

⚠ CAUTION

Failure to properly lubricate the air motor as detailed above will result in costly motor failure.

Note: Filter/regulator and lubricator arrangement may vary from what is shown in Figure 5.1.

5.7 Electric Motor (radiator fan)

Electric aftercooler fan motors (#5) are optional and are available in various operating voltages depending on the size of the aftercooler. The motor characteristics are on the nameplate attached to the motor (see to Section 11.0, Table 2 for motor specifications). The motor should be connected to a power source of the same characteristics as the motor. Be sure to provide proper overload protection to minimize chance of possible motor burnout. Verify the “as purchased” specification before installation and operation. Follow the manufacturer’s installation recommendations. Turn the fan by hand to eliminate possible motor burnout in the event the fan has been damaged in shipment. Observe operation after motor is started for the first time. See drawings in Section 9.0.

⚠ DANGER

To protect against possible electrical shock, it is important to properly ground this unit using the grounding screw provided. Be sure not to disconnect the motor grounding wire when making this connection.

⚠ DANGER

Power connections to AirPrep System with electric motors expose operators to high electrical voltages. Contact with high electrical voltages can result in serious injury or death. Only qualified personnel should install or perform maintenance on the electrical system.

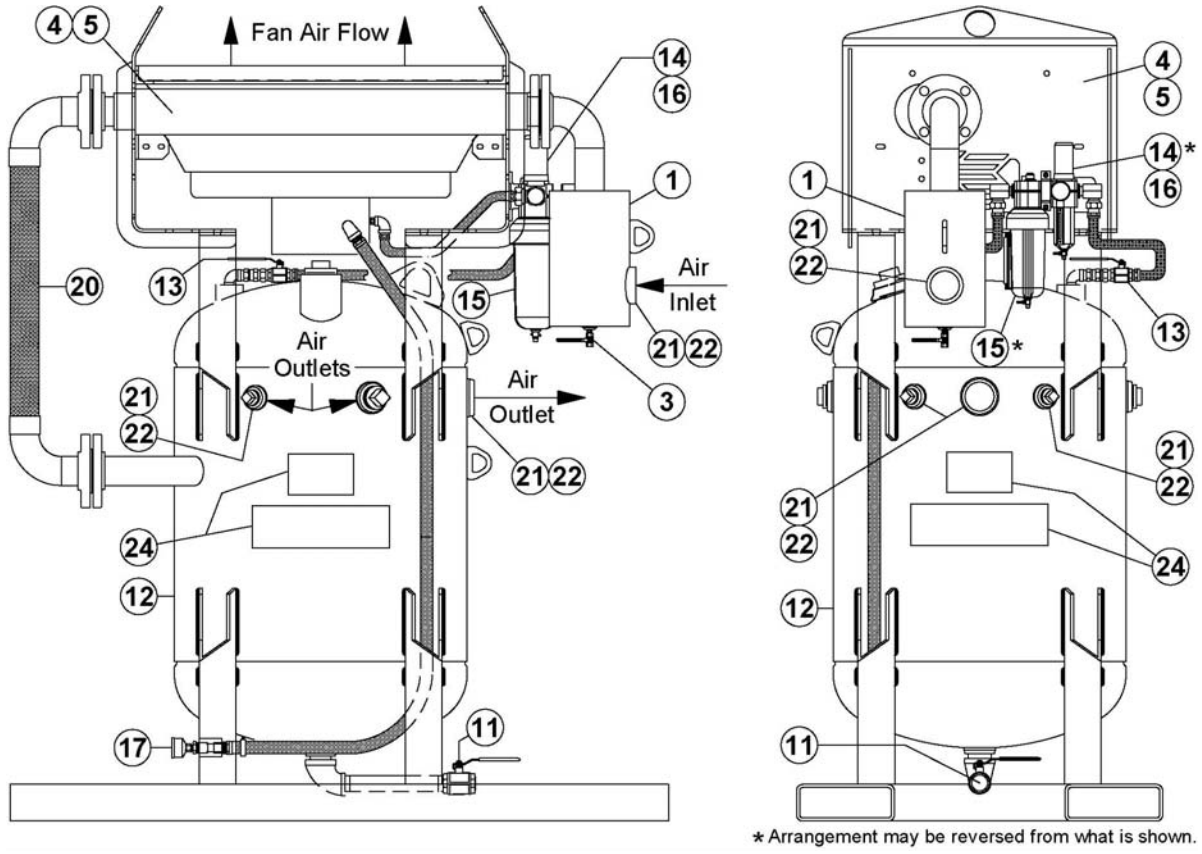


Figure 5.1(a) – Typical AirPrep Aftercooler System

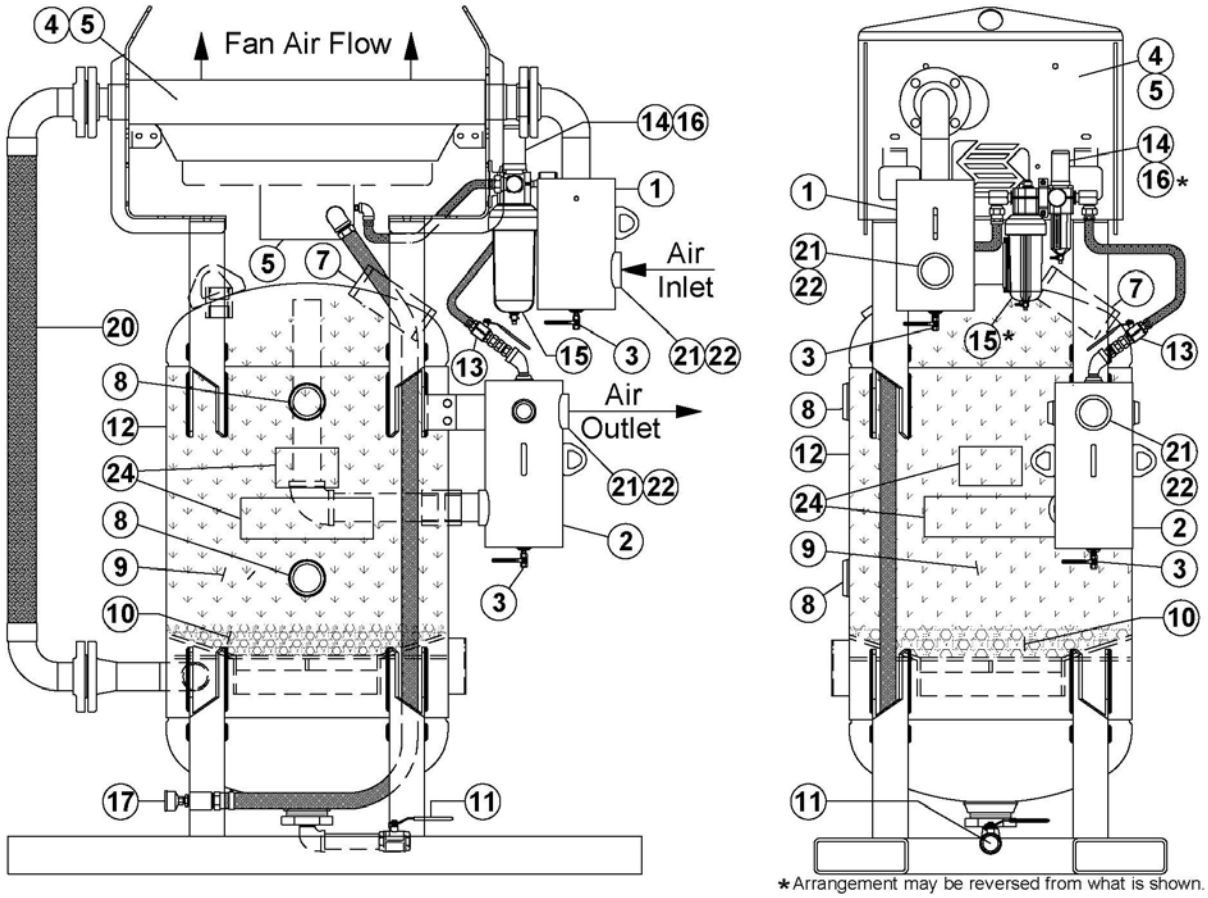


Figure 5.1(b) – Typical AirPrep Dryer System

5.8 Separator Tank

After the compressed air leaves the aftercooler, it enters the separator tank (#12). The separator tank allows the compressed air to expand causing moisture condensation. The air enters the tank at a low elevation through a tangential inlet. The cyclonic movement causes the water droplets in the air to drop to the bottom of the tank. As the air flow rises through the tank it passes through a stainless-steel particulate filter (ACS systems) or a bed of marbles (#10) then into the deliquescent/desiccant tablets (#9) (ADS Systems). The absorbed/adsorbed moisture then drops to the bottom of the separator tank. The moisture collected in the separator tank can be drained through the drain ball valve (#11). This ball valve should be left slightly open anytime the system is in operation. This allows water to be drained as it is filtered from the air. After each use the drain ball valve should be completely opened to drain all the moisture that has accumulated. The drain ball valve (#11) should be left closed anytime the unit is not in use.

⚠ DANGER

The Air Prep System separator tank is a Pressurized Vessel. Propelled objects will cause serious injury or death. Depressurize vessel before performing any maintenance. See Section 6.2.

5.9 ACS System Air Outlets

On ACS Aftercooler Systems the air outlets are located on the side of separator tank. There are five outlet ports: one primary outlet and four smaller auxiliary outlet ports. Portable models only have one outlet. Refer to Section 2.7 for the outlet sizes. Except for Portable models, there are no fittings or ball valves provided with the outlets. Any required fittings or ball valve should be provided by the user. Any valves, fittings or hoses installed on or connected to the AirPrep System air outlet ports must have a minimum operating pressure of 150 psi. Plug all outlet ports that are not used.

⚠ WARNING

Valve, fitting, and/or hose rupture can cause serious injury or death. Do Not install or connect any valves, fittings or hoses that are not rated for a minimum 150 psi operating pressure.

5.10 Deliquescent/Desiccant Tablets (ADS Systems only)

The volume of the ADS separator tank above the marble bed (#10) can be filled with deliquescent or desiccant tablets (#9). The tablets can be filled into the separator tank through the handway (#7) at the top. The deliquescent/desiccant tablets are not furnished with the AirPrep System. These materials are designed to lower the dew point of the compressed air by removing moisture. Deliquescent tablets absorb moisture and dissolve into a brine solution. Desiccant tablets adsorb moisture (adhesion to the contacting surface). The brine solution or water droplets then drop to the bottom of the separator tank. The moisture or brine solution can be drained through the ball valve (#11) at the bottom of the tank. **Note:** Keep all drains and outlet valves closed anytime the AirPrep System is not in use. This is to protect against moist air entering from outside of the system.
Note: ACS Systems are not designed for use of deliquescent/desiccant.

⚠ DANGER

The Air Prep System is a Pressurized Vessel. Propelled objects will cause serious injury or death. Depressurize vessel before performing any maintenance. See Section 6.2.

5.11 After-Filter (ADS Systems only)

The particulate after-filter (#2) removes particles of deliquescent or desiccant material that may have been carried over from the separator tank. The after-filter also is the air source for the aftercooler air motor. Any debris that is removed by the after-filter can be drained through the drain valve (#3) located at the bottom of the after-filter. The drain ball valve (#3) should be left closed anytime the AirPrep System is not in use.

5.12 ADS System Air Outlets

On ADS Dryer Systems the air outlets are located on the after-filter (#2). There are three air outlet ports: one primary outlet and two smaller auxiliary ports. Portable models only have one air outlet. Refer to Section 2.8 for the outlet sizes. There are no fittings or ball valves provided with the outlets. Any required fittings or ball valve should be provided by the user. Any valves, fittings or hoses installed on or connected to the AirPrep System air outlet ports must have a minimum operating pressure of 150 psi. Plug all outlet ports that are not used.

⚠ WARNING

Valve, fitting, and/or hose rupture can cause serious injury or death. Do Not install or connect any valves, fittings or hoses that are not rated for a minimum 150 psi operating pressure.

⚠ CAUTION

Static electric shock hazard. To minimize chance of static electrical shock to operating personnel only use anti-static blast hose, properly electrically bond the blast nozzle, blast hose couplings, and the equipment, and properly install an earth ground to the abrasive blaster.

5.11 Depressurize (Blowdown)

The drain ball valve (#11) is used to release all the compressed air (depressurize) from inside the AirPrep System separator tank (#12). The AirPrep System must be depressurized for filling with deliquescent /desiccant tablets (ADS Systems), or to perform any maintenance. To depressurize the separator tank, turn off the air compressor and/or close the compressor's outlet valve, then slowly open the drain ball valve (#11) located at the bottom of the tank (see Section 6.2). The drain ball valve should be left closed anytime the unit in not in use. If the ADS System drain ball valve is left open deliquescent/desiccant tablets will remove moisture from air entering from outside the tank.

⚠ WARNING

Airborne particles and loud noise hazards from blowdown exhaust air can cause serious injury and loss of hearing. Wear approved eye and ear protection. Stay clear of blowdown air path. DO NOT place hands or other body parts in the blowdown air path. Make sure no personnel are in the blowdown air path.

5.14 Hose Connection

Hose connections 2" and smaller can be made with 4-lug type crowfoot couplings. All air hose couplings have pin holes that align when connected. To protect against accidental hose disconnections safety pins (#21) must be installed through these holes. As a secondary safety measure each hose connection should also include a hose whip check (#22) that will hold the hose if there is an accidental disconnection. Connect one loop to each side of the connection and stretch out as shown in Figure 5.3 below. All air hose couplings have a gasket that seals the connection and should be replaced when air is leaking. **Note:** Air line connections larger than 2" must be made using ANSI type flanges, ground joint fittings, or other approved method rated for 150psi operating pressure.

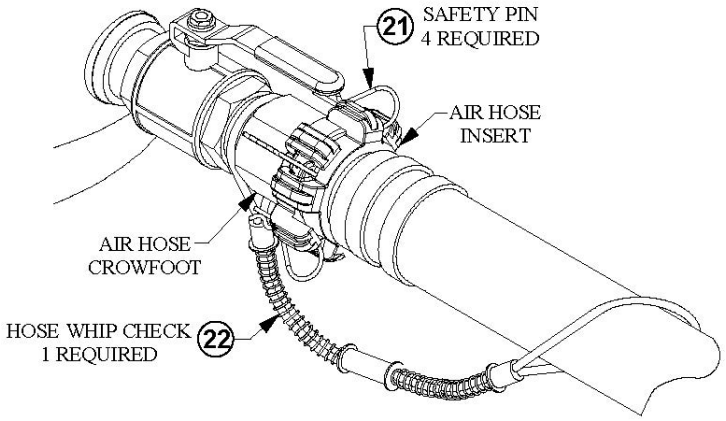


Figure 5.2 – Hose Connection Disconnect Protection

6.0 Pre-operation Procedures

⚠ DANGER

Failure to follow the procedures below could result in serious injury or death. In addition to these procedures completely read and understand all sections of this *Operation and Maintenance Manual*.

⚠ DANGER

The AirPrep System is a pressurized vessel. Propelled objects will cause serious injury or death. Depressurize vessel before performing any maintenance. See Section 6.2.

This section contains part identification numbers (#) within the text that are found on the Figure 6.1. Refer to these drawings as needed while reading this manual.

6.1 AirPrep System Setup Procedure (see Figure 6.1)

6.1.1 Confirm that the AirPrep System has been properly maintained and inspected as detailed in Section 8.0.

6.1.2. Verify that all required personal protective equipment is available for each operator and in good operating condition (safety glasses, safety shoes, ear plugs, and gloves). *Critical: Adhere to all local, state, and federal regulations including, but not limited to, OSHA (Occupational Safety and Health Administration).*

⚠ WARNING

Failure to use personal protective equipment could result in serious injury or death.

6.1.3. Make certain that the AirPrep System is not pressurized. Follow the depressurizing procedure given in Section 6.2.

⚠ WARNING

Airborne particles and loud noise hazards from blowdown exhaust air can cause serious injury and loss of hearing. Wear approved eye and ear protection. Stay clear of blowdown air path. DO NOT place hands or other body parts in the blowdown air path. Make sure no personnel are in the blowdown air path.

6.1.4. Do Not operate this equipment without a pressure relief device in place. The ASME Code requires that all vessels be provided with pressure relief devices. See Section 3.11.

⚠ DANGER

Rupture Hazard. Operating the pressure vessel above the maximum allowable working pressure can result in rupturing the pressure vessel. Install an air pressure relief valve to protect against over pressurization of the blast vessel. See Section 3.11.

6.1.5. To minimize chance of static electrical shock to operating personnel only use anti-static hoses and properly install an earth ground to the AirPrep System. See Section 5.12.

⚠ CAUTION

Static electric shock hazard. To minimize chance of static electrical shock to operating personnel only use anti-static blast hose, properly electrically bond the blast nozzle, blast hose couplings, and the equipment, and properly install an earth ground to the abrasive blaster. See Section 5.12.

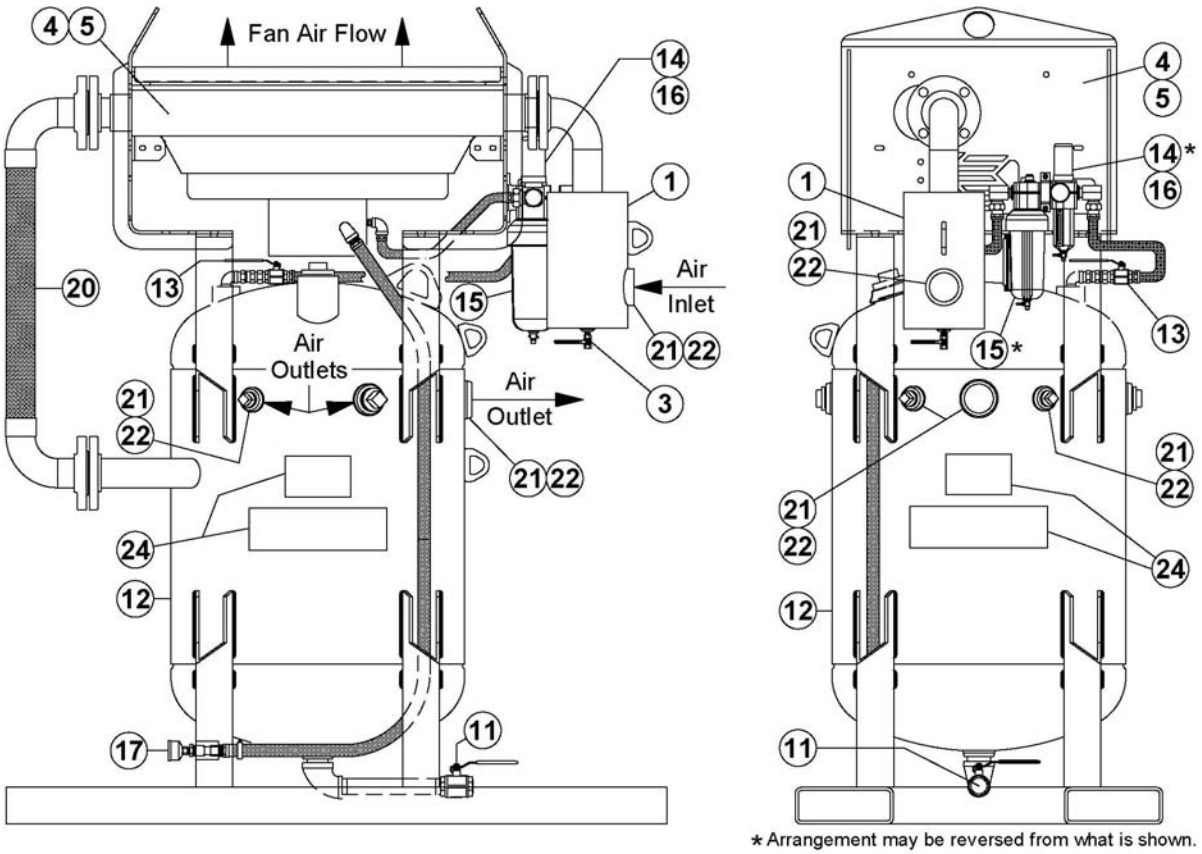


Figure 6.1(a) – Typical AirPrep Aftercooler System

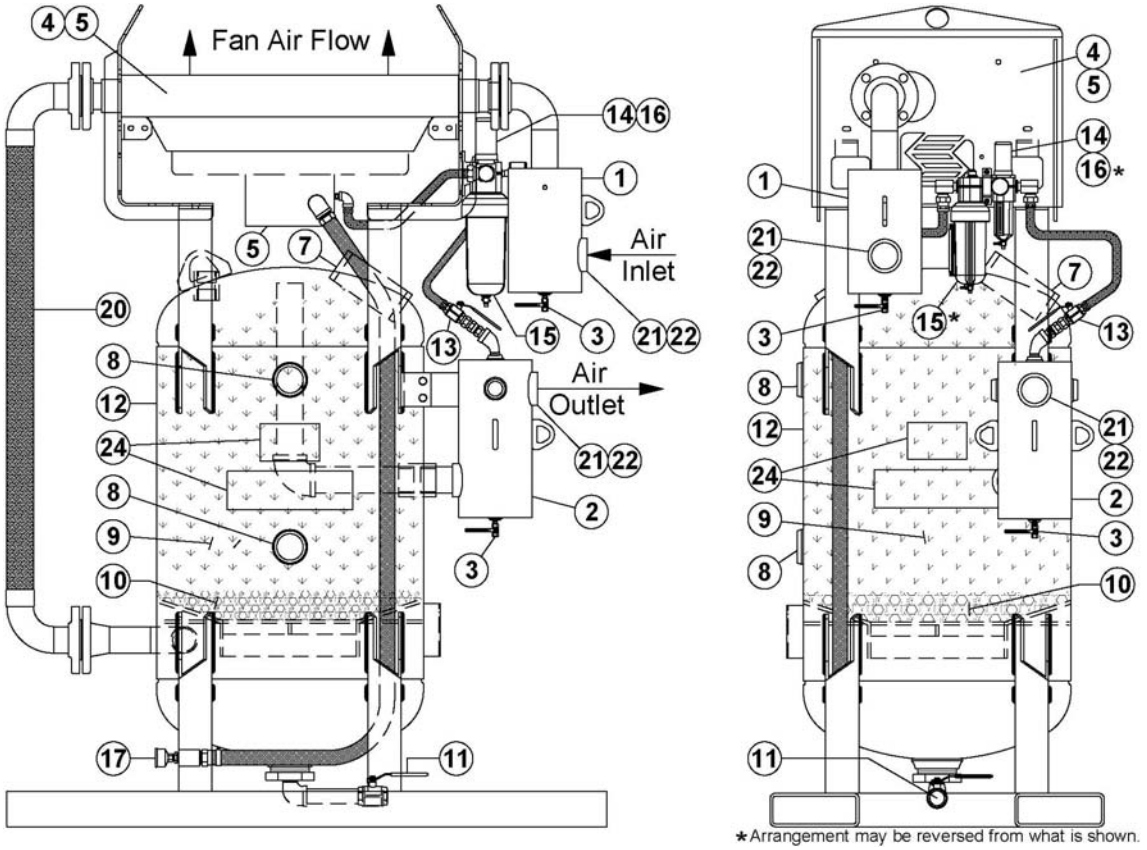


Figure 6.1(b) – Typical AirPrep Dryer System

6.1.6. Units having electric aftercooler fan motors must be installed by qualified personnel. Follow manufacturer's recommendations.

⚠ DANGER

Power connections to AirPrep System with electric motors expose operators to high electrical voltages. Contact with high electrical voltages can result in serious injury or death. Only qualified personnel should install or perform maintenance on the electrical system.

6.1.7. Open drain valves (#3) on the pre-filter (#1) and after-filter (#2), petcock valve (#14) (units with air motor) and drain valve (#11) on the separator tank to drain out moisture inside. **Note:** These drain valves should be left closed when the unit is not in use.

6.1.8. Close drain valves (#3), (#11) and petcock valve (#14).

6.1.9. Close all the air outlet ball valve(s) (provided by user).

6.1.10. If the unit has an electric aftercooler motor skip to 6.1.13. If the aftercooler has an air motor, close the air motor on/off ball valve (#13).

6.1.11. Check the reservoir of the air lubricator (#15) for debris in the oil. If necessary, drain the oil through the petcock valve at the bottom of the bowl. Fill the oil reservoir of the automatic air lubricator (#15) with detergent SAE #10 automotive engine oil. Lubricator adjustment is detailed in Sections 5.6 and 7.2. **Note:** Filter/regulator and lubricator arrangement may vary from what is shown in Figure 6.1.

6.1.12. Tighten the bowls on air filter (#14) and air lubricator (#15).

6.1.13. Check the level of the deliquescent/desiccant tablets (#9). Fill if necessary, through the upper handway opening (#7). (ADS Systems only)

6.1.14. Properly install the handway (#7) on the separator tank (#12). See Section 6.3.

6.1.15. Turn the aftercooler fan (#4) by hand to be sure that no damage has occurred to fan during shipment or time of non-use. This will eliminate possible motor burnout.

6.1.16. Connect an air supply hose to the air inlet on the pre-filter (#1) and install safety clips to protect against accidental disconnections during operation.

⚠ WARNING

Failure to install safety pins on all hose couplings could result in serious injury or death. See Sections 5.1, 5.14, and 8.8.

6.1.17. Connect output air supply hose(s) to the outlet connections on the separator tank (#12) (ACS Systems) or the after-filter (#2) (ADS Systems) and install safety clips (#21) and hose whip checks (#22) to protect against accidental disconnections during operation. See Sections 5.1, 5.14, and 8.8.

⚠ WARNING

Failure to install safety pins and whip checks on all hose couplings could result in serious injury or death. See Sections 5.1, 5.14, and 8.8.

6.2 AirPrep System Depressurizing Procedure (Blowdown)

6.2.1. Close the air compressor outlet ball valve (#44, provided by user). See Figure 6.2.

⚠ CAUTION

The air compressor ball valve is not part of the AirPrep System and is not provided with the unit. It is the responsibility of the user to verify that an air compressor outlet ball valve is installed so the AirPrep System can be isolated from the air compressor.

6.2.2. Close all the AirPrep System air outlet ball valve(s) (#45, provided by user).

⚠ CAUTION

The air outlet ball valve(s) are not provided with most AirPrep Systems. It is the responsibility of the user to install outlet ball valve(s) so air pressure can be isolated from other equipment. See Section 5.13.

6.2.3. Depressurize all equipment connected to the AirPrep System outlet(s) following the manufacturer's procedures. This will protect the AirPrep System from backflow of debris.

⚠ WARNING

When depressurizing equipment connected to the AirPrep system ensure that air is not trapped in the air supply hoses.

6.2.4. Leave the AirPrep System air inlet ball valve open during this step. This will allow the air pressure in the air supply hose to vent during the blowdown process in step 6.2.5 below.

6.2.5. Slowly open the drain/blowdown ball valve (#11). As the blowdown ball valve (#11) is opened air pressure inside will exhaust out and depressurize the separator tank (#12).

⚠ WARNING

Airborne particles and loud noise hazards from blowdown exhaust air can cause serious injury and loss of hearing. Wear approved eye and ear protection. Stay clear of blowdown air path. DO NOT place hands or other body parts in the blowdown air path. Make sure no personnel are in the blowdown air path.

The AirPrep System separator tank (#12) is completely depressurized when the drain/blowdown ball valve (#11) is open with no airflow from it.

6.2.6. Close the AirPrep System inlet ball valve (#46, provided by user).

⚠ CAUTION

The air inlet ball valve is not provided with most AirPrep System. It is the responsibility of the user to install the inlet ball valve so AirPrep System can be locally isolated from the compressed air source. See Section 5.1.

6.2.7. Close the drain/blowdown ball valve (#11).

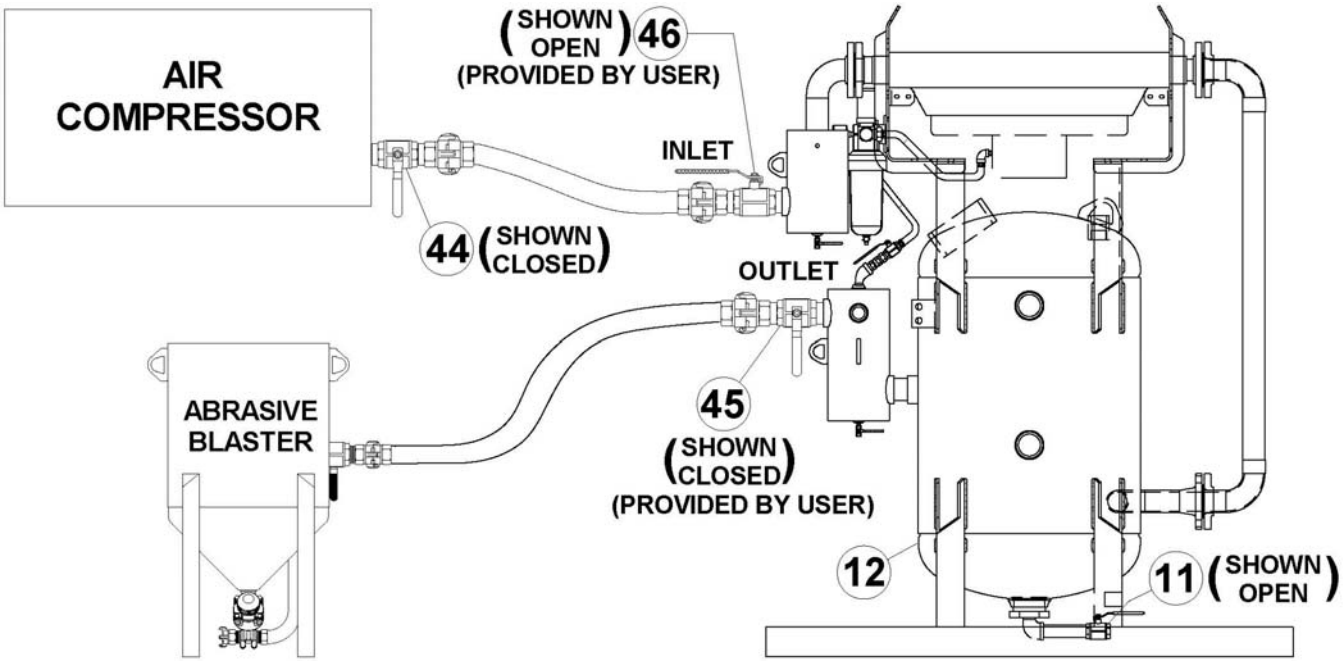


Figure 6.2 – Typical AirPrep System (ADS System shown)

6.3 Handway Cover Installation Procedures (See Figure 6.3(a))

6.4.1. Check that the handway cover, crab, bolt, and gasket are dimensionally correct for the size handway weld ring of the pressure vessel.

a) Measure and write down the inside dimension's "A" and "B" of the handway weld ring. See Figure 6.4(a).

b) Verify the size of the handway assembly by comparing the weld ring measurements from step "a" to the dimensions shown in Table 6.4(c).

c) Verify that the dimensions of the cover, crab, bolt, and gasket match the corresponding dimensions given in Table 6.4(c). **Note:** The actual dimensions may vary by up to 1/4" from those given in Table 6.4(c).

d) Replace any component that is not dimensionally correct. Incorrect dimensions indicate that the component is part of a different size handway assembly.

⚠ DANGER

The handway assembly is part of a Pressurized Vessel. Use of incorrect handway components will result in assembly failure. Assembly failure will propel objects causing serious injury or death.

6.4.2. Once a month inspect the handway gasket for tears, cracks, or other wear. Replace if necessary.

6.4.3. Once a month inspect the handway weld ring sealing surface inside the vessel. Inspect the handway cover sealing surface. Both surfaces must be smooth.

6.4.4. Place the gasket on the handway cover then fit both through the opening.

6.4.5. Place the cover and gasket in position against the inside edge of the handway weld ring. Apply a pulling force to hold in position then proceed. ***See note below.**

6.4.6. Center the gasket on the handway weld ring.

6.4.7. Center the handway cover on the gasket.

6.4.8. Center the handway crab on the outside weld ring.

6.4.9. Slide the handway crab bolt to the inside edge of the slot before tightening. See Figure 6.4(a).

6.4.10. When all components are centered and the crab bolt is bottomed in the slot, tighten the nut onto the bolt with a wrench until snug.

6.4.11. Only after completing all the pre-operation procedures in Section 6.0 and the abrasive blast vessel is then pressurized, re-tighten the nut with a wrench until snug again.

6.4.12. Do not over-tighten the crab nut and bolt. Over-tightening could bend the crab out of shape resulting in malfunction of the assembly.

6.3.13. Periodically check for leaks.

***Note:** Contact Axxiom Manufacturing or an Authorized Schmidt distributor and request information on the new SureFit™ Handway Gasket (patent pending) that eliminates the difficulty of aligning the gasket. Scan the QR Tag on the left to view a short video.

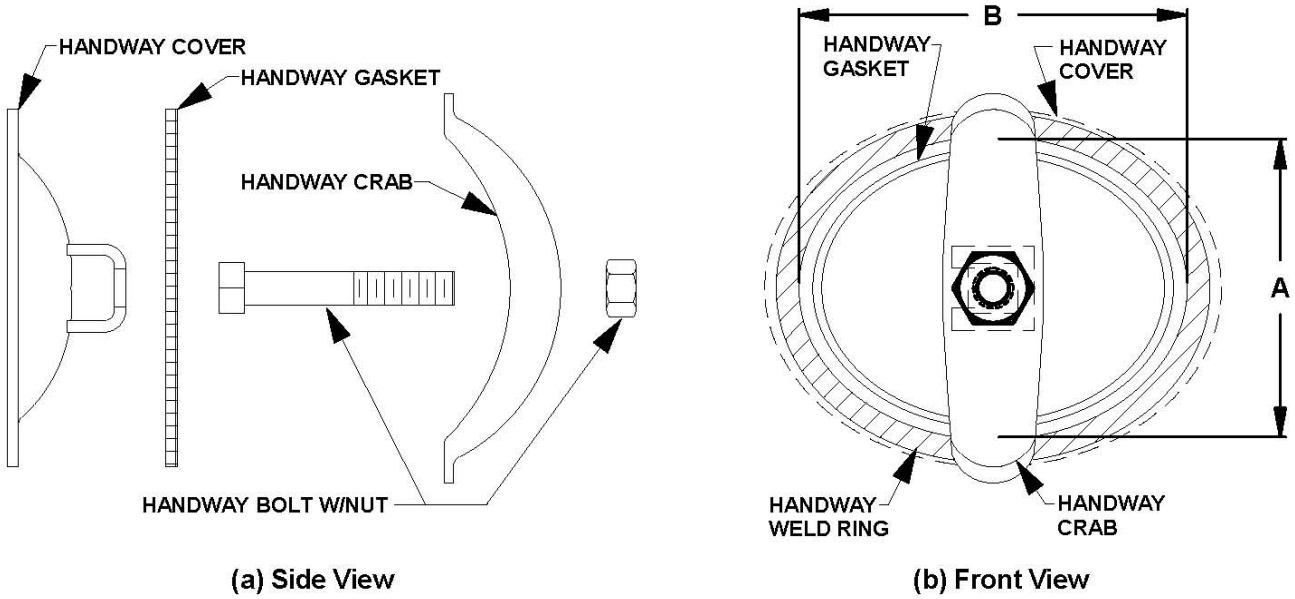


Figure 6.4 (a) – Handway Assembly

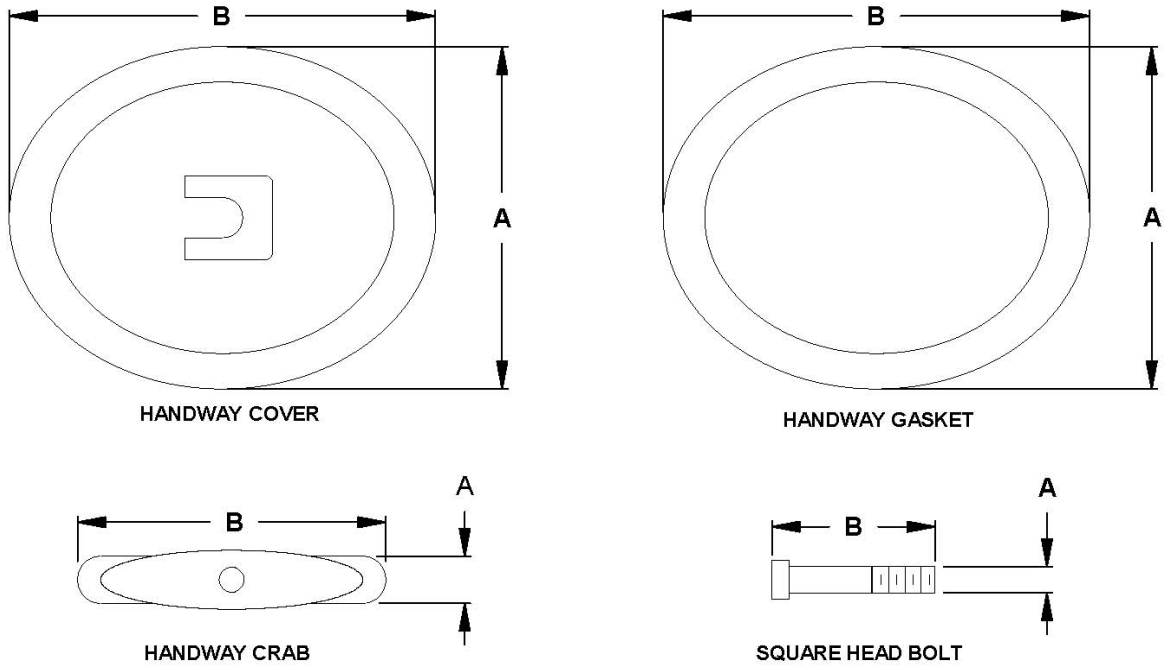


Figure 6.4 (b) – Handway Components

6” x 8” Handway Dimensions		
Component	**A**	**B**
Weld Ring	6-5/8”	8-1/2”
Handway Cover	7-5/8”	9-3/4”
Handway Gasket	7-3/4”	9-3/4”
SureFit™ Gasket	8-1/16”	10-5/16”
Handway Crab	2-3/8”	8-3/4”
Square Head Bolt	3/4”-10 UNC	4-1/2”

Table 6.4 (c) – Handway Component Dimensions

7.0 Operating Instructions

7.1 Filling the AirPrep Air Dryer System with Deliquescent/Desiccant (ADS Systems only)

7.1.1. The AirPrep ADS System must be completely depressurized before filling with deliquescent can begin. Follow the depressurizing procedure in Section 6.2.

⚠ WARNING

Airborne particles and loud noise hazards from blowdown exhaust air can cause serious injury and loss of hearing. Wear approved eye and ear protection. Stay clear of blowdown air path. DO NOT place hands or other body parts in the blowdown air path. Make sure no personnel are in the blowdown air path.

7.1.2. Open the pre-filter (#1) drain ball valve (#3) to check for air flow. No air flow indicates that the AirPrep System is depressurized. See Figure 7.1(b).

7.1.3. Remove the handway cover (#7) at the top of the separator tank (#12).

7.1.4. Check inside the separator tank for looseness of the deliquescent/desiccant tablets (#9). Extended exposure to moisture will fuse the tablets together and can possibly block or restrict air flow. Break apart fused tablets with a long rod or similar device. Fill with tablets to the top of the separator tank (#12).

7.1.5. Re-install the handway cover and gasket (#7). See Section 6.3 for installation procedure.

7.1.6. Only after completing all the pre-operation procedures in Sections 6.0 and 7.1, and the AirPrep System is then pressurized per Section 7.2, check the handway(s) (#7) for leaks. Periodically check the handway(s) for leaks thereafter.

7.2 AirPrep System Startup (refer to Figure 7.1)

7.2.1. The AirPrep System must be properly prepared and all operating personnel must be thoroughly trained before operation. Completely read and understand all sections of this manual before beginning operation. See the pre-operation procedures given in Section 6.0.

7.2.2. Perform the required inspections and maintenance before beginning AirPrep System operation. See the instructions given in Section 8.0.

⚠ DANGER

The AirPrep System is a Pressurized Vessel. Propelled objects will cause serious injury or death. Depressurize vessel before performing any maintenance. See Section 6.2.

7.2.3. Supply air to the AirPrep System by starting the air compressor and opening the compressor's air outlet valve (#44).

7.2.4. Open the AirPrep System air inlet ball valve (#46). **Note:** This valve is provided by the equipment owner/operator and filed installed. See Figure 6.2 and Section 5.1.

7.2.5. Slightly open drain valves (#3), (#11) and petcock valve (#14) (units with air motor) so that moisture/debris can be drained from the pre-filter, after-filter, separator tank, and air filter as it is removed from the compressed air.

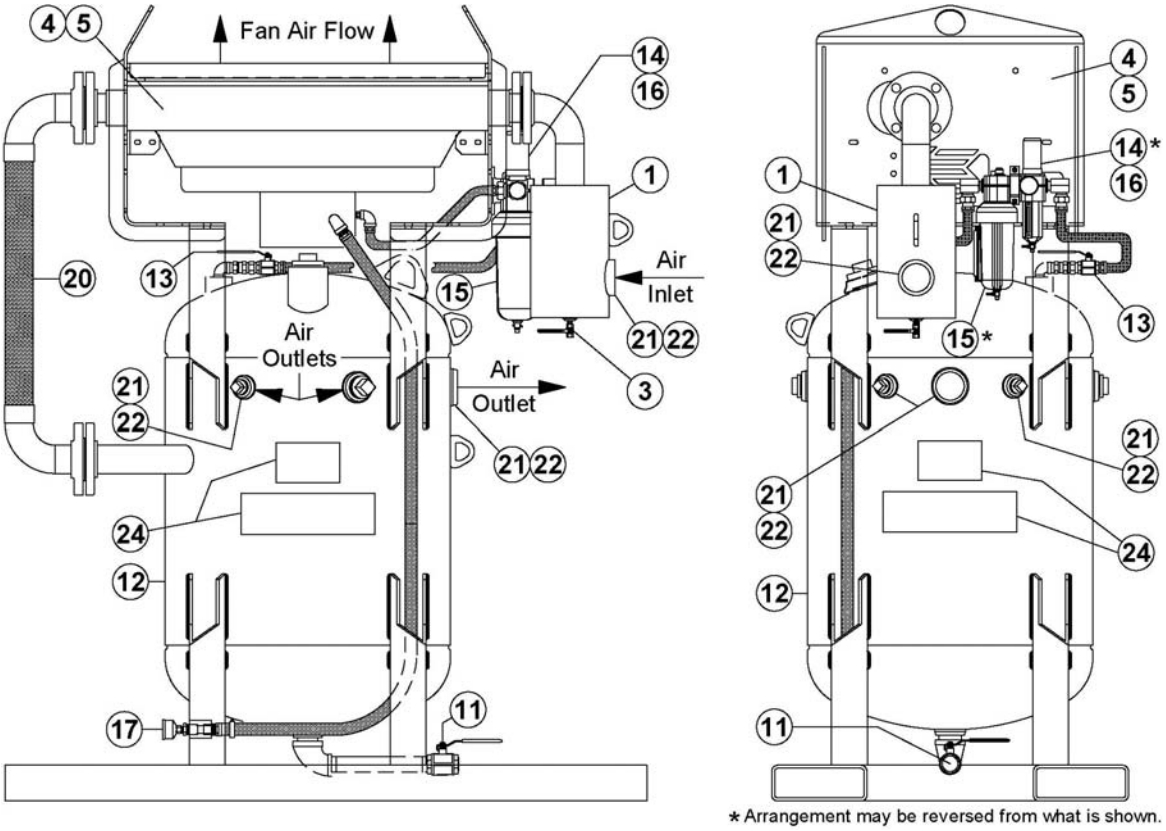


Figure 7.1(a) – Typical AirPrep Aftercooler System

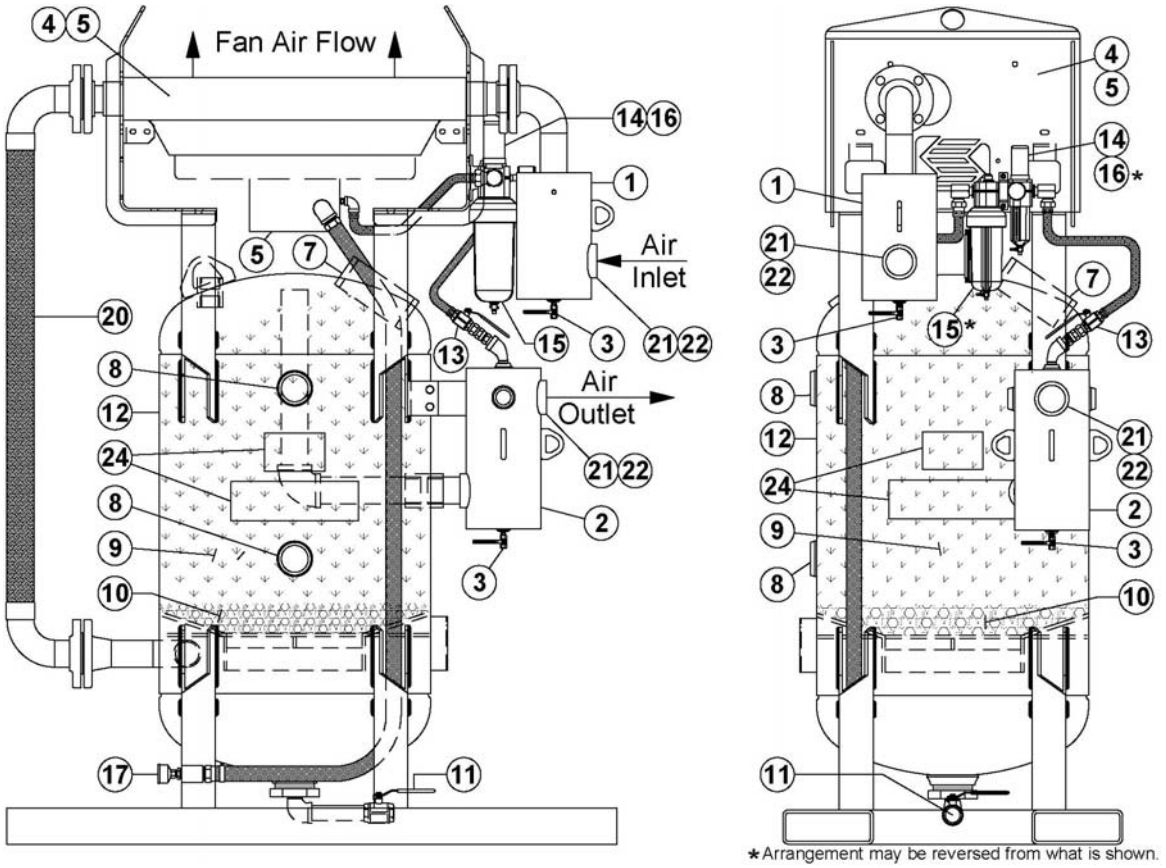


Figure 7.1(b) – Typical AirPrep Dryer System

7.2.5. If the unit has an electric aftercooler motor, press the “Start” button to begin cooling fan operation, then skip to step 7.2.8. If the aftercooler has an air motor, open the air motor on/off ball valve (#13).

7.2.6. Adjust air pressure regulator (#14) to the required pressure. See Section 11.0 for correct air motor inlet pressure setting. Turn clockwise to increase pressure/motor speed and counterclockwise to decrease pressure/motor speed.

⚠ CAUTION

Do not exceed maximum air motor pressure. Exceeding the air motor operating pressure can cause system failure. See Section 11.0, Table 2 for air motor operating pressure.

7.2.7. Adjust the lubricator (#15) to the proper flow rate. The lubricator flow rate is adjusted based upon the air cfm flow rate required for the air motor. Refer to Section 11.0, Table 2 for air flow and drip rate requirement. Turn the socket head screw on top of the lubricator to adjust flow (clockwise to increase flow, counterclockwise to decrease flow). See Section 5.6.

⚠ CAUTION

Failure to lubricate the air motor will result in motor failure. See Section 11.0, Table 2 for air motor cfm requirements.

Note: Filter/regulator and lubricator arrangement may vary from what is shown in Figure 7.1(a) and 7.1(b).

7.2.8. Confirm that the aftercooler fan rotation is correct. The airflow should be up through the radiator (#4). Incorrect air flow indicates the air motor (#5) air supply and exhaust ports are reversed. On units with electric fan motors electrical changes are required. Consult a qualified electrician.

7.2.9. Open outlet ball valve(s) (#45) to supply air to the connected equipment (see Figure 6.2).

7.3 AirPrep System Shutdown

7.3.1 Close the aftercooler motor air supply valve (#13). On electric units press the “Stop” button on the motor starter control box to end cooling fan operation.

7.3.2 Close all the AirPrep System air outlet ball valves (see Figure 6.2).

7.3.3 Turn off the air compressor and/or close the compressor’s outlet valve (see Figure 6.2).

7.3.4 Open drain valve (#3) on the pre-filter (#1), after-filter (#2) and petcock valve (#1) (units with air motor) to drain moisture and clean out dirt particles.

7.3.5 Completely depressurize the AirPrep System separator tank (#12) by slowly and completely opening the blowdown ball valve (#11). See Section 6.2 for blowdown procedure.

⚠ WARNING

Airborne particles and loud noise hazard from the blowdown exhaust air can cause serious injury and loss of hearing. Wear approved eye and ear protection. Stay clear of blowdown air path. DO NOT place hands or other body parts in the blowdown air path. Make sure no personnel are in the blowdown air path.

7.3.6 Close drain valves (#3), (#14), and petcock valve (#11).

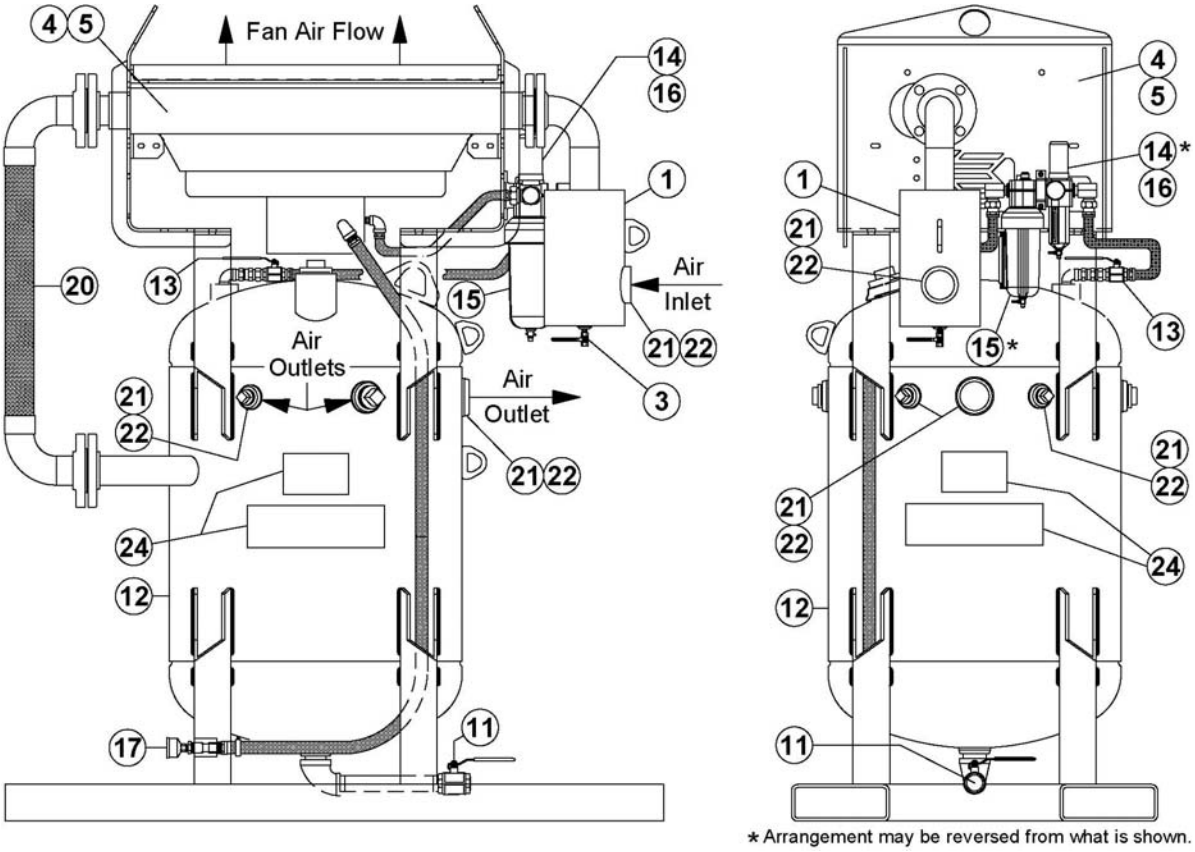


Figure 7.1(a) – Typical AirPrep Aftercooler System

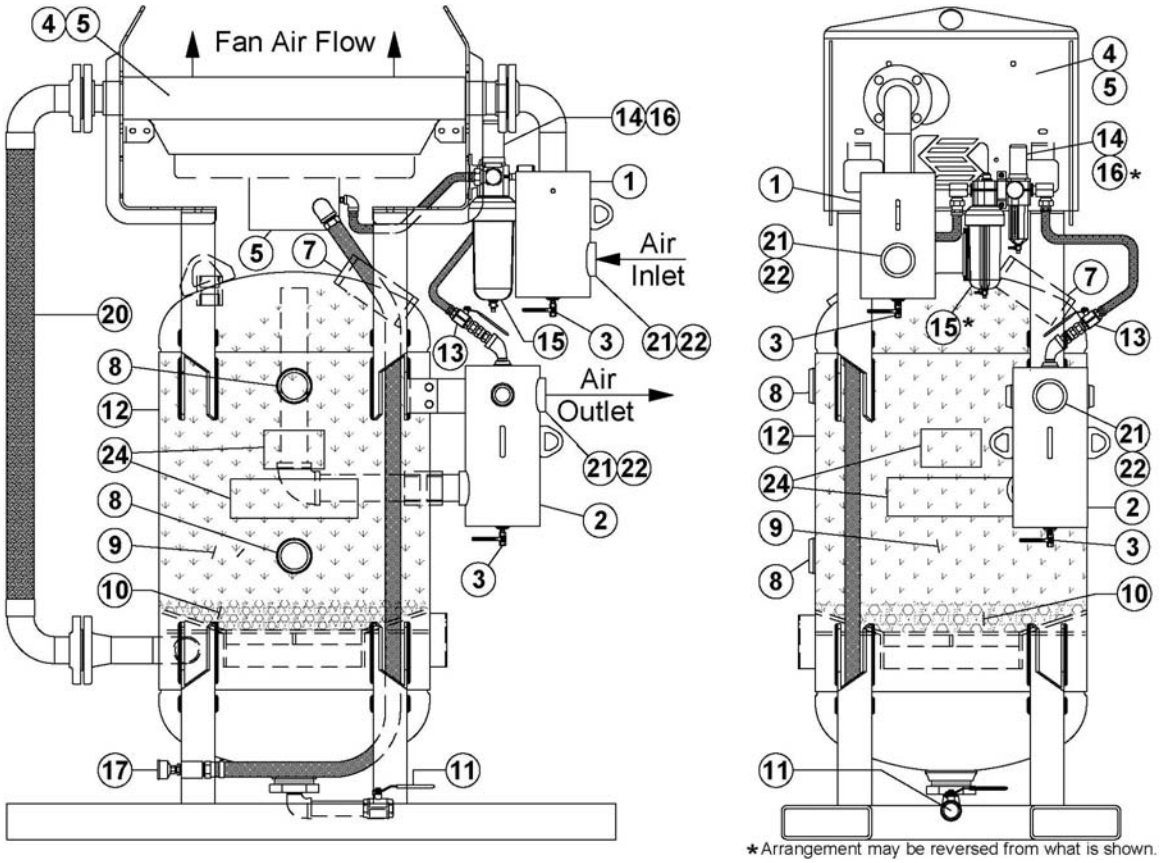


Figure 7.1(b) – Typical AirPrep Dryer System

8.0 Maintenance and Inspection Instructions

DANGER

The AirPrep System is a Pressurized Vessel. Propelled objects will cause serious injury or death. Depressurize vessel before performing any maintenance. See Section 6.2.

8.1. ***AirPrep System Pressure Vessel:*** The ASME Code is a standard covering materials, design, fabrication, and installation. Vessel integrity after purchase is the responsibility of the owner and/or user. At intervals required by state law and/or local authorities, the vessel should be subjected to a hydrostatic test as described in the ASME Code, Section VIII, Division 1. Do Not subject the AirPrep System pressure vessel to a pneumatic proof test exceeding the maximum allowable working pressure. In no case should the hydrostatic test pressure exceed 1.3 times the maximum allowable working pressure (MAWP) shown on the pressure vessel nameplate. Thoroughly clean and dry the vessel before re-assembly. Moisture or debris left in vessel can cause equipment malfunction.

8.2. ***AirPrep System Pressure Vessel:*** Any damage to an AirPrep System can make it unsafe. Inspect the exterior of the AirPrep System pressure vessel weekly for corrosion, pitting, or other damage (i.e. dents, gouges or bulges). If damaged, take out of service immediately and have it inspected and/or repaired by a qualified facility. Contact Axxiom Manufacturing, Inc. for technical support.

8.3. ***AirPrep System Pressure Vessel:*** The interior condition of the AirPrep System pressure vessel (#12) should be inspected quarterly. Pitting caused by corrosion will reduce the wall thickness of the vessel. If excessive corrosion is found, have the abrasive blast vessel inspected by a qualified facility. Contact Axxiom Manufacturing, Inc. for technical support. Refer to the ASME Data report for the pressure vessel minimum thicknesses.

Check the pressure vessel internal piping for corrosion, cracks, wear, holes, or any other damage. Repair or replace damaged components.

8.4. ***Moisture Accumulation***

Once a day with the AirPrep System pressurized completely open the drain valves (#3) on the pre-filter (#1) and after-filter (#2), the air filter petcock valve (#14), and the drain/blowdown ball valve (#11) to blow out all moisture and debris that may have accumulated. Close these ball valves when the AirPrep System is not in use.

8.5. ***Aftercooler Radiator (Heat Exchanger)***

Inspect the unit quarterly for loose bolts and/or connections. Inspect for corrosion and dirty/clogged heat transfer surface (cooling coil). Caustic cleaners should not be used to clean any part of the aftercooler radiator.

8.5.1. ***Heat Exchanger Surface***

Dirt and dust should be removed by brushing the cooling fins and tubes then blowing loose dirt off with an air hose. If the surface is greasy, the motor should be removed, and the fins and tubes should be brushed or sprayed with a non-flammable degreasing fluid. Follow with a hot water rinse and dry thoroughly. A steam hose may also be used effectively. Check the surface for bent fins. Bent cooling fins restrict air flow and reduce the cooling capabilities of the AirPrep System. Straighten and separate any bent heat exchanger cooling fins.

8.5.2. ***Fan shroud, Fan, Fan Guard, and Motor***

Inspect weekly: Dirt and grease should be removed from these parts. Rusty or corroded surfaces should be sanded clean and repainted. Replace any component that is damaged or corroded. Install fan blade assembly as shown in Figure 8.1.

Note: A corroded fan shroud allows fan air flow to escape resulting in cooling reduction. Damaged fan guard may not protect personnel from contact with moving parts.

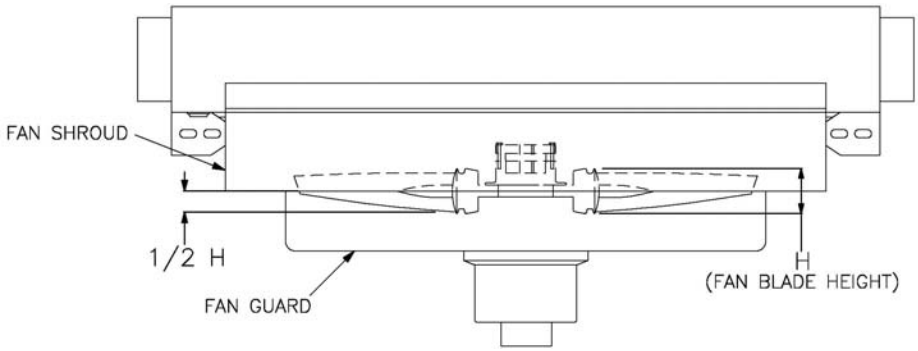


Figure 8.1 – Fan Blade Assembly

8.5.3. ***Internal Cleaning:*** Once a year disconnect piping and circulate a degreasing agent through the unit to remove sludge from the internal tubes. This will return the unit to full operating capacity. A thorough cleaning of the entire system in the same manner is desirable to avoid carry-over from unclean piping. The pre-filter (#1), after-filter (#2), air motor (#5), air filter (#14), air regulator (#14), and air lubricator (#15) should all be removed and serviced following this cleaning operation.

8.5.4. ***Air Motor Air Supply Filter/Regulator:*** Once a day completely open the filter/regulator petcock drain to purge moisture and debris. The aftercooler fan speed can be controlled by changing the supply air pressure. Confirm that the air motor pressure does not exceed the specified maximum pressure (see Section 11.0, Table 2).

8.5.5. ***Air Motor Lubricator:*** Once a day fill the air lubricator reservoir (#15) with oil. The air motor manufacturer recommends a detergent SAE #10 automotive engine oil or GAST AD220 oil; however, SAE 10W-30 may be substituted. Adjust the oil-fog lubricator (#15) to the proper flow rate (see note below). The lubricator flow rate is adjusted based upon the air cfm flow rate required for the air motor. Refer to Section 11.0, Table 2 for air flow and drip rate requirement. Turn the socket head screw on top of the lubricator to adjust flow (clockwise to increase flow, counterclockwise to decrease flow).

⚠ CAUTION

Failure to properly lubricate the air motor as detailed above will result in costly motor failure.

Note: Two types of lubricators have been used in Schmidt® AirPrep Systems. Current production units are equipped with “oil-fog” lubricators (Style MP). Systems manufactured prior to September 2016 are equipped with “micro-fog” lubricators (Style L74M). Micro-fog lubricator drip rates are significantly higher because only a fraction of the drip total enters the air stream.

Filter/regulator and lubricator arrangement may vary from what is shown in the drawings included in this manual. Verify the type lubricator then adjust the drip rate accordingly.

8.5.6. ***Air Motor*****:** If the motor is sluggish or inefficient, disconnect the air line and muffler (#17), and then add several teaspoons of solvent directly into the motor. Rotate the motor shaft by hand in both directions for a few minutes. Reconnect the air line and slowly apply air pressure until there is no trace of solvent in the exhaust air. Re-lubricate the air motor with a squirt of oil in the chamber. Reassemble and return to service.

8.5.7 ***Air Motor Exhaust Muffler:*** Inspect the air motor exhaust muffler monthly. Dirt and grime accumulation on the exhaust element can restrict air flow and cause a reduction of power output from the air motor. Remove the muffler and clean with a degreasing agent.

8.5.8. ***Electric Motor***

Keep outside surface free of dirt and grease so motor will cool properly. Make sure cooling air over motor is not obstructed. The motors are normally furnished with sealed bearing that do not require maintenance. However, if the motor is equipped with an Alemite fitting, clean the tip, and apply grease gun. Use 1 to 2 full strokes on motors in NEMA 215 frame and smaller, 2 to 3 strokes on NEMA 254 through 365 frame and 3 to 4 strokes on NEMA 404 frames and larger. On motors having drain plugs, remove grease drain plug and operate motor for 20 minutes before replacing drain plug. Refer to motor nameplate. Motors furnished with ball bearings require lubrication every 6 months.

Electric Shock Hazard. Disconnect electric power to motor before performing any routine maintenance.

Electric Shock Hazard. Power connections to AirPrep System with electric motors expose operators to high electrical voltages. Contact with high electrical voltages can result in serious injury or death. Only qualified personnel should install or perform maintenance on the electrical system.

8.6 ***Separator Tank Deliquescent/Desiccant (ADS Systems Only)***

Check the deliquescent/desiccant level monthly. At each filling of deliquescent/desiccant check inside the separator tank for looseness of the deliquescent/desiccant tablets (#9). Extended exposure to moisture will fuse the tablets together and can possibly block or restrict air flow. Break apart fused tablets with a long rod or similar device. Fill with tablets to the top of the separator tank (#12). Note: Minimum tablet size is 5/8” x 3/4". Smaller sizes will reduce air flow through marble bed (#10).

8.7. ***Blast and Air Hoses, Piping, Pipe Fittings, and Wires:*** All air hoses, blast hoses, control hoses, pipe, pipe fittings, and wires are wear items on any abrasive blaster. These components should be inspected daily for air leaks, cracks, holes, dry rotting, cuts, or any other damage. Repair or replace any components that show any signs of wear or damage.

Damaged hoses, piping, pipe fittings or wires can cause system malfunctions and can result in serious injury or death to operating personnel.

Worn hose assemblies can rupture during operation and the resulting pressurized air stream can cause serious personal injury.

Static electric shock hazard. To minimize chance of static electrical shock to operating personnel only use anti-static blast hose, properly electrically bond the blast nozzle, blast hose couplings, and the equipment, and properly install an earth ground to the abrasive blaster. See Section 5.14.

8.8. ***Blast and Air Hose Couplings:*** All air hose couplings have pin holes that align when connected. To protect against accidental hose disconnections safety pins must be installed through these holes. Each hose connection must also include a hose whip check that will hold the hose if there is an accidental disconnection. Connect one loop to each side of the connection and stretch out as shown in Figure 8.2 below. Check hose connections daily and replace missing or damaged pins and whip checks.

⚠ WARNING

Failure to install safety pins and whip checks on all hose couplings could result in serious injury or death.

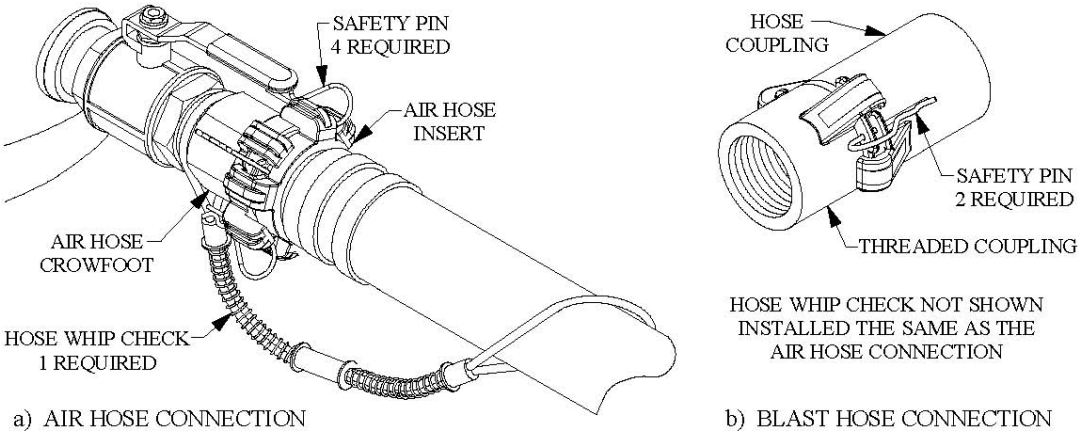


Figure 8.2 – Hose Connection Disconnect Protection

8.9 ***Blast and Air Hose Gaskets:*** All air hose, blast hose, and threaded couplings have gaskets that seal the connection. To reduce loss of air pressure and/or premature abrasive wear replace these gaskets when leaks are found. Inspect the couplings daily for leaks and wear. Replace gaskets when visible wear or leaks are found. To ensure proper coupling connection always use fittings that are the same brand. See the drawings and part lists in Section 9.0.

8.10. ***Personal Protective Equipment:*** Check daily to verify that all personal protective equipment is available for each blast operator. Check daily to verify that all personal protective equipment is in good operating condition. Consult the operating and maintenance instructions provided by the manufacturer of each PPE item. See Section 3.10 and reference OSHA 29 CFR 1910 Subpart I.

⚠ WARNING

Failure to use personal protective equipment could result in serious injury or death.

8.11. ***Warning Decals:*** Check monthly to verify that all the warning decals are in position and legible. See Section 0.0 for full descriptions and locations.

⚠ DANGER

Failure to maintain warning decals risks the possibility of not alerting the AirPrep System operator to potential dangers which can result in serious injury or death. See Section 0.0.

8.12. ***Handway Assembly (ADS Systems only, except portable models):*** Refer to Section 6.3 for installation and inspection procedures.

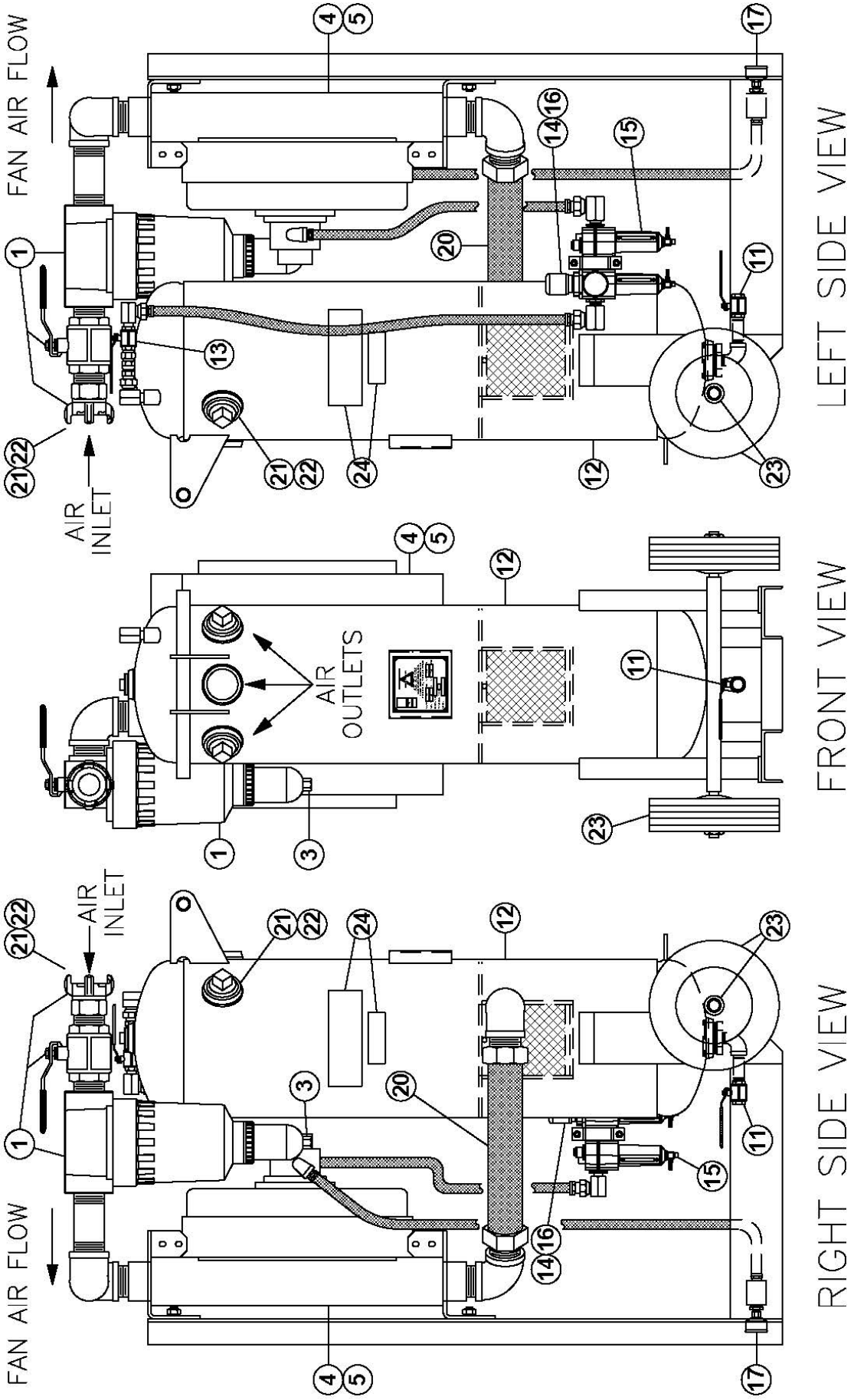
8.13. **Maintenance Schedule Quick Reference Chart**

AIRPREP AIR DRYER SYSTEM MAINTENANCE SCHEDULE					
ITEM	**MAINTENANCE REQUIRED**	**DAILY**	**WEEKLY**	**MONTHLY**	**QUARTERLY**
Blaster Vessel	Hydrostatic Test See Section 8.1	As required by state law and/or local authorities			
Blaster Vessel	Check for exterior damage (corrosion, dents, bulges). See Section 8.2		X		
Blaster Vessel	Check for interior damage (corrosion / pitting). See Section 8.3				X
Moisture Accumulation	Open all drain ball valves to purge moisture and debris. See Section 8.4	X			
Aftercooler	Clean & inspect radiator, fan, shroud, guard, & motor See Section 8.5				X
Air Motor	Fill air motor lubricator. See Section 8.5.4.	X			
Deliquescent/ Desiccant (ADS Systems only)	Check level of deliquescent/ desiccant inside separator tank See Section 8.6				X
Control Hoses & Wires	Check control hoses & wiring for bare spots, fraying, or cracks See Section 8.7	X			
Air Hose Couplings	Check for safety pins and whip checks See Section 8.8	X			
Hose Coupling Gaskets	Check for leaky air and blast hose coupling gaskets See Section 8.9	X			
Personal Protective Equipment	Check condition of all personal protective equipment See Sections 3.10 and 8.10	X			
Warning Decals	Check the condition of warning decals. See Sections 0.0 and 8.11			X	
Handway Assembly	Check gasket for wear, cracking, or dry rotting. Check sealing surfaces for damage. See Sections 6.3 and 8.12.			X	

9.0 Drawings and Parts Lists

The following pages contain drawings representing typical blast control systems and components. Determine the type of control system the abrasive blast system is equipped with (pneumatic or electric controls) then reference the appropriate drawing and parts list to determine the required parts. To ensure the proper operation of the AirPrep System only use Schmidt® original factory replacement parts furnished by an authorized Schmidt distributor. See Section 1.39 and Section 12.2.12.

9.1(a) ACS 250P & 400P Portable Aftercooler System (Air Motor)



9.1(b) Parts List ACS 250P & 400P Portable Aftercooler System (Air Motor)

ACS 250P Parts List (Air Motor) (Part Number: 1300-021P)

Item	Part Number	Description
1	2302-208-50	Air Filter, 1-1/2"
	2302-207-99	Air Filter Seal Kit, 1-1/2"
	2401-508	Ball Valve, 1-1/2" Full Port
	4211-108	Crowfoot, 4-Lug 1-1/2"
3	-	Manual Drain
4	1300-020-16	Aftercooler Radiator w/o motor (includes fan) (250)
5	1300-040-03	Air Motor (250/400)
	1300-040-99	Air Motor Replacement Parts Kit (250/400)
	1300-020-12	Fan Assembly (250)
	1300-020-13	Fan Guard (250)
	1300-020-15	Fan Shroud (250)
11	2401-504	Ball Valve, 1/2" Full Port
12	1300-020-01P	Aftercooler Vessel, 250/400P
13	2401-504	Ball Valve, 1/2" Full Port
14	2312-204-40	Air Filter/Regulator, 1/2" (MP165)
	2312-204-99	Repair Kit, Filter/Regulator (MP165)
	*2309-204-40	Air Filter/Regulator, 1/2" (B73G)
	*2309-204-99	Repair Kit, Filter/Regulator (B73G)
15	2311-204	Air Lubricator, 1/2" (MP167)
	2311-204-99	Repair Kit, Air Lubricator (MP167)
	*2304-204	Air Lubricator, 1/2" (L73M)
	*2304-204-99	Repair Kit, Air Lubricator (L73M)
16	2010-010-01	Pressure Gauge, 0-160 PSI
17	2011-002-01	Muffler, 1/4"
20	4102-108-04A	Hose Assembly, 1-1/2" x 4' (cut length to fit)
21	7119-002	Safety pin, air/blast hose coupling
22	8710-98778	Hose whip check (safety cable)
23	7046-003	Wheel & Tire, 3 bag
	7040-009XP	Axle, 3/4" x 23-1/2"
	7019-519	Nylock Nut, 3/4"
24	7031-999-11	Decal Kit, ACS 250

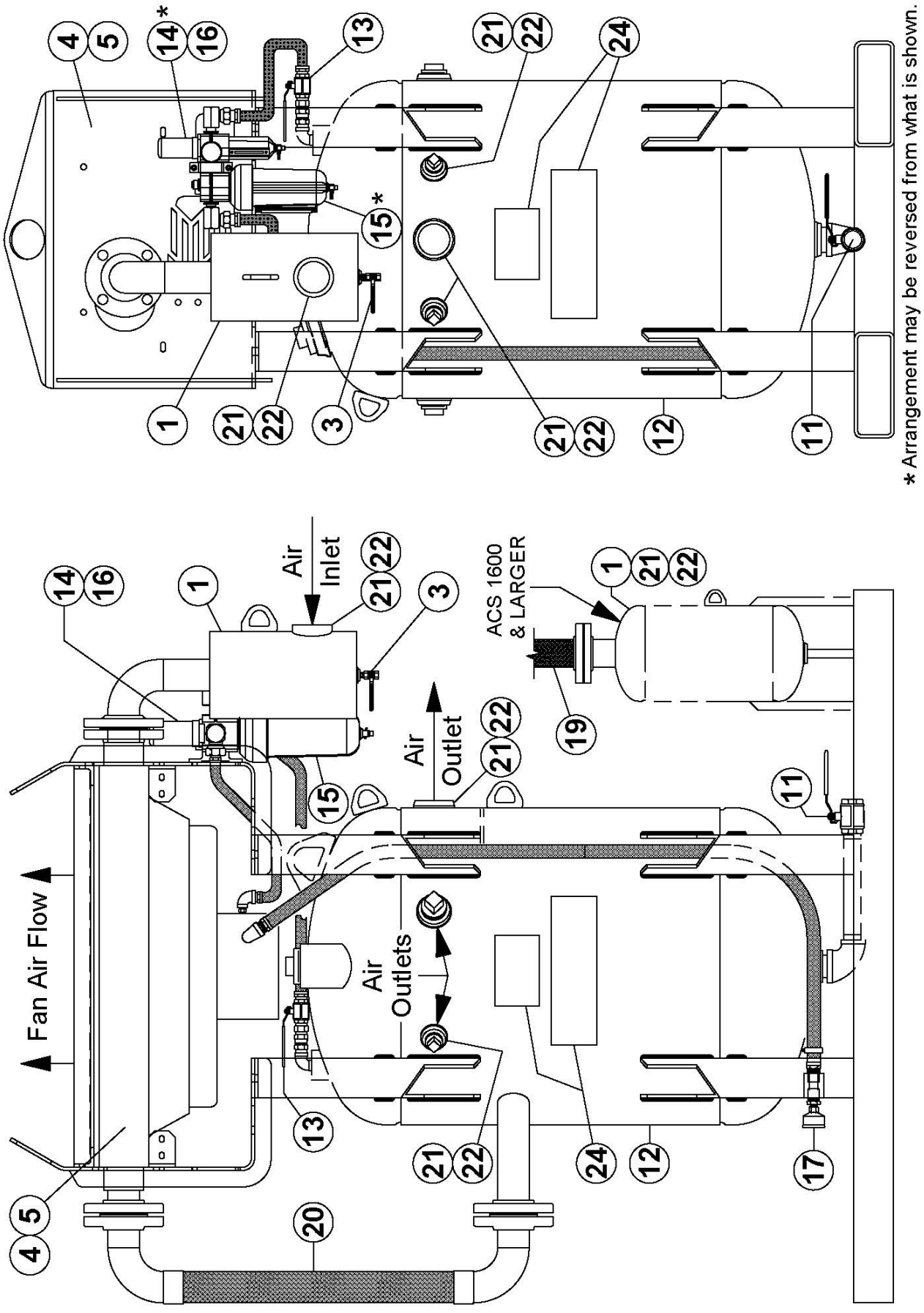
*Systems Manufactured Prior To September 2016

ACS 400P Parts List (Air Motor) (Part Number: 1300-041P)

Item	Part Number	Description
1	2302-209-40	Air Filter, 2"
	2302-209-99	Air Filter Seal Kit, 2"
	2401-509	Ball Valve, 2" Full Port
	4211-109	Crowfoot, 4-Lug 2"
3	-	Manual Drain
4	1300-040-16	Aftercooler Radiator w/o motor (includes fan) (400)
5	1300-040-03	Air Motor (250/400)
	1300-040-99	Air Motor Replacement Parts Kit (250/400)
	1300-040-12	Fan Assembly (400)
	1300-040-13	Fan Guard (400)
	1300-040-15	Fan Shroud (400)
11	2401-504	Ball Valve, 1/2" Full Port
12	1300-020-01P	Aftercooler Vessel, 250/400P
13	2401-504	Ball Valve, 1/2" Full Port
14	2312-204-40	Air Filter/Regulator, 1/2" (MP165)
	2312-204-99	Repair Kit, Filter/Regulator (MP165)
	*2309-204-40	Air Filter/Regulator, 1/2" (B73G)
	*2309-204-99	Repair Kit, Filter/Regulator (B73G)
15	2311-204	Air Lubricator, 1/2" (MP167)
	2311-204-99	Repair Kit, Air Lubricator (MP167)
	*2304-204	Air Lubricator, 1/2" (L73M)
	*2304-204-99	Repair Kit, Air Lubricator (L73M)
16	2010-010-01	Pressure Gauge, 0-160 PSI
17	2011-002-01	Muffler, 1/4"
20	4102-109-04A	Hose Assembly, 2" x 4' (cut length to fit)
21	7119-002	Safety pin, air/blast hose coupling
22	8710-98778	Hose whip check (safety cable)
23	7046-003	Wheel & Tire, 3 bag
	7040-009XP	Axle, 3/4" x 23-1/2"
	7019-519	Nylock Nut, 3/4"
24	7031-999-12	Decal Kit, ACS 400

*Systems Manufactured Prior To September 2016

9.2(a) ACS 400-2500 Aftercooler System (Air Motor)



9.2(b) Parts List ACS 400-2500 Aftercooler System (Air Motor)

ACS 400/750/950 Parts List (Air Motor)

Item	Part Number	Description
1	1200-999-38P	Moisture Trap, 400/750 Inlet
	1200-999-39P	Moisture Trap, 950 Inlet
3	2401-502	Ball Valve, 1/4" Full Port
4	1300-040-16	Aftercooler Radiator w/o motor (includes fan) (400)
	1300-070-16	Aftercooler Radiator w/o motor (includes fan) (750)
	1300-090-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (950)
5	1300-040-03	Air Motor (400/750)
	1300-090-03	Air Motor (950)
	1300-040-99	Air Motor Replacement Parts Kit (400/750)
	1300-090-99	Air Motor Replacement Parts Kit (950)
	1300-040-12	Fan Assembly (400) (No Bushing Required)
	1300-070-12	Fan Assembly (750) (No Bushing Required)
	1300-090-12	Fan Assembly (950) (Includes Bushing)
	1300-040-13	Fan Guard (450)
	1300-070-13	Fan Guard (750)
	1300-090-13	Fan Guard (950)
	1300-090-14	Fan Mount Bushing (950)
	1300-040-15	Fan Shroud (400)
	1300-070-15	Fan Shroud (750)
	1300-090-15	Fan Shroud (950)
11	2401-506	Ball Valve, 1" Full Port
12	1300-040-01	Aftercooler Vessel (400)
	1300-070-01	Aftercooler Vessel (750)
	1300-090-01	Aftercooler Vessel (950)
13	2401-504	Ball Valve, 1/2" Full Port
14	2312-204-40	Air Filter/Regulator, 1/2" (MP165) (400)
	2312-204-99	Replacment Parts Kit, 1/2" Filter/Regulator (MP15) (400)
	2312-704-40	Air Filter/Regulator, 1/2" (MP160) (750/950)
	2312-704-99	Replacment Parts Kit, 1/2" Filter/Regulator (MP160) (750/950)
	*2309-204-40	Air Filter/Regulator, 1/2" (B73G) (400)
	*2309-204-99	Replacment Parts Kit, 1/2" Filter/Regulator (B73G) (400)
	*2309-704-40	Air Filter/Regulator, 1/2" (B74G) (750/900)
	*2309-704-99	Replacment Parts Kit, 1/2" Filter/Regulator (B74G) (750/950)
15	2311-204	Air Lubricator, 1/2" (MP167) (400)
	2311-204-99	Repair Kit, Air Lubricator (MP167) (400)
	2311-704	Air Lubricator, 1/2" (MP125) (750/950)
	2311-704-99	Repair Kit, Air Lubricator (MP125) (750/950)
	*2304-204	Air Lubricator, 1/2" (L73M) (400)
	*2304-204-99	Repair Kit, Air Lubricator (L73M) (400)
	*2304-704	Air Lubricator, 1/2" (L74M) (750/950)
	*2304-704-99	Repair Kit, Air Lubricator (L74M) (750/950)
16	2010-010-01	Pressure Gauge, 0-160 PSI
17	2011-002-01	Muffler, 1/4" (400/750)
	2011-004-01	Muffler, 1/2" (950)
20	4112-109-30	Corrugated Hose, 3" x 30" (400/750)
	7003-009-01	Flange Gasket, 2"
	4112-111-39	Corrugated Hose, 3" X 39" (950)
	7003-011-01	Flange Gasket, 3"
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
24	7031-989-12	Decal Kit, ACS 400
	7031-989-13	Decal Kit, ACS 750
	7031-989-14	Decal Kit, ACS 950

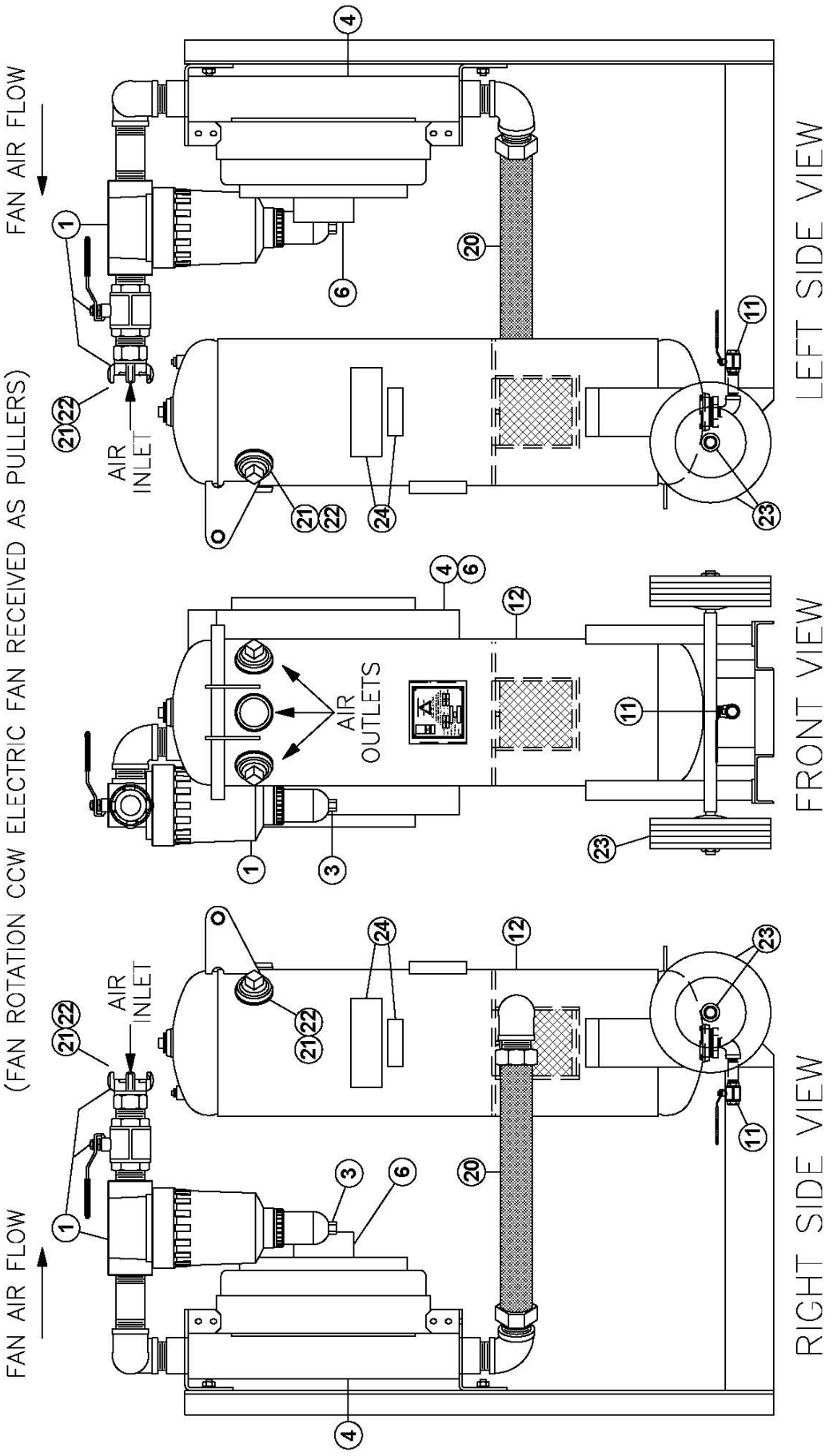
*Systems Manufactured Prior To September 2016

ACS 1200/1600/2000/2500 Parts List (Air Motor)

Item	Part Number	Description
1	1200-999-39P	Moisture Trap, 1200 Inlet
	1200-999-43P	Moisture Trap, 1600 Inlet
	1200-999-73P	Moisture Trap, 2000/2500 Inlet
3	2401-502	Ball Valve, 1/4" Full Port
4	1300-120-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (1200)
	1300-160-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (1600)
	1300-200-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (2000)
	1300-250-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (2500)
5	1300-120-03	Air Motor (1200)
	1300-160-03A	Air Motor (1600)
	1300-200-03	Air Motor (2000/2500)
	1300-120-99	Air Motor Replacement Parts Kit (1200)
	1300-160-99	Air Motor Replacement Parts Kit (1600)
	1300-200-99	Air Motor Replacement Parts Kit (2000/2500)
	1300-120-12	Fan Assembly (1200) (Includes Bushing)
	1300-160-12	Fan Assembly (1600) (Includes Bushing)
	1300-200-12	Fan Assembly (2000/2500) (Includes Bushing)
	1300-120-13	Fan Guard (1200)
	1300-160-13	Fan Guard (1600)
	1300-200-13	Fan Guard (2000/2500)
	1300-120-14	Fan Mount Bushing (1200)
	1300-160-14	Fan Mount Bushing (1600)
	1300-200-14	Fan Mount Bushing (2000/2500)
	1300-120-15	Fan Shroud (1200)
	1300-160-15	Fan Shroud (1600)
	1300-200-15	Fan Shroud (2000/2500)
11	2401-506	Ball Valve, 1" Full Port
12	1300-120-01	Aftercooler Vessel (1200)
	1300-160-01	Aftercooler Vessel (1600)
	1300-200-01	Aftercooler Vessel (2000)
	1300-250-01	Aftercooler Vessel (2500)
13	2401-504	Ball Valve, 1/2" Full Port
	2401-507	Ball Valve, 1 1/4" Full Port (2500)
14	2312-704-40	Air Filter/Regulator, 1/2" (MP160)
	2312-704-99	Repair Kit, Filter/Regulator (MP160)
	*2309-704-40	Air Filter/Regulator, 1/2" (B74G)
	*2309-704-99	Repair Kit, Filter/Regulator (B74G)
15	2311-704	Air Lubricator, 1/2" (MP125)
	2311-704-99	Repair Kit, Air Lubricator (MP125)
	*2304-704	Air Lubricator, 1/2" (L74M)
	*2304-704-99	Repair Kit, Air Lubricator (L74M)
16	2010-009-01	Pressure Gauge, 0-160 PSI
17	2011-007-01	Muffler, 1/2"
19	4112-211-38	Corrugated Hose, 3" x 38" (1600)
	7003-011-01	Flange Gasket, 3"
20	4112-111-39	Corrugated Hose, 3" (1200/1600)
	7003-011-01	Flange Gasket, 3"
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
24	7031-989-15	Decal Kit, ACS 1200
	7031-989-16	Decal Kit, ACS 1600
	7031-989-17	Decal Kit, ACS 2000
	7031-989-18	Decal Kit, ACS 2500

*Systems Manufactured Prior To September 2016

9.3(a) ACS 250P & 400P Portable Aftercooler System (Electric Motor)



9.3(b) Parts List ACS 250P & 400P Portable Aftercooler System (Electric Motor)

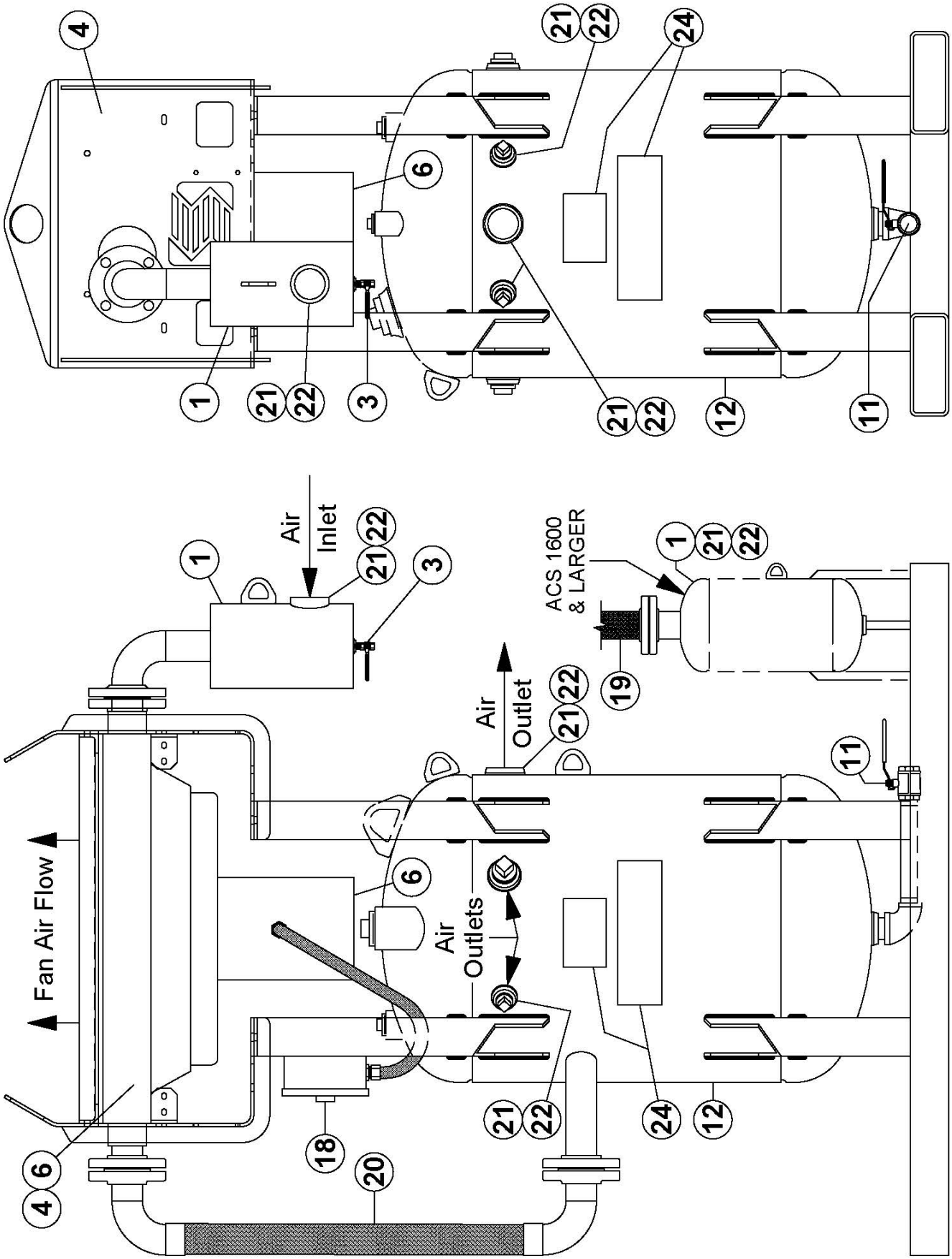
ACS 250P Parts List (Electric Motor) (Part Number: 1300-027P)

Item	Part Number	Description
1	2302-208-50	Air Filter, 1-1/2"
	2302-207-99	Air Filter Seal Kit, 1-1/2"
	2401-508	Air Inlet Ball Valve, 1-1/2" Full Port
	4211-108	Crowfoot, 4-Lug 1-1/2"
3	-	Manual Drain
4	1300-020-33	Aftercooler Radiator (Type E), w/o motor (250)
6	1300-020-34	Motor/Fan Assembly, 12Vdc (250)
11	2401-504	Ball Valve, 1/2" Full Port
12	1300-020-01P	Aftercooler Vessel, 250/400P
20	4102-108-04A	Hose Assembly, 1-1/2" x 4' (cut length to fit)
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
23	7046-003	Wheel & Tire, 3 bag
	7040-009XP	Axle, 3/4" x 23-1/2"
	7019-519	Nylock Nut, 3/4"
24	7031-999-11	Decal Kit, ACS 250

ACS 400P Parts List (Electric Motor) (Part Number: 1300-047P)

Item	Part Number	Description
1	2302-209-40	Air Filter, 2"
	2302-209-99	Air Filter Seal Kit, 2"
	2401-509	Air Inlet Ball Valve, 2" Full Port
	4211-109	Crowfoot, 4-Lug 2"
3	-	Manual Drain
4	1300-040-16	Aftercooler Radiator, w/o motor (400)
6	1300-040-33	Motor/Fan Assembly,12Vdc (400)
11	2401-504	Ball Valve, 1/2" Full Port
12	1300-020-01P	Aftercooler Vessel, 250/400P
20	4102-109-04A	Hose Assembly, 2" x 4' (cut length to fit)
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
23	7046-003	Wheel & Tire, 3 bag
	7040-009XP	Axle, 3/4" x 23-1/2"
	7019-519	Nylock Nut, 3/4"
24	7031-999-12	Decal Kit, ACS 400

9.4(a) ACS 400-2500 Aftercooler System (Electric Motor)



9.4(b) ACS 400-2500 Aftercooler System (Electric Motor)

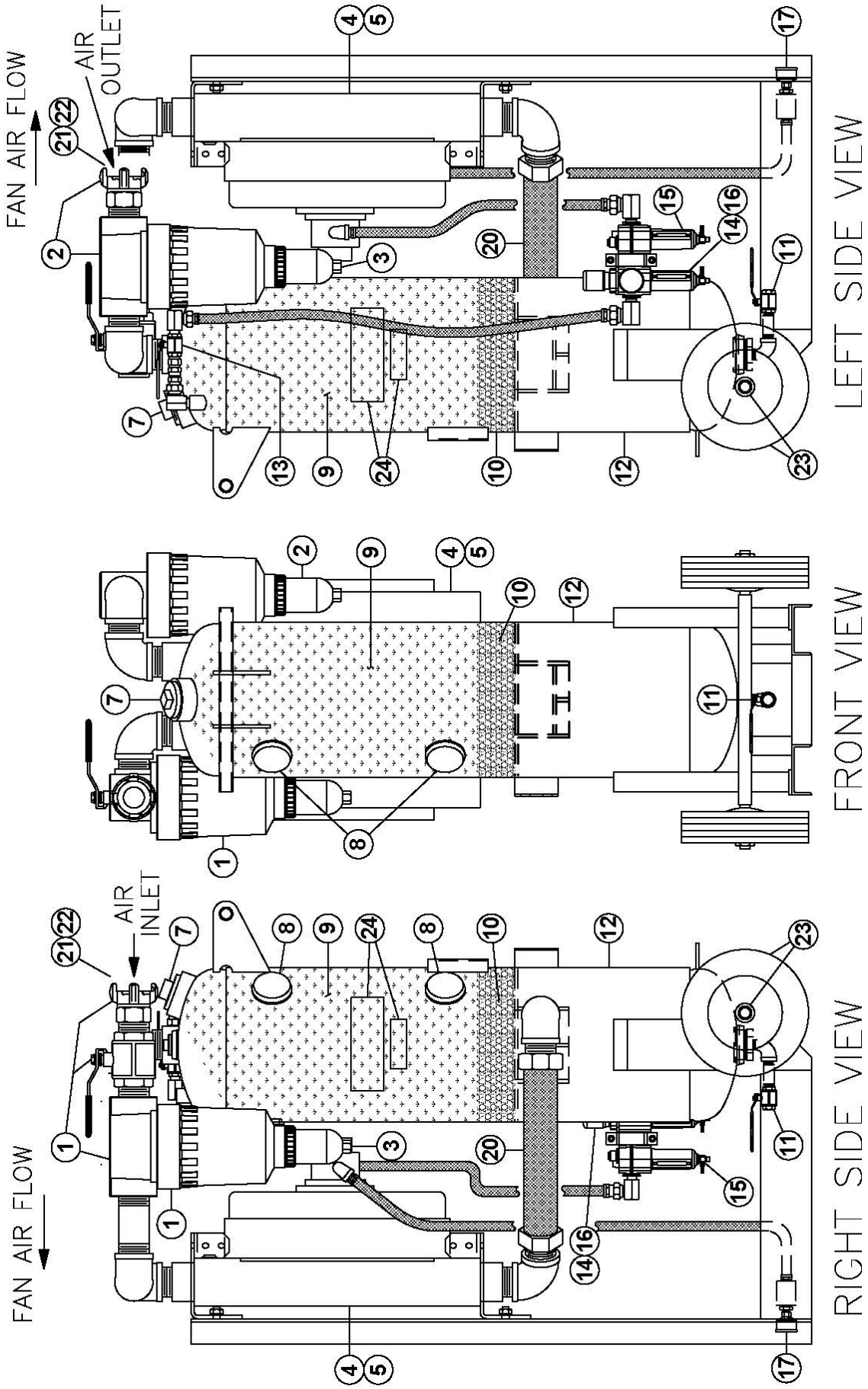
ACS 400/750/950 Parts List (Electric Motor)

Item	Part Number	Description
1	1200-999-38P	Moisture Trap, 400/750 Inlet
	1200-999-39P	Moisture Trap, 950 Inlet
3	2401-502	Ball Valve, 1/4" Full Port
4	1300-040-16	Aftercooler Radiator w/o motor (includes fan) (400)
	1300-070-30E	Aftercooler Radiator w/o motor (includes fan) (750)
	1300-090-30E	Aftercooler Radiator w/o motor (includes fan w/bushing) (950)
6	1300-040-09	Electric Motor, 1HP 115V/230V (400)
	1300-040-11	Electric Motor, 1HP 208-230V/460V (400)
	1300-070-09	Electric Motor, 1.5HP 115V/230V (750)
	1300-070-11	Electric Motor, 1.5HP 208-230V/460V (750)
	1300-090-09	Electric Motor, 1.5HP 115V/230V (950)
	1300-090-11	Electric Motor, 1.5HP 208-230V/460V (950)
	1300-040-12	Fan Assembly (400) (No Bushing Required)
	1300-070-12	Fan Assembly (750) (No Bushing Required)
	1300-090-12	Fan Assembly (950) (Includes Bushing)
	1300-040-13	Fan Guard (450)
	1300-070-13	Fan Guard (750)
	1300-090-13	Fan Guard (950)
	1300-090-14	Fan Mount Bushing (950)
	1300-040-15	Fan Shroud (400)
	1300-070-15	Fan Shroud (750)
	1300-090-15	Fan Shroud (950)
11	2401-506	Ball Valve, 1" Full Port
12	1300-040-01	Aftercooler Vessel (400)
	1300-070-01	Aftercooler Vessel (750)
	1300-090-01	Aftercooler Vessel (950)
18	7135-021	Motor Starter, 115-230 Volt (400/750/950)
	7135-008	Motor Starter, 208-460 Volt (400/750/950)
20	4112-109-36	Corrugated Hose, 2" x 36" (400/750)
	7003-009-01	Flange Gasket, 2"
	4112-111-68	Corrugated Hose, 3" X 68" (950)
	7003-011-01	Flange Gasket, 3"
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
24	7031-999-12	Decal Kit, ACS 400
	7031-999-13	Decal Kit, ACS 750
	7031-999-14	Decal Kit, ACS 950

ACS 1200/1600/2000/2500 Parts List (Electric Motor)

Item	Part Number	Description
1	1200-999-39P	Moisture Trap, 1200 Inlet
	1200-999-43P	Moisture Trap, 1600 Inlet
	1200-999-73P	Moisture Trap, 2000/2500 Inlet
3	2401-502	Ball Valve, 1/4" Full Port
4	1300-120-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (1200)
	1300-160-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (1600)
	1300-200-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (2000)
	1300-250-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (2500)
6	1300-120-09	Electric Motor, 5HP 230V (1200)
	1300-120-11	Electric Motor, 3HP 208-230V/460V (1200)
	1300-160-11	Electric Motor, 5HP 208-230V/460V (1600)
	1300-200-11	Electric Motor, 7.5HP 230V/460V (2000)
	1300-250-11	Electric Motor, 7.5HP 230V/460V (2500)
	1300-120-12	Fan Assembly (1200) (Includes Bushing)
	1300-160-12	Fan Assembly (1600) (Includes Bushing)
	1300-200-12	Fan Assembly (2000/2500) (Includes Bushing)
	1300-120-13	Fan Guard (1200)
	1300-160-13	Fan Guard (1600)
	1300-200-13	Fan Guard (2000/2500)
	1300-120-14	Fan Mount Bushing (1200)
	1300-160-14	Fan Mount Bushing (1600)
	1300-200-14	Fan Mount Bushing (2000/2500)
	1300-120-15	Fan Shroud (1200)
	1300-160-15	Fan Shroud (1600)
	1300-200-15	Fan Shroud (2000/2500)
11	2401-506	Ball Valve, 1" Full Port
12	1300-120-01	Aftercooler Vessel (1200)
	1300-160-01	Aftercooler Vessel (1600)
	1300-200-01	Aftercooler Vessel (2000)
	1300-250-01	Aftercooler Vessel (2500)
18	7135-059	Motor Starter, 208-460 Volt (1200/1600/2000/2500)
19	4112-211-52	Corrugated Hose, 3" x 52" (1200/1600)
	7003-011-01	Flange Gasket, 3"
20	4112-111-68	Corrugated Hose, 3" x 68" (1200/1600)
	7003-011-01	Flange Gasket, 3"
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
24	7031-999-15	Decal Kit, ACS 1200
	7031-999-16	Decal Kit, ACS 1600
	7031-999-17	Decal Kit, ACS 2000
	7031-999-18	Decal Kit, ACS 2500

9.5(a) ADS 250 & 400 Portable Air Dryer System (Air Motor)



ADS 250P Parts List (Air Motor) (Part Number: 1310-021P)

Item	Part Number	Description
1	2302-208-50	Air Filter, 1-1/2"
	2302-207-99	Air Filter Seal Kit, 1-1/2"
	2401-508	Ball Valve, 1-1/2" Full Port
	4211-108	Crowfoot, 4-Lug 1-1/2"
2	2302-208-50	Air Filter, 1-1/2"
	2302-207-99	Air Filter Seal Kit, 1-1/2"
	4211-108	Crowfoot, 4-Lug 1-1/2"
3	-	Manual Drain
4	1300-020-16	Aftercooler Radiator w/o motor (includes fan) (250)
5	1300-040-03	Air Motor (250/400)
	1300-040-99	Air Motor Replacement Parts Kit (250/400)
	1300-020-12	Fan Assembly (250)
	1300-020-13	Fan Guard (250)
	1300-020-15	Fan Shroud (250)
7	3014-012	Pipe Plug, 2-1/2"
8	7064-009	Sight Glass, 2"
9	1310-000-03	Deliquescent/Desiccant Tablets
10	1310-000-01	Air Dryer Bed Marbles
11	2401-504	Ball Valve, 1/2" Full Port
12	1310-020-01P	Air Dryer Vessel, 250/400P
13	2401-504	Ball Valve, 1/2" Full Port
14	2312-204-40	Air Filter/Regulator, 1/2" (MP165)
	2312-204-99	Repair Kit, Filter/Regulator (MP165)
	*2309-204-40	Air Filter/Regulator, 1/2" (B73G)
	*2309-204-99	Repair Kit, Filter/Regulator (B73G)
15	2311-204	Air Lubricator, 1/2" (MP167)
	2311-204-99	Repair Kit, Air Lubricator (MP167)
	*2304-204	Air Lubricator, 1/2" (L73M)
	*2304-204-99	Repair Kit, Air Lubricator (L73M)
16	2010-010-01	Pressure Gauge, 0-160 PSI
17	2011-002-01	Muffler, 1/4"
20	4102-108-04A	Hose Assembly, 1-1/2" x 4' (cut length to fit)
21	7119-002	Safety pin, air/blast hose coupling
22	8710-98778	Hose whip check (safety cable)
23	7046-003	Wheel & Tire, 3 bag
	7040-009XP	Axle, 3/4" x 23-1/2"
	7019-519	Nylock Nut, 3/4"
24	7031-999-19	Decal Kit, ADS 250

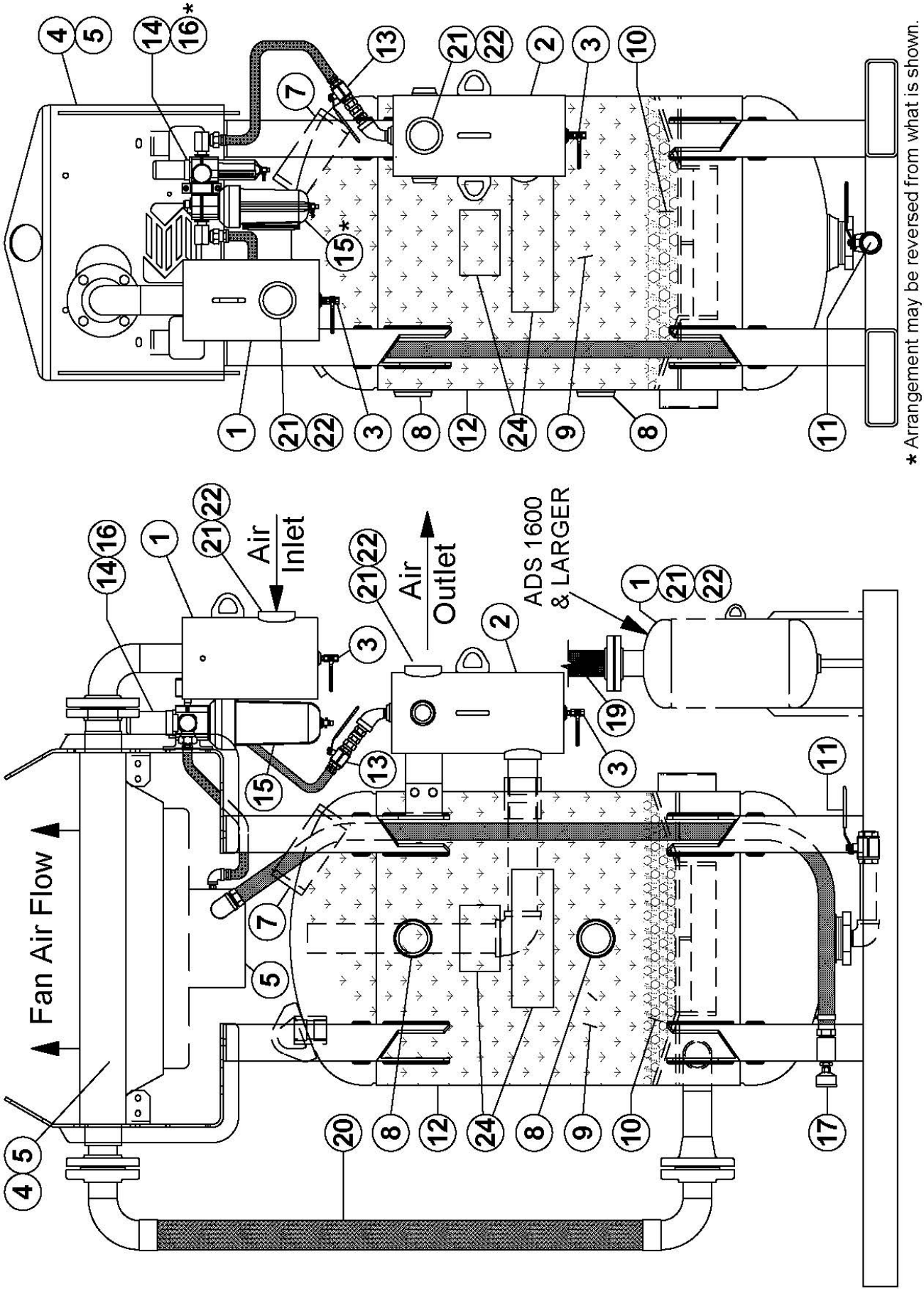
*Systems Manufactured Prior To September 2016

ADS 400P Parts List (Air Motor) (Part Number: 1310-041P)

Item	Part Number	Description
1	2302-209-40	Air Filter, 2"
	2302-209-99	Air Filter Seal Kit, 2"
	2401-509	Ball Valve, 2" Full Port
	4211-109	Crowfoot, 4-Lug 2"
2	2302-209-40	Air Filter, 2"
	2302-209-99	Air Filter Seal Kit, 2"
	4211-109	Crowfoot, 4-Lug 2"
3	-	Manual Drain
4	1300-040-16	Aftercooler Radiator w/o motor (includes fan) (400)
5	1300-040-03	Air Motor (250/400)
	1300-040-99	Air Motor Replacement Parts Kit (250/400)
	1300-040-12	Fan Assembly (400)
	1300-040-13	Fan Guard (400)
	1300-040-15	Fan Shroud (400)
7	3014-012	Pipe Plug, 2-1/2"
8	7064-009	Sight Glass, 2"
9	1310-000-03	Deliquescent/Desiccant Tablets
10	1310-000-01	Air Dryer Bed Marbles
11	2401-504	Ball Valve, 1/2" Full Port
12	1310-020-01P	Air Dryer Vessel, 250/400P
13	2401-504	Ball Valve, 1/2" Full Port
14	2312-204-40	Air Filter/Regulator, 1/2" (MP165)
	2312-204-99	Repair Kit, Filter/Regulator (MP165)
	*2309-204-40	Air Filter/Regulator, 1/2" (B73G)
	*2309-204-99	Repair Kit, Filter/Regulator (B73G)
15	2311-204	Air Lubricator, 1/2" (MP167)
	2311-204-99	Repair Kit, Air Lubricator (MP167)
	*2304-204	Air Lubricator, 1/2" (L73M)
	*2304-204-99	Repair Kit, Air Lubricator (L73M)
16	2010-010-01	Pressure Gauge, 0-160 PSI
17	2011-002-01	Muffler, 1/4"
20	4102-109-04A	Hose Assembly, 2" x 4' (cut length to fit)
21	7119-002	Safety pin, air/blast hose coupling
22	8710-98778	Hose whip check (safety cable)
23	7046-003	Wheel & Tire, 3 bag
	7040-009XP	Axle, 3/4" x 23-1/2"
	7019-519	Nylock Nut, 3/4"
24	7031-999-20	Decal Kit, ADS 400

*Systems Manufactured Prior To September 2016

9.6(a) ADS 400-2500 Air Dryer System (Air Motor)



9.6(b) Parts List ADS 400-2500 Air Dryer System (Air Motor)

ADS 400/750/950 Parts List (Air Motor)

Item	Part Number	Description
1	1200-999-38P	Moisture Trap, 400/750 Inlet
	1200-999-39P	Moisture Trap, 950 Inlet
2	1200-999-40P	Moisture Trap, 400/750 Outlet
	1200-999-45P	Moisture Trap, 950 Outlet
3	2401-502	Ball Valve, 1/4" Full Port
4	1300-040-16	Aftercooler Radiator w/o motor (includes fan) (400)
	1300-070-16	Aftercooler Radiator w/o motor (includes fan) (750)
	1300-090-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (950)
5	1300-040-03	Air Motor (400/750)
	1300-090-03	Air Motor (950)
	1300-040-99	Air Motor Replacement Parts Kit (400/750)
	1300-090-99	Air Motor Replacement Parts Kit (950)
	1300-040-12	Fan Assembly (400) (No Bushing Required)
	1300-070-12	Fan Assembly (750) (No Bushing Required)
	1300-090-12	Fan Assembly (950) (Includes Bushing)
	1300-040-13	Fan Guard (450)
	1300-070-13	Fan Guard (750)
	1300-090-13	Fan Guard (950)
	1300-090-14	Fan Mount Bushing (950)
	1300-040-15	Fan Shroud (400)
	1300-070-15	Fan Shroud (750)
	1300-090-15	Fan Shroud (950)
7	7000-001-11	Handwey Crab Assembly
	7000-001-18	Handwey Gasket, 6" x 8" Surefit™
8	7064-009	Sight Glass, 2"
9	1310-000-03	Deliquescent/Desiccant Tablets
10	1310-000-01	Air Dryer Bed Marbles
11	2401-506	Ball Valve, 1" Full Port
12	1310-040-01	Air Dryer Vessel (400)
	1310-070-01	Air Dryer Vessel (750)
	1310-090-01	Air Dryer Vessel (950)
13	2401-504	Ball Valve, 1/2" Full Port
14	2312-204-40	Air Filter/Regulator, 1/2" (MP165) (400)
	2312-204-99	Replacment Parts Kit, 1/2" Filter/Regulator (MP15) (400)
	2312-704-40	Air Filter/Regulator, 1/2" (MP160) (750/950)
	2312-704-99	Replacment Parts Kit, 1/2" Filter/Regulator (MP160) (750/950)
	*2309-204-40	Air Filter/Regulator, 1/2" (B73G) (400)
	*2309-204-99	Replacment Parts Kit, 1/2" Filter/Regulator (B73G) (400)
	*2309-704-40	Air Filter/Regulator, 1/2" (B74G) (750/900)
	*2309-704-99	Replacment Parts Kit, 1/2" Filter/Regulator (B74G) (750/950)
15	2311-204	Air Lubricator, 1/2" (MP167) (400)
	2311-204-99	Repair Kit, Air Lubricator (MP167) (400)
	2311-704	Air Lubricator, 1/2" (MP125) (750/950)
	2311-704-99	Repair Kit, Air Lubricator (MP125) (750/950)
	*2304-204	Air Lubricator, 1/2" (L73M) (400)
	*2304-204-99	Repair Kit, Air Lubricator (L73M) (400)
	*2304-704	Air Lubricator, 1/2" (L74M) (750/950)
	*2304-704-99	Repair Kit, Air Lubricator (L74M) (750/950)
16	2010-010-01	Pressure Gauge, 0-160 PSI
17	2011-002-01	Muffler, 1/4" (400/750)
	2011-004-01	Muffler, 1/2" (950)
20	4112-109-30	Corrugated Hose, 3" x 30" (400/750)
	7003-009-01	Flange Gasket, 2"
	4112-111-39	Corrugated Hose, 3" X 39" (950)
	7003-011-01	Flange Gasket, 3"
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
24	7031-999-20	Decal Kit, ADS 400
	7031-999-21	Decal Kit, ADS 750
	7031-999-22	Decal Kit, ADS 950

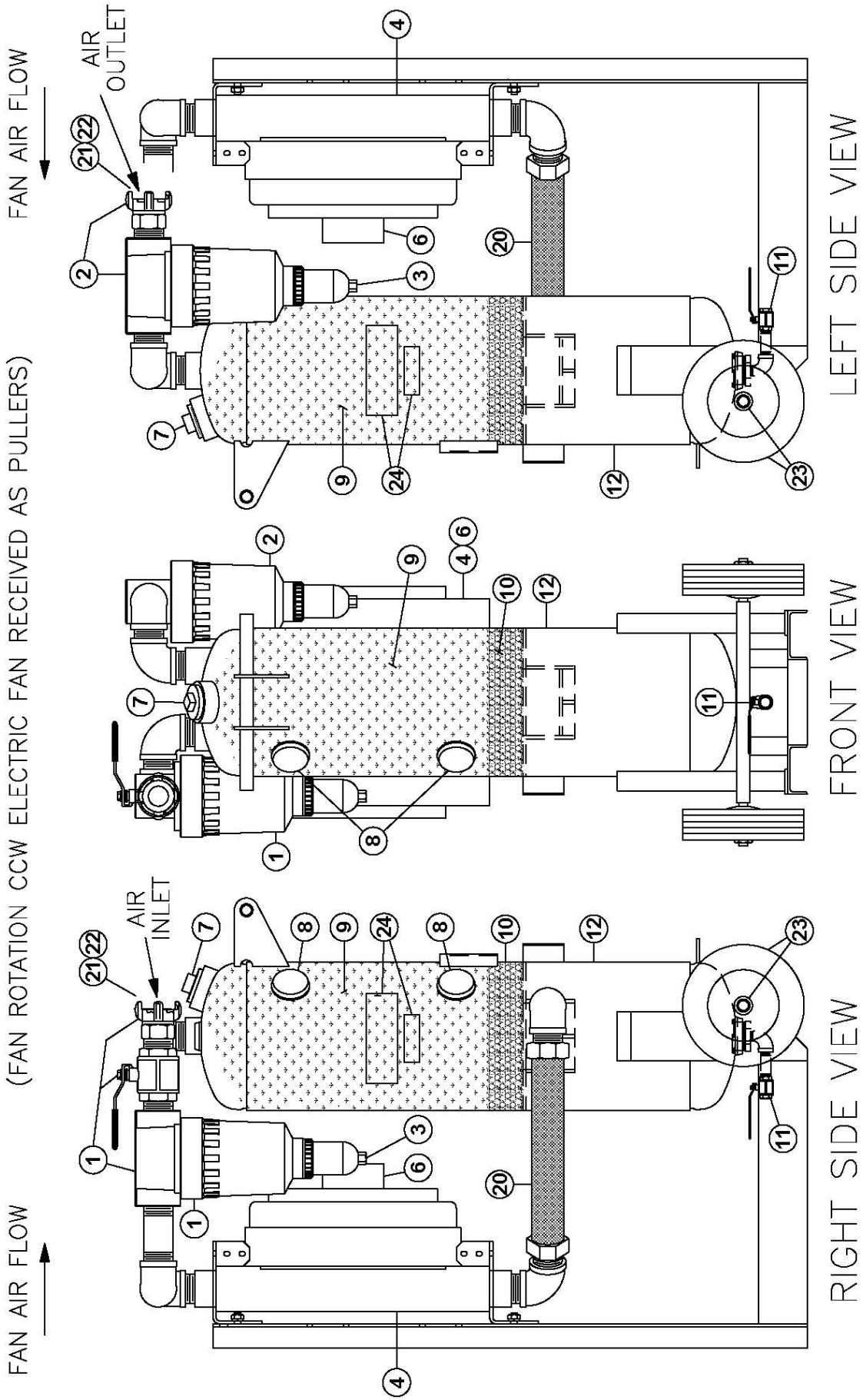
*Systems Manufactured Prior To September 2016

ADS 1200/1600/2000/2500 Parts List (Air Motor)

Item	Part Number	Description
1	1200-999-39P	Moisture Trap, 1200 Inlet
	1200-999-43P	Moisture Trap, 1600 Inlet
	1200-999-73P	Moisture Trap, 2000/2500 Inlet
2	1200-999-59P	Moisture Trap, 1200 Outlet
	1200-999-42P	Moisture Trap, 1600 Outlet
	1200-999-74P	Moisture Trap, 2000/2500 Outlet
3	2401-502	Ball Valve, 1/4" Full Port
4	1300-120-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (1200)
	1300-160-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (1600)
	1300-200-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (2000)
	1300-250-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (2500)
5	1300-120-03	Air Motor (1200)
	1300-160-03A	Air Motor (1600)
	1300-200-03	Air Motor (2000/2500)
	1300-120-99	Air Motor Replacement Parts Kit (1200)
	1300-160-99	Air Motor Replacement Parts Kit (1600)
	1300-200-99	Air Motor Replacement Parts Kit (2000/2500)
	1300-120-12	Fan Assembly (1200) (Includes Bushing)
	1300-160-12	Fan Assembly (1600) (Includes Bushing)
	1300-200-12	Fan Assembly (2000/2500) (Includes Bushing)
	1300-120-13	Fan Guard (1200)
	1300-160-13	Fan Guard (1600)
	1300-200-13	Fan Guard (2000/2500)
	1300-120-14	Fan Mount Bushing (1200)
	1300-160-14	Fan Mount Bushing (1600)
	1300-200-14	Fan Mount Bushing (2000/2500)
	1300-120-15	Fan Shroud (1200)
	1300-160-15	Fan Shroud (1600)
	1300-200-15	Fan Shroud (2000/2500)
7	7000-001-11	Handwey Crab Assembly
	7000-001-18	Handwey Gasket, 6" x 8" Surefit™
8	7064-009	Sight Glass, 2"
9	1310-000-03	Deliquescent/Desiccant Tablets
10	1310-000-01	Air Dryer Bed Marbles
11	2401-506	Ball Valve, 1" Full Port
12	1310-120-01	Air Dryer Vessel (1200)
	1310-160-01	Air Dryer Vessel (1600)
	1310-200-01	Air Dryer Vessel (2000)
	1310-250-01	Air Dryer Vessel (2500)
13	2401-504	Ball Valve, 1/2" Full Port
	2401-507	Ball Valve, 1 1/4" Full Port (2500)
14	2312-704-40	Air Filter/Regulator, 1/2" (MP160)
	2312-704-99	Repair Kit, Filter/Regulator (MP160)
	*2309-704-40	Air Filter/Regulator, 1/2" (B74G)
	*2309-704-99	Repair Kit, Filter/Regulator (B74G)
15	2311-704	Air Lubricator, 1/2" (MP125)
	2311-704-99	Repair Kit, Air Lubricator (MP125)
	*2304-704	Air Lubricator, 1/2" (L74M)
	*2304-704-99	Repair Kit, Air Lubricator (L74M)
16	2010-009-01	Pressure Gauge, 0-160 PSI
17	2011-007-01	Muffler, 1/2"
19	4112-211-38	Corrugated Hose, 3" x 38" (1600)
	7003-011-01	Flange Gasket, 3"
20	4112-111-39	Corrugated Hose, 3" (1200/1600)
	7003-011-01	Flange Gasket, 3"
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
24	7031-999-23	Decal Kit, ADS 1200
	7031-999-24	Decal Kit, ADS 1600
	7031-999-25	Decal Kit, ADS 2000
	7031-999-26	Decal Kit, ADS 2500

*Systems Manufactured Prior To September 2016

9.7(a) ADS 250 & 400 Portable Air Dryer System (Electric Motor)



9.7(b) ADS 250 & 400 Portable Air Dryer System (Electric Motor)

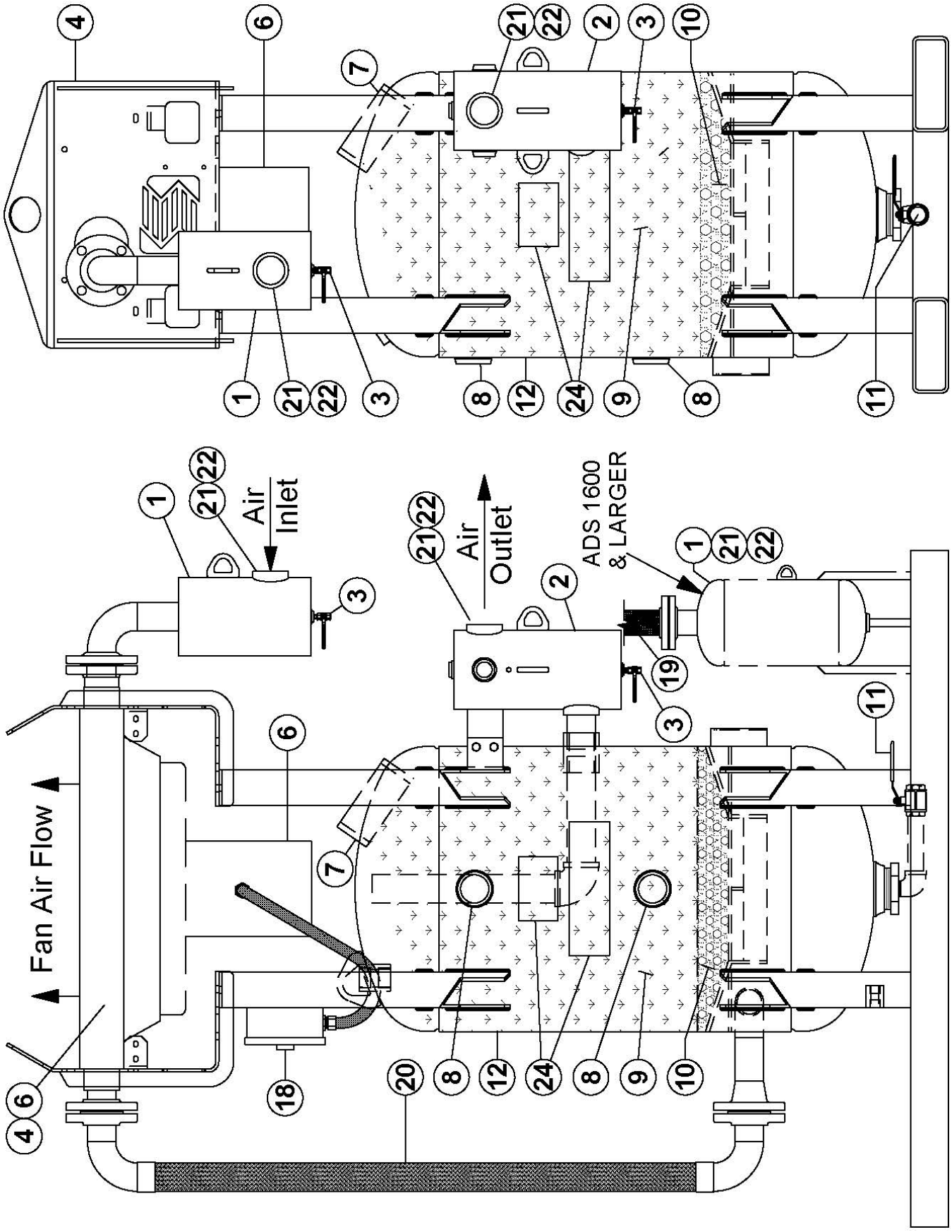
ADS 250P Parts List (Electric Motor) (Part Number: 1310-027P)

Item	Part Number	Description
1	2302-208-50	Air Filter, 1-1/2"
	2302-207-99	Air Filter Seal Kit, 1-1/2"
	2401-508	Air Inlet Ball Valve, 1-1/2" Full Port
	4211-108	Crowfoot, 4-Lug 1-1/2"
2	2302-208-50	Air Filter, 1-1/2"
	2302-207-99	Air Filter Seal Kit, 1-1/2"
	4211-108	Crowfoot, 4-Lug 1-1/2"
3	-	Manual Drain
4	1300-020-33	Aftercooler Radiator (Type E), w/o motor (250)
6	1300-020-34	Motor/Fan Assembly, 12Vdc (250)
7	3014-012	Pipe Plug, 2-1/2"
8	7064-009	Sight Glass, 2"
9	1310-000-03	Deliquescent/Desiccant Tablets
10	1310-000-01	Air Dryer Bed Marbles
11	2401-504	Ball Valve, 1/2" Full Port
12	1310-020-01P	Air Dryer Vessel, 250/400P
20	4102-108-04A	Hose Assembly, 1-1/2" x 4' (cut length to fit)
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
23	7046-003	Wheel & Tire, 3 bag
	7040-009XP	Axle, 3/4" x 23-1/2"
	7019-519	Nylock Nut, 3/4"
24	7031-999-19	Decal Kit, ADS 250

ADS 400P Parts List (Electric Motor) (Part Number: 1310-047P)

Item	Part Number	Description
1	2302-209-40	Air Filter, 2"
	2302-209-99	Air Filter Seal Kit, 2"
	2401-509	Air Inlet Ball Valve, 2" Full Port
	4211-109	Crowfoot, 4-Lug 2"
2	2302-209-40	Air Filter, 2"
	2302-209-99	Air Filter Seal Kit, 2"
	4211-109	Crowfoot, 4-Lug 2"
3	-	Manual Drain
4	1300-040-16	Aftercooler Radiator, w/o motor (400)
6	1300-040-33	Motor/Fan Assembly,12Vdc (400)
7	3014-012	Pipe Plug, 2-1/2"
8	7064-009	Sight Glass, 2"
9	1310-000-03	Deliquescent/Desiccant Tablets
10	1310-000-01	Air Dryer Bed Marbles
11	2401-504	Ball Valve, 1/2" Full Port
12	1310-020-01P	Air Dryer Vessel, 250/400P
20	4102-109-04A	Hose Assembly, 2" x 4' (cut length to fit)
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
23	7046-003	Wheel & Tire, 3 bag
	7040-009XP	Axle, 3/4" x 23-1/2"
	7019-519	Nylock Nut, 3/4"
24	7031-999-20	Decal Kit, ADS 400

9.8(a) ADS 400-2500 Air Dryer System (Electric Motor)



9.8(b) Parts List ADS 400-2500 Air Dryer System (Electric Motor)

ADS 400/750/950 Parts List (Electric Motor)

Item	Part Number	Description
1	1200-999-38P	Moisture Trap, 400/750 Inlet
	1200-999-39P	Moisture Trap, 950 Inlet
2	1200-999-40P	Moisture Trap, 400/750 Outlet
	1200-999-45P	Moisture Trap, 950 Outlet
3	2401-502	Ball Valve, 1/4" Full Port
4	1300-040-16	Aftercooler Radiator w/o motor (includes fan) (400)
	1300-070-30E	Aftercooler Radiator w/o motor (includes fan) (750)
	1300-090-30E	Aftercooler Radiator w/o motor (includes fan w/bushing) (950)
6	1300-040-09	Electric Motor, 1HP 115V/230V (400)
	1300-040-11	Electric Motor, 1HP 208-230V/460V (400)
	1300-070-09	Electric Motor, 1.5HP 115V/230V (750)
	1300-070-11	Electric Motor, 1.5HP 208-230V/460V (750)
	1300-090-09	Electric Motor, 1.5HP 115V/230V (950)
	1300-090-11	Electric Motor, 1.5HP 208-230V/460V (950)
	1300-040-12	Fan Assembly (400) (No Bushing Required)
	1300-070-12	Fan Assembly (750) (No Bushing Required)
	1300-090-12	Fan Assembly (950) (Includes Bushing)
	1300-040-13	Fan Guard (450)
	1300-070-13	Fan Guard (750)
	1300-090-13	Fan Guard (950)
	1300-090-14	Fan Mount Bushing (950)
	1300-040-15	Fan Shroud (400)
	1300-070-15	Fan Shroud (750)
	1300-090-15	Fan Shroud (950)
7	7000-001-11	Handway Crab Assembly
	7000-001-18	Handway Gasket, 6" x 8" Surefit™
8	7064-009	Sight Glass, 2"
9	1310-000-03	Deliquescent/Desiccant Tablets
10	1310-000-01	Air Dryer Bed Marbles
11	2401-506	Ball Valve, 1" Full Port
12	1310-040-01	Air Dryer Vessel (400)
	1310-070-01	Air Dryer Vessel (750)
	1310-090-01	Air Dryer Vessel (950)
18	7135-021	Motor Starter, 115-230 Volt (400/750/950)
	7135-008	Motor Starter, 208-460 Volt (400/750/950)
20	4112-109-36	Corrugated Hose, 2" x 36" (400/750)
	7003-009-01	Flange Gasket, 2"
	4112-111-68	Corrugated Hose, 3" X 68" (950)
	7003-011-01	Flange Gasket, 3"
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
24	7031-999-20	Decal Kit, ADS 400
	7031-999-21	Decal Kit, ADS 750
	7031-999-22	Decal Kit, ADS 950

ADS 1200/1600/2000/2500 Parts List (Electric Motor)

Item	Part Number	Description
1	1200-999-39P	Moisture Trap, 1200 Inlet
	1200-999-43P	Moisture Trap, 1600 Inlet
	1200-999-73P	Moisture Trap, 2000/2500 Inlet
2	1200-999-59P	Moisture Trap, 1200 Outlet
	1200-999-42P	Moisture Trap, 1600 Outlet
	1200-999-74P	Moisture Trap, 2000/2500 Outlet
3	2401-502	Ball Valve, 1/4" Full Port
4	1300-120-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (1200)
	1300-160-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (1600)
	1300-200-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (2000)
	1300-250-16	Aftercooler Radiator w/o motor (includes fan w/bushing) (2500)
6	1300-120-09	Electric Motor, 5HP 230V (1200)
	1300-120-11	Electric Motor, 3HP 208-230V/460V (1200)
	1300-160-11	Electric Motor, 5HP 208-230V/460V (1600)
	1300-200-11	Electric Motor, 7.5HP 230V/460V (2000)
	1300-250-11	Electric Motor, 7.5HP 230V/460V (2500)
	1300-120-12	Fan Assembly (1200) (Includes Bushing)
	1300-160-12	Fan Assembly (1600) (Includes Bushing)
	1300-200-12	Fan Assembly (2000/2500) (Includes Bushing)
	1300-120-13	Fan Guard (1200)
	1300-160-13	Fan Guard (1600)
	1300-200-13	Fan Guard (2000/2500)
	1300-120-14	Fan Mount Bushing (1200)
	1300-160-14	Fan Mount Bushing (1600)
	1300-200-14	Fan Mount Bushing (2000/2500)
	1300-120-15	Fan Shroud (1200)
	1300-160-15	Fan Shroud (1600)
	1300-200-15	Fan Shroud (2000/2500)
7	7000-001-11	Handway Crab Assembly
	7000-001-18	Handway Gasket, 6" x 8" Surefit™
8	7064-009	Sight Glass, 2"
9	1310-000-03	Deliquescent/Desiccant Tablets
10	1310-000-01	Air Dryer Bed Marbles
11	2401-506	Ball Valve, 1" Full Port
12	1310-120-01	Air Dryer Vessel (1200)
	1310-160-01	Air Dryer Vessel (1600)
	1310-200-01	Air Dryer Vessel (2000)
	1310-250-01	Air Dryer Vessel (2500)
18	7135-059	Motor Starter, 208-460 Volt (1200/1600/2000/2500)
19	4112-211-52	Corrugated Hose, 3" x 52" (1200/1600)
	7003-011-01	Flange Gasket, 3"
20	4112-111-68	Corrugated Hose, 3" x 68" (1200/1600)
	7003-011-01	Flange Gasket, 3"
21	7119-002	Safety Pin, Air/Blast Hose Coupling
22	8710-98778	Hose Whip Check (Safety Cable)
24	7031-999-23	Decal Kit, ADS 1200
	7031-999-24	Decal Kit, ADS 1600
	7031-999-25	Decal Kit, ADS 2000
	7031-999-26	Decal Kit, ADS 2500

10.0 Recommended Spare Parts Lists

A) Pneumatic and Electric Fan Motor Systems (see note below & see Section 9.0 drawings)			
ITEM	**QTY**	**PART #**	**DESCRIPTION**
1 & 2	5	4211-999	Crowfoot gasket (may not apply to some systems)
3	2	2401-502	Pre-filter/After-filter drain ball valve, 1/4" (ACS/ADS 400-2500 systems)
7	2	7000-001-18	Handway gasket, 6” x 8” SureFit™ (only for ADS 400-2500 systems)
8	2	7064-009	Sight glass, 2” (only for ADS systems)
9	1	1310-000-03	Deliquescent tablets (ADS Systems only; see Section 2.2 for capacity)
11	1	2401-50**X**	Separator tank drain ball valve, full port
20	1	4102-10**X**-**XXX**	Air hose assembly (250P/400P portable systems)
21	10	7119-002	Safety pin, air/blast hose coupling
22	2	8710-98778	Hose whip safety check (safety cable)
24	1	7031-999-**XX**	Safety decal kit

B) Items for Pneumatic Fan Motors Systems Only (see note below)			
ITEM	**QTY**	**PART #**	**DESCRIPTION**
5	1	1300-**XXX**-03	Air motor
5	2	1300-**XXX**-99	Air motor replacement parts kit
13	1	2401-504	Air motor shutoff ball valve, 1/2" full port
14	1	2312-**X**04-99	Air filter/regulator repair kit
14	1	2309-**X**04-99	Air filter/regulator repair kit (systems manufactured prior to Sept. 2016)
15	1	2311-**X**04-99	Air lubricator repair kit
15	1	2304-**X**04-99	Air lubricator repair kit (systems manufactured prior to Sept. 2016)
16	1	2010-009-01	Pressure gauge, 0-160 psi
17	1	2011-**XXX**-01	Air motor muffler

C) Items for Electric Fan Motors Systems Only (see note below)			
ITEM	**QTY**	**PART #**	**DESCRIPTION**
6	1	1300-**XXX**-**XX**	Electric fan/motor assembly (250P/400P portable systems)
6	1	1300-**XXX**-**XX**	Electric motor (specify system size and voltage) (400-2500 systems)
18	1	7135-**XXX**	Electric motor starter (specify size/voltage) (400-2500 systems)
18	3	7135-**XXX**	Motor starter thermal unit (specify size/voltage) (400-2500 systems)

NOTE: Determine the type of radiator fan motor on the AirPrep System (either electric or pneumatic). Then, the required list of spare parts is List “A” plus either List “B” or “C”. Example: If your AirPrep System has pneumatic fan motor then the recommended spare parts you need are those items included in Lists “A” and “C”.

11.0 AirPrep System Technical Data and Troubleshooting

11.1 TABLE 1 CAPACITY SELECTION CHART (MAX SCFM @ APPROACH)

INLET TEMP °F		150				200				250				300				350			
APPROACH TEMP °F		5	10	15	20	5	10	15	20	5	10	15	20	5	10	15	20	5	10	15	20
AIR DRYER SYSTEM MODEL NUMBER	ADS 250	191	250	275	300	117	160	200	250	96	120	165	200	87	117	151	191	81	104	129	159
	ADS 400	210	384	520	605	175	375	430	500	160	300	400	464	135	250	340	396	125	235	305	355
	ADS 750	355	650	890	1025	308	560	760	880	290	545	725	840	245	450	605	701	225	410	540	625
	ADS 950	480	871	1178	1360	415	754	1020	1180	390	712	950	1100	320	588	785	910	280	520	690	780
	ADS 1200	600	1090	1475	1710	520	950	1290	1460	490	900	1200	1380	405	735	980	1130	355	650	865	990
	ADS 1600	790	1440	1950	2260	710	1290	1720	1950	660	1200	1600	1860	530	965	1290	1480	460	840	1135	1300
	ADS 2000	980	1790	2420	2800	870	1580	2140	2460	820	1490	2000	2300	660	1210	1595	1840	572	1040	1400	1610
	ADS 2500	1220	2200	3000	3470	1090	1980	2680	3100	1035	1880	2500	2870	784	1426	1980	2270	705	1290	1725	1980

Above specifications are based on 80 to 125 psig operating pressures. Maximum pressure drop is less than 3 psi.

11.2 TABLE 2 AFTERCOOLER ELECTRIC MOTOR, AIR MOTOR & FAN DATA

		ELECTRIC MOTOR								AIR MOTOR				
MODEL NO.	FAN CFM	HP	VOLTAGE	PHASE	FULL LOAD AMPS (230V)	HZ	RPM	NEMA FRAME	THERMAL OVERLOAD	INLET NPT	PSI (1)	CFM (2)	DRIP RATE (3)	
													Micro-fog	Oil-fog
ACS 250	1325	0.5	115/230 208-230/460	1 3	3.4 1.2	60 50/60	3450	IEC71	NO	1/4	35	30	15	1
ACS 400	2200 1825/2200	1.0	115/208-230 208-230/460	1 3	6.0 3.6/3.2	60 50/60	3450 2850/3450	56C		1/4	60	50	19	1
ACS 750	3600 3025/3600	1.5	115/208-230 208-230/460	1 3	8.5 4.8/4.2	60 50/60	3450 2850/3450				85	45	19	1
ACS 950	4700	1.5	115/208-230 208-230/460	1 3	8.6 4.6	60	1740	145TC		1/2	60	55	22	1
ACS 1200	7000	5.0	230	1	23.0			184TC			70	100	30	2
		3.0	208-230/460	3	8.8			182TC						
ACS 1600	9700	5.0	208-230/460	3	13.4			184TC		1	100	180	54	4
ACS 2000	11000	7.5	230/460		19.6			213TC		1-1/4	90	230	69	5
ACS 2500	14000													

All motors shown are TEFC. Published electrical ratings are approximate and may vary because of motor brand. Actual ratings are on motor nameplate. Fan motors ***must not*** be cycled. Outdoor applications must be protected from direct weather. If ductwork or additional static resistance is added to the cooler air stream, an auxiliary air mover may be required.

1. Air inlet to the air motor must be regulated to this pressure.
2. CFM (Free Air) consumption of the air motor. Lubrication = One drop of oil per minute for every 50 cfm of air passing through the air motor.
3. Drip rate is the recommended drops of oil that enters the air motor per minute based on the CFM. Two types of lubricators have been used in Schmidt® AirPrep Systems. Current production units are equipped with “oil-fog” lubricators (Style MP). Systems manufactured prior to September 2016 are equipped with “micro-fog” lubricators (Style L74M). Note: Micro-fog lubricator drip rates are significantly higher because only a fraction of the drip total enters the air stream.

11.3 TABLE 3 TROUBLE SHOOTING GUIDE FOR AIR MOTORS

	SYMPTOM				
REASON	LOW TORQUE	LOW SPEED	WON'T RUN AT ALL	RUNS HOT	RUNS GOOD THEN SLOWS DOWN
DIRT OR FOREIGN MATERIAL	X	X	X		
INTERNAL RUST	X	X	X		
MISALIGNMENT	X	X	X	X	X
INSUFFICIENT AIR PRESSURE	X	X			
AIR SUPPLY LINE TOO SMALL		X			
RESTRICTED EXHAUST		X			X
POOR LUBRICATION	X	X	X	X	
JAMMED MACHINE	X	X	X		X
AIR COMPRESSOR TOO SMALL		X			X
AIR COMPRESSOR TOO FAR FROM UNIT		X			X

11.4 ADDITIONAL TROUBLE SHOOT INFORMATION

11.4.1. Reduced cooling capacity

1) Check fan rotation. Air motors and some electric motors are reversible rotation. Confirm correct fan rotation.
2) Check fan speed. Adjust air pressure as shown in Section 11.2.
3) Check Aftercooler heat exchanger cooling surface. Accumulated dirt and grime will reduce air flow. Clean surface as detailed in Section 8.5.3.

11.4.1. Reduced air flow

1) Clogged aftercooler radiator. Clean internally as detailed in Section 8.5.3.
2) ADS Systems only. Fused deliquescent tablets can reduce air flow through separator tank. Break apart fused tablets using long rod (see Section 8.6).
3) ADS Systems only. Desiccant tablet particles can collect within the marble bed and restrict flow. Clean out small particles from marble bed.
4) ADS Systems only. Too small of desiccant or deliquescent tablet size can collect within marble bed (#10) and restrict air flow. Minimum tablet size is 5/8" x 3/4".
5) Reduced port ball valves will lessen air flow capacity in and out.

11.4.2. Excessive vibration

1) Damaged cooling fan such as bent or broke blade can cause vibration from imbalance and may result in further equipment damage. Inspect fan and replace if damaged.

12.0 Warranty and Reference Information

12.1 Warranty

The following sections are to be used as a guide in determining warranty policies and procedures for SCHMIDT® products. It is to be used in determining whether a warranty is justified and as a procedural guide in completing a SCHMIDT warranty claim.

12.2 Warranty Policy

1. All SCHMIDT products are guaranteed to be free of defects in material and workmanship at time of shipment. Axxiom Manufacturing, Inc. warrants its products against defects in material and workmanship under normal and proper use for a period of ninety (90) days from the date of delivery. Such warranty is extended only to the buyer who purchases the equipment directly from Axxiom Manufacturing, Inc., or its authorized distributors. This warranty does not include expendable parts such as, but not limited to, hoses, nozzles, and seals.

2. The obligation under this warranty is strictly limited to the replacement or repair, at Axxiom's option, of machines and does not include the cost of transportation, loss of operating time, or normal maintenance services. Axxiom Manufacturing, Inc. shall have no liability for labor, consequential damages, freight, or special charges.

3. This warranty does not apply to failure occurring due to abuse, misuse, negligence, corrosion, erosion, normal wear and tear, alterations or modifications made to the machine without express written consent of Axxiom Manufacturing, Inc.

4. Warranty requests must be submitted in writing within thirty (30) days after failure.

5. Written authorization to return merchandise under warranty must first be obtained from Axxiom Manufacturing, Inc. In no case is merchandise to be returned to Axxiom for credit without authorization. At the time of authorization, Axxiom will issue a return authorization number that must be included on all packages and correspondence. Any material returned without prior authorization will remain the property of the sender and Axxiom will not be responsible for it.

6. All returns must be shipped prepaid freight. All returns may be exchanged for other equipment or parts of equal dollar value. If goods are not exchanged, they are subject to a 20% restocking charge. Any cost incurred by Axxiom Manufacturing, Inc. to restore such goods to first class condition will be charged to the customer.

7. Axxiom Manufacturing, Inc. reserves the right to inspect and make the final decision on any merchandise returned under warranty.

8. Axxiom Manufacturing, Inc. offers no warranty with respect to accessories, including but not limited to, engines, motors, batteries, tires, and any other parts not manufactured by Axxiom Manufacturing, Inc., but which the original manufacturer warrants.

9. Axxiom Manufacturing, Inc. reserves the right to make product changes or improvements without prior notice and without imposing any obligation upon itself to install the same on its products previously sold.

10. The above warranty conditions can only be altered by Axxiom Manufacturing, Inc. Axxiom must confirm alterations in writing for each specific transaction.

11. Axxiom Manufacturing, Inc. reserves the right to establish specific warranty terms for used or demo machines on an individual transaction basis. Invoices covering such merchandise will clearly state the provisions of the applicable warranty for each specific transaction.

12. USE OF NON-ORIGINAL SCHMIDT® FACTORY REPLACEMENT PARTS ON ANY SCHMIDT EQUIPMENT VOIDS ALL WARRANTIES.

13. AXXIOM MANUFACTURING, INC. DOES NOT AUTHORIZE ANY PERSON, REPRESENTATIVE OR SERVICE OR SALES ORGANIZATION TO MAKE ANY OTHER WARRANTY OR TO ASSUME ON BEHALF OF AXXIOM MANUFACTURING, INC. ANY LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS OTHER THAN THOSE CONTAINED HEREIN.

14. UNDER NO CIRCUMSTANCES SHALL AXXIOM MANUFACTURING, INC. BE LIABLE TO CUSTOMER OR ANY OTHER PERSON FOR ANY DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT OR ARISING OUT OF ANY BREACH OF ANY WARRANTY OR FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER, INCLUDING WITHOUT LIMITATIONS, DAMAGES FOR ANY LOSS OF GOODWILL, WORK STOPPAGE, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES.

15. AXXIOM MANUFACTURING, INC. MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SCHMIDT PRODUCTS SOLD PURSUANT THERETO.

12.3 Trademarks, Patents, and Proprietary Statements

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12.4 Safety Information Sources

Axxiom Manufacturing, Inc
This equipment and all Schmidt® equipment are manufactured exclusively by Axxiom Manufacturing, Inc. If any operational or safety related questions arise relating to this equipment contact Axxiom Manufacturing, Inc.

Phone: 1-800-231-2085
Website: www.SchmidtAbrasiveBlasting.com

Axxiom Manufacturing, Inc.
11927 South Highway 6
Fresno, Texas 77459

Occupational Safety and Health Administration (OSHA) establishes and enforces regulations regarding safety practices in the workplace including the abrasive blasting industry. Any questions, reporting of work-related injuries, or reporting of unsafe work practices can be made to the following contact information. Answers to most any safety related questions can be found at the OSHA website shown below.

Phone: 1-800-321-6742
Website: www.osha.gov

U.S. Department of Labor
Occupational Safety and Health Administration
200 Constitution Avenue, NW
Room Number N3626
Washington D.C. 20210

National Institute of Occupational Safety and Health (NIOSH) is a federal agency responsible for conducting research and recommendations for the prevention of work-related injuries and sickness.

Phone: 1-800-232-4636
Website: www.cdc.gov/niosh

National Institute of Occupational Safety and Health
Patriots Plaza 1
395 E Street, SW, Suite 9200
Washington, DC 20201

American National Standards Institute (ANSI) coordinates the development and use of voluntary consensus standards including safety standards.

Phone: 1-202-293-8020
Website: www.ansi.org

American National Standards Institute
1899 L Street, NW
11th Floor
Washington, DC 20036

12.5 Surface Preparation Information Sources

The Society for Protective Coatings (SSPC) consists of research and testing committees, conducts seminars, and establishes industry standards on surface preparation methods, abrasive and coatings.

Phone: 1-877-281-7772
Website: www.sspc.org

The Society for Protective Coatings
800 Trumbull Dr.
Pittsburg, PA 15205

National Association of Corrosion Engineers (NACE) develops test methods and recommended practices on surface preparation techniques and coatings.

Phone: 1-800-797-6223
Website: www.nace.org

National Association of Corrosion Engineers
15835 Park Ten Place
Houston, TX 77084

12.6 Table of Blast Abrasive Characteristics

Abrasive Type	Hardness (Mohs)	Grain Shape	Density Lbs/ft3	Color	Free Silica Content	No. of Recycles	Initial Cost	Typical Use
Corn Cobs	2	angular	35-45	tan	none	4-5	low	stripping paint from delicate substrates
Sodium Bicarbonate	2.8	crystal	60	white	none	4-5	medium	cleaning and stripping paint from delicate substrates
Walnut Shell	3	angular	45	lt. brown	none	4.5	low	stripping paint from delicate substrates
Plastic	3.2	angular	45-60	white	none	8-10	medium	Paint stripping, deburring, and cleaning
Glass Beads	4.5	spherical	90	crystal	none	8-10	low	cleaning finishing
Starblast XL	6.5	spherical	128	lt. brown	<1%	4-5	medium	outdoor blasting
Coal Slag	7	angular	85	black	none	1-2	medium	outdoor blasting
Copper Slag	7	angular	112	black	none	1-2	medium	outdoor blasting
Garnet	7	angular	147	pink	<2%	4-5	medium	outdoor blasting
Steel Shot	8	spherical	280	steel grey	none	200	low	cleaning and peening
Steel Grit	8	angular	280	steel grey	none	200	medium	removing heavy scale
Aluminum Oxide	9	angular	120	brown	<1%	6-8	medium	cleaning and finishing, deburring and etching

NOTES

13.0 Blasting Data

13.1 Table 1 Approximate Air Consumption (cfm) Per Blast Nozzle

	NOZZLE PRESSURE						
NOZZLE SIZE	**60 psi**	**70 psi**	**80 psi**	**90 psi**	**100 psi**	**120 psi**	**140 psi**
No.2 1/8"	14	16	18	20	22	26	30
No.3 3/16"	32	36	41	45	49	58	66
No.4 1/4"	57	65	72	80	90	105	121
No.5 5/16"	90	101	113	125	140	160	185
No.6 3/8"	126	145	163	182	200	235	270
No.7 7/16"	170	193	215	240	270	315	360
No.8 1/2"	230	260	290	320	350	410	470
No.10 5/8"	360	406	454	500	550	640	740
No.12 3/4"	518	585	652	720	790	925	1060

13.2 Table 2 Abrasive Consumption (lbs. per hour) Per Blast Nozzle

	NOZZLE PRESSURE						
NOZZLE SIZE	**60 psi**	**70 psi**	**80 psi**	**90 psi**	**100 psi**	**120 psi**	**140 psi**
No.2 1/8"	90	105	115	130	140	165	190
No 3 3/16"	205	230	260	290	320	375	430
No.4 1/4"	365	420	460	500	560	660	760
No.5 5/16"	575	650	725	825	900	1050	1200
No.6 3/8"	840	945	1050	1155	1260	1475	1700
No.7 7/16"	1150	1300	1450	1600	1750	2050	2350
No.8 1/2"	1460	1660	1850	2000	2250	2650	3000
No.10 5/8"	2290	2600	2900	3125	3520	4100	4750
No.12 3/4"	3300	3750	4180	4500	5060	5950	6800

13.3 Table 3 Hose Selection Guide (blasting @ 100 Psi)

NOZZLE SIZE	**No.4 1/4"**	**No.5 5/16"**	**No.6 3/8"**	**No.7 7/16"**	**No.8 1/2"**
CFM @ 100psi	90	140	200	270	350
AIR HOSE	1 1/4"	1 1/4"	1 1/2"	1 1/2"	2"
BLAST HOSE	1"	1 1/4"	1 1/4"	1 1/2"	1 1/2"
ABRASIVE (lbs. per hr.)	560	900	1260	1750	2250

13.4 Additional Information on Blasting Productivity

Air volume and pressure are very important. The blasting production rate will increase with higher blasting pressures and decrease with lower blasting pressures. The National Association of Corrosion Engineers' data suggests that for each 1 psi reduction in nozzle pressure, there is a 1.5% production loss. Pressure drop through a Schmidt® blast unit is normally less than 1 psi, while blast units manufactured by some of our competitors have pressure losses as high as 12 psi resulting in an 18% loss of production. Air pressure loss can also be avoided by using the shortest possible hose of adequate size. The inside diameter of both the blast hose (other than whip hose) and the air hose should be approximately three times the diameter of the orifice in the blast nozzle.

Standard Schmidt blast units are rated for a maximum pressure of 150 psi. However, equipment manufactured prior to 2005 can be rated at 125psi. Refer to pressure vessel nameplate.