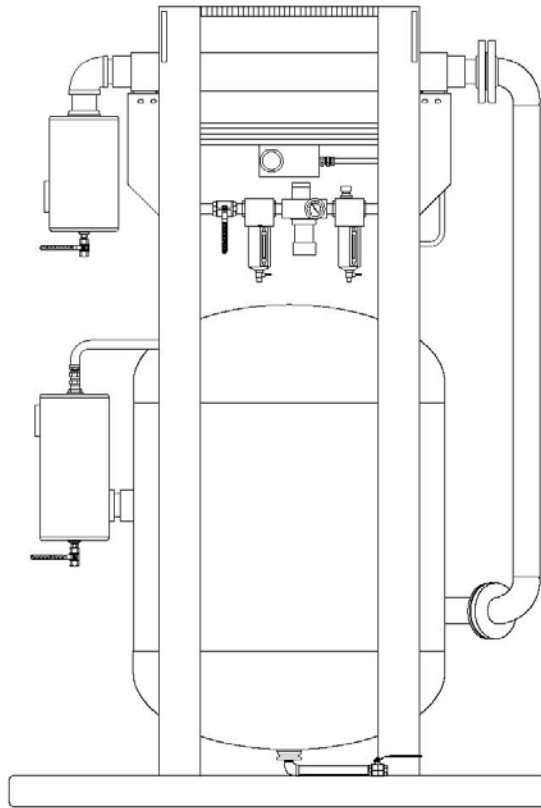


***AIRPREP* AIR DRYER SYSTEM**

OPERATION AND MAINTENANCE MANUAL

NOVEMBER 2007



SCHMIDT®

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

Manual Part Number 7200-230



AXXIOM Manufacturing, Inc.
11927 S. Highway 6, Fresno, Texas 77545
800.231.2085 * 281.431.0581 * fax 281.431.1717



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. You 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.**

Instructions for use of manual sections

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 you of the possible hazards and explain how to avoid them. The safety symbols and explanations do not by themselves 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.

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.

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 manually or automatically fill the Airprep System vessel with compressed air.
Depressurize	To manually or automatically release all the compressed air from inside the Airprep System vessel. (Also referred to as “blowdown”.)
Blowdown	To manually or automatically release all the compressed air from inside the Airprep System vessel. (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.	1	7031-019	Air Prep System	Not Applicable
2.	1	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
3.	1	7031-001	Medium	Not Applicable
4.	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.
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.



1) 7031-019



2) 7031-XXX



3) 7031-001



4) 7031-007A

Figure 0.1(a) – Warning decal summary



5) 7031-017



6) 7031-018



7) 7031-057

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

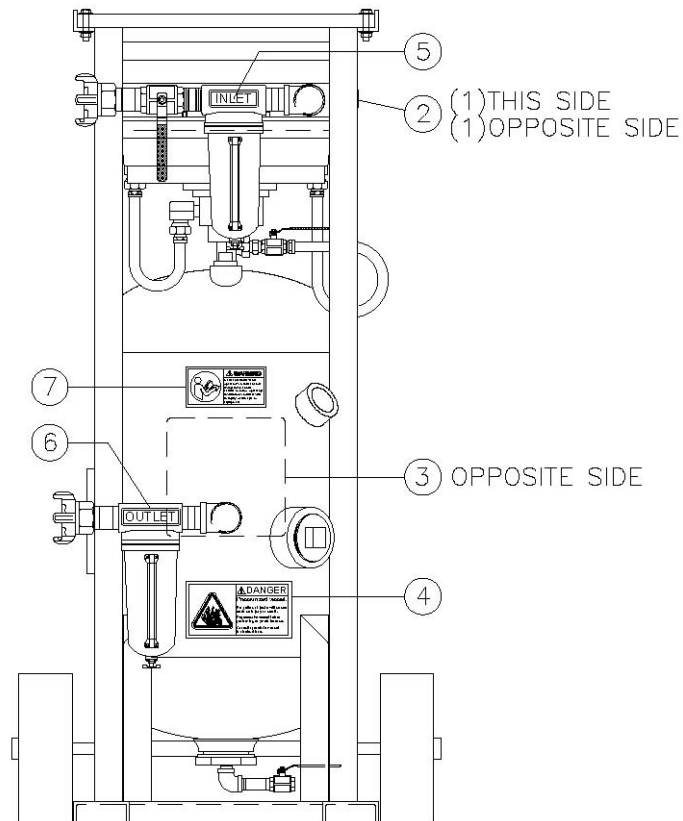


Figure 0.2(a) –Warning decal location for ADS 250 Dryer

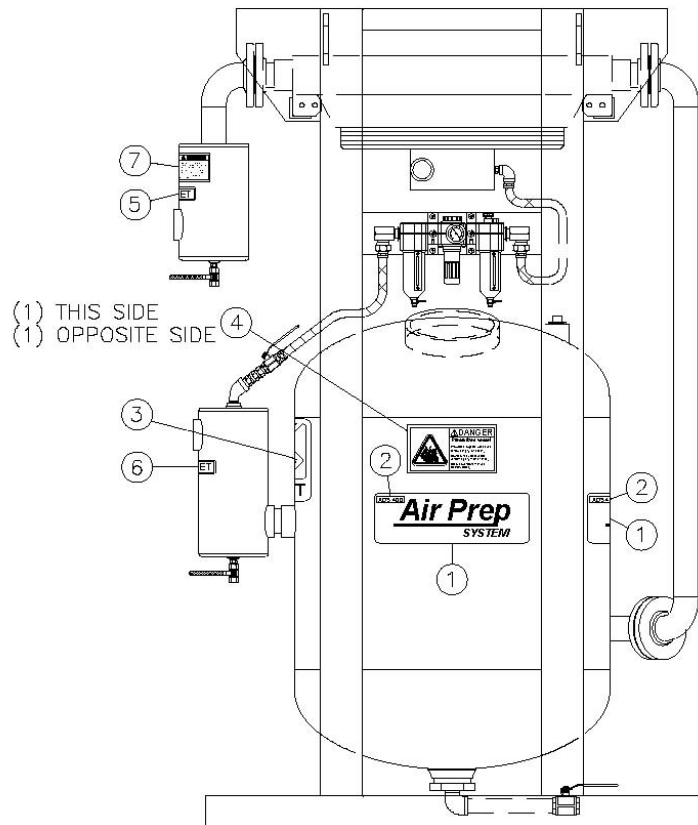


Figure 0.2(b) –Warning decal location for ADS 400-2500 Dryer

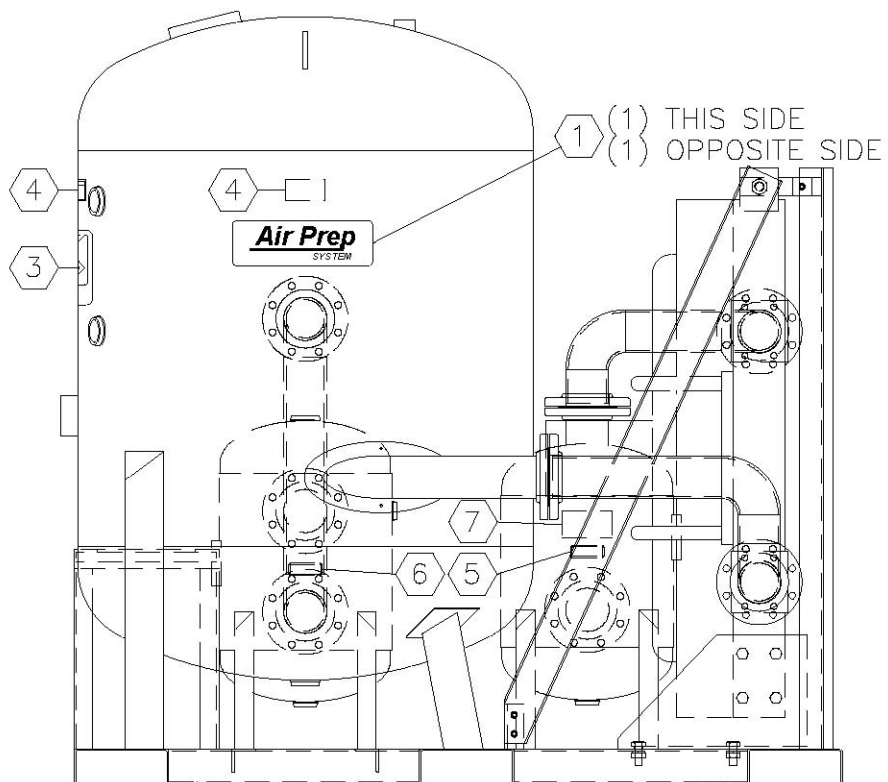


Figure 0.2(b) –Warning decal location for ADS 3500 Dryer

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1.0 Rules for Safer Operation

1.1. GENERAL RULE FOR SAFER OPERATION.

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

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.

THIS EQUIPMENT IS DESIGNED TO BE USED IN CONJUNCTION WITH ABRASIVE BLAST EQUIPMENT THEREFORE SOME OF THE *RULES FOR SAFER OPERATION* THAT FOLLOW MAY NOT BE SPECIFIC TO THE USE OF THE AIRPREP SYSTEM HOWEVER, OPERATORS MAY ENCOUNTER THESE POTENTIAL HAZARDS.

DANGER

AIRPREP SYSTEMS AND THE ABRASIVE BLAST OPERATION ARE POTENTIALLY DANGEROUS IF ALL SAFETY PRECAUTIONS ARE NOT FOLLOWED. FAILURE TO OPERATE THE AIRPREP SYSTEM 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 3.9 and OSHA 29 CFR 1910.136.

CAUTION

Heavy objects can shift while being blasted and may fall on operators. Wear foot protection to prevent injury. See Section 3.9 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 3.9 and OSHA 29 CFR 1910.133.



The abrasive blast operation produces a dusty work environment which can leave dust that can be blown in the face and eyes of operators. Wear OSHA approved safety glasses. See Section 3.9 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 Section 3.9 and OSHA 29 CFR 1910.134.



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. Wear OSHA approved respiratory protection. See Section 3.9 and OSHA 29 CFR 1910.134.

1.7. BREATHING AIR QUALITY.

Do Not use breathing air that does not meet OSHA Class D standards. Extreme caution must be taken when selecting a source of breathing air. 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 3.9). 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. 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.



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. Reference 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.

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 3.9 and refer to OSHA 29 CFR 1910.95.



Loud noise is generated by the blast nozzle and the blowdown operation of this equipment. Wear OSHA approved hearing protection. See Section 3.9 and OSHA 29 CFR 1910.95.

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 3.9 and OSHA 29 CFR 1910.94 and 1910.134.

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 Health and Safety 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 and related 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 and the use of this equipment create high level of noise which will 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 prevent 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 loose balance 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. ELECTRICALLY GROUND EQUIPMENT.

Static electricity is generated by the abrasive flow through the blast hose. To prevent static electrical shock to operating personnel only use static dissipating blast hose and install a grounding strap on the abrasive blaster.

1.21. 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 sections 1.22 through 1.31 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 pressure vessel 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.

1.22. 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 Section 2.2.

1.23. 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 pressure vessel. See the ASME nameplate attached to the vessel typically located above the handway. See Section 3.7 for information regarding the pressure relief valve.

1.24. 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.

1.25. ASME NAMEPLATE REQUIRED.

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

1.26. 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 certification.

1.27. 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.

1.28. 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.

1.29. 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.

1.30. 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.

1.31. 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.

1.32. 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 fill 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.



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.

1.33. 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).

1.34. 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.

1.35. CHECK FOR DAMAGED PARTS.

Do Not use this equipment with damaged components. Damaged components can fail during operation and result in serious injury or death to operating personnel. Periodically check all valves, hoses, and fittings to see that they are in good condition. Repair any component that shows any sign of wear or leakage. See Section 8.0.

1.36. 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 prevent accidental disconnections. Accidental hose disconnection can cause serious injury or death. See Section 5.14 and 8.8.

1.37. 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 abrasive blaster's operating pressure. Improper hoses and/or fittings used on, or connected to your abrasive blaster 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.



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.

1.38. 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.



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.

1.39. NEVER AIM BLAST NOZZLE TOWARDS ANY PERSON.

Do Not aim the blast nozzle towards yourself or any person. System malfunction can cause

accidental start up and result in injury to personnel.

1.40. 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. Reference OSHA 29 CFR 1910.134.

1.41. 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.

1.42. 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.

1.43. 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. See Section 2.6.

1.44. 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.

1.45. 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.

1.46. 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).

1.47. 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.

1.48. 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.

1.49. DO NOT OPERATE WITH GUARDS REMOVED.

Do Not operate 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.

1.50. 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 prevent 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.

1.51. 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 Section 0.0 and 8.10.

1.52. 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.

1.53. 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 the 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 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.axxiommfg.com

2.2 Air Dryer System (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.	ADS 250	ADS 400	ADS 750	ADS 950	ADS 1200	ADS 1600	ADS 2000	ADS 2500	ADS 3500
VOLUME (cu ft) (Liters)	4.4 (125)	8.4 (238)	14.9 (422)	22.4 (634)	24.1 (682)	28.1 (796)	40.3 (1141)	45.0 (1274)	62.8 (1778)
APPROXIMATE DELIQUESCENT STORAGE (cu ft) (Liters)	2.5 (71)	4.0 (113)	7.25 (205)	9.5 (269)	12.0 (340)	16.0 (453)	20.0 (566)	25.0 (708)	35.0 (991)

2.3 Important Reference Numbers

Fill in the M Series Abrasive Blaster 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 Serial Number _____ National Board Number _____

2.4 Vessel Information

- 2.4.1. All pressure vessels used in Schmidt Abrasive Blasters 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 that particular 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 fork lift 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.

2.7 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 250	1310-021	1310-022	*59 (1499)	29 (737)	34 (864)	1-1/4"	(1) 1-1/4"	420 (191)
ADS 400	1310-041	1310-042	*62 (1575)	30 (762)	42 (1066)	2"	(1) 2", (2) 1"	980 (445)
ADS 750	1310-071	1310-072	*70 (1778)	33 (838)	48 (1219)	2"	(1) 2", (2) 1"	1400 (635)
ADS 950	1310-091	1310-092	*79 (2006)	38 (965)	62 (1575)	3"	(1) 3", (2) 1"	1450 (658)
ADS 1200	1310-121	1310-122	*82 (2083)	38 (965)	66 (1676)	3"	(1) 3", (2) 1"	1640 (744)
ADS 1600	1310-161	1310-162	*93 (2362)	38 (965)	70 (1778)	3"	(1) 3", (2) 1"	2330 (1057)
ADS 2000	1310-201	1310-202	†101 (2565)	43 (1092)	86 (2184)	4"	(1) 4", (2) 1"	2425 (1100)
ADS 2500	1310-251	1310-252	†106 (2692)	48 (1219)	85 (2159)	4"	(1) 4", (2) 1"	2560 (1161)
ADS 3500	1310-351	1310-352	93 (2362)	83 (2108)	98 (2519)	4"	(1) 4", (3) 1"	7264 (3295)

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

3.0 System Requirements

3.1 Compressed Air Requirements

Blast nozzle

The primary air consumption in a blast system is by the blast nozzle. This usage can vary greatly depending upon the number of blast outlets, nozzle size of each outlet, and the blast pressure. The nozzle consumption and other usages must be evaluated for maximum operating efficiency of the AirPrep System. See Section 13.0, Table 1 for air consumption by nozzle size at various pressures and then add the total usages to confirm that the AirPrep System capability is not exceeded.

3.2 Air compressor size

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.

3.3 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.

3.4 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.

3.5 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.

3.6 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.

⚠ 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.

3.7 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.

Local regulations set the specifications for pressure relief valves; therefore it is the responsibility of the owner of the abrasive blaster 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 vessel nameplate attached to the pressure vessel. All AirPrep Systems include an auxiliary pressure vessel coupling that can be used to install a pressure relief valve. See Figure 3.7 for a recommended installation.

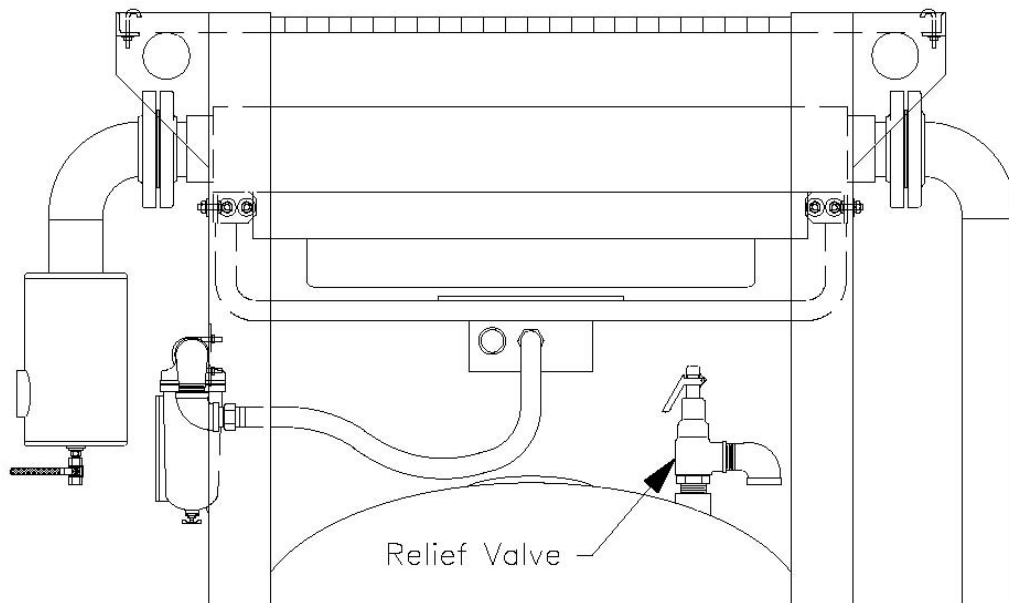


Figure 3.7 – Suggested location for air pressure relief valve

3.9 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 protect operators from injury each must be supplied with and required to use Personal Protective Equipment. The

Occupational Health and Safety 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 3.9 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 - 1989



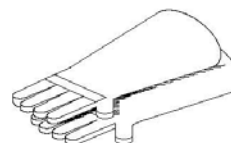
Safety Boots

Reference OSHA 29 CFR 1910.136
Must meet ANSI Z41.1 - 1991



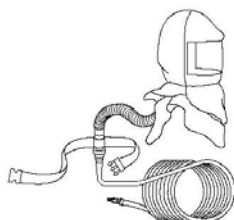
Ear Plugs

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



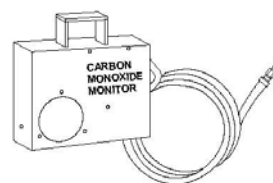
Protective Clothing

Reference OSHA 29 CFR 1910.138
No Applicable ANSI Standard



Airline Filter

Reference OSHA 29 CFR 1910.134
Must be NIOSH approved



Carbon Monoxide Monitor

Figure 3.9 - Personal Protective Equipment

4.0 Abrasive Blast 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.

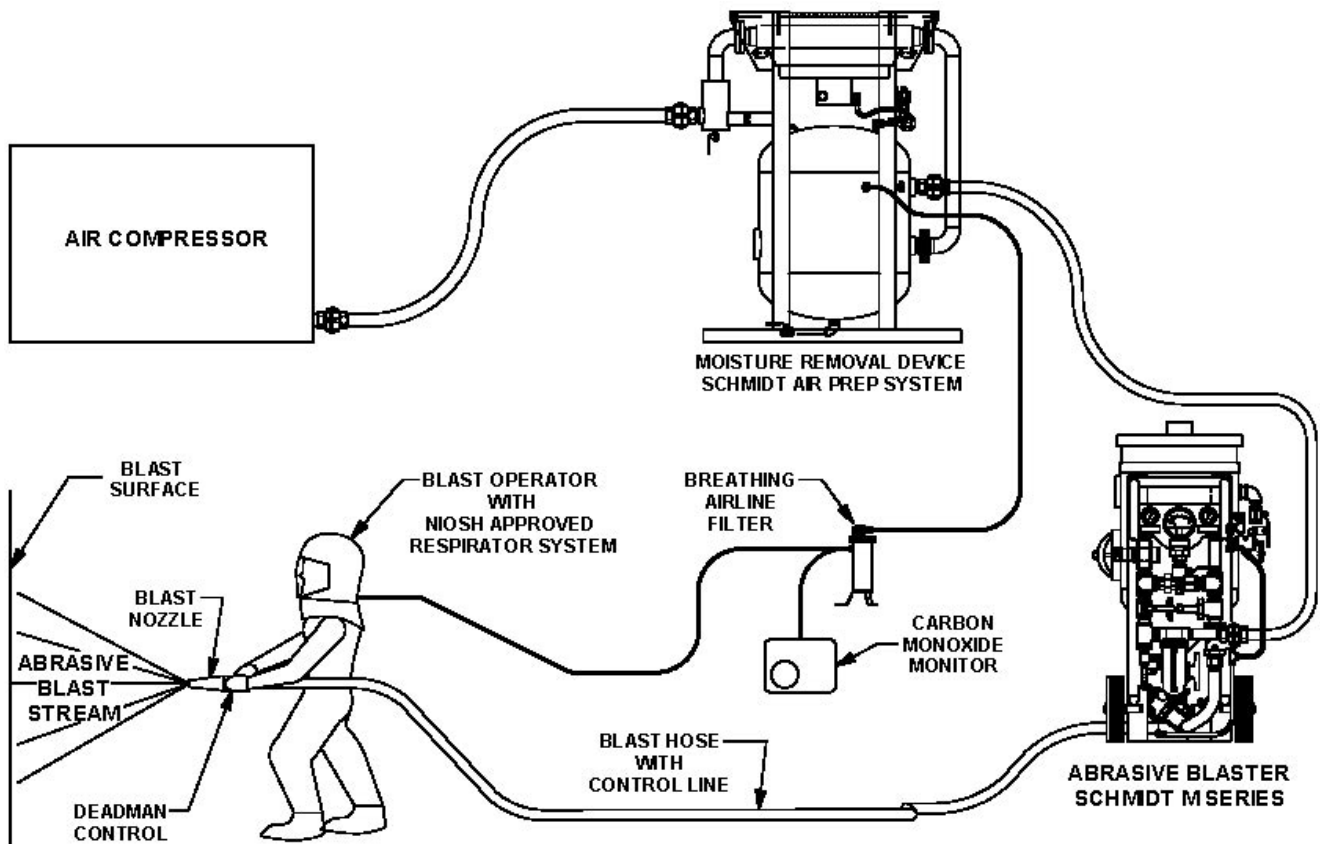


Figure 4.1 – Typical Abrasive Blast System

5.0 AirPrep System General Operation

See Figure 5.1 below 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 (#4) which filters trash and condensed moisture from the incoming air. The air flow then enters the aftercooler radiator (#8) 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 (#9) 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 (#20) at the inlet (#39). 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 (#19).

The AirPrep fan air motor is turned on and off by the ball valve (#21). Closing the ball valve will disable the fan air motor (#9). The AirPrep System separator vessel (#20) is depressurized by closing the air compressor outlet ball valve and then opening the blowdown ball valve (#19) to completely vent the compressed air.

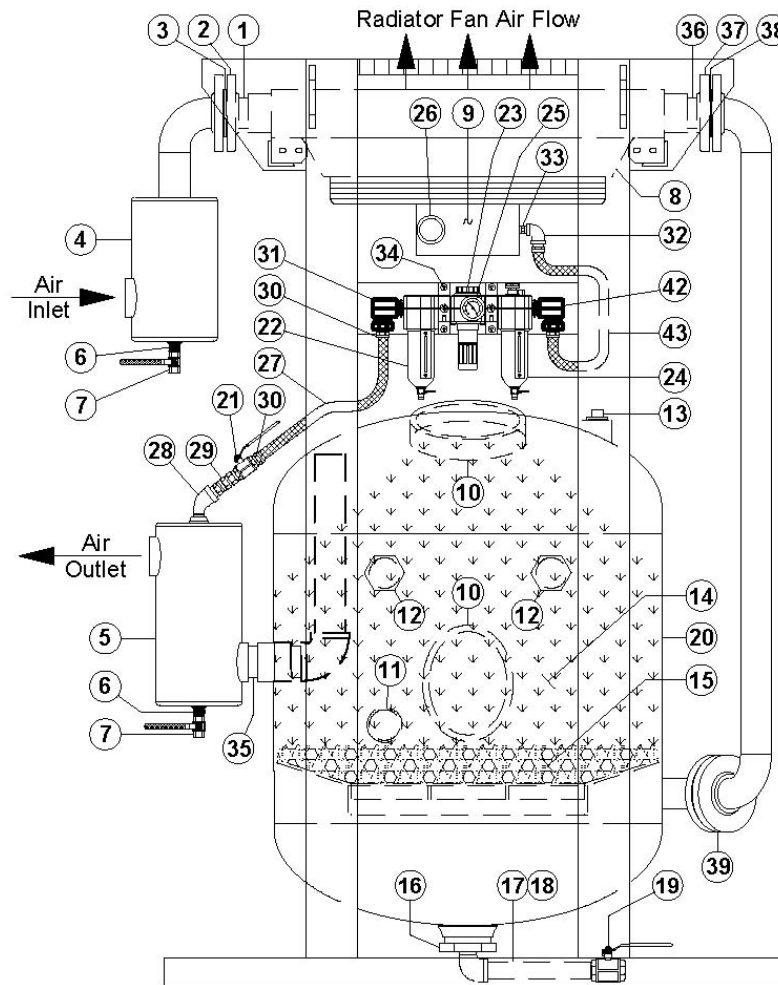


Figure 5.1 – Typical AirPrep Dryer System

5.1 AirPrep System Air Inlet

The AirPrep System air inlet is located on the pre-filter (#4). The air inlet port is the same size as the aftercooler piping (see Section 2.7). There are no fittings or ball valve provided with the air inlet. Any required fittings or ball valve must be provided by the user. 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 (#4) (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 (#7) 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 (#7) closed anytime the AirPrep System is not in use.

5.3 Aftercooler Radiator

After passing through the pre-filter, the air enters the aftercooler (#8). 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 or an optional electric motor (#9). 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).

5.4 Air Motor (radiator fan)

The air motor (#9) 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, air 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 (#21) turns off the air motor. **Note:** The air motor air supply must be clean, dry and lubricated to prevent motor failure.

5.5 Air Filter (fan air motor)

The compressed air supplied to the air motor passes through air filter (#22) to remove moisture which could cause rust in the air motor and also could cause ice to form on the exhaust muffler (#26). 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.

5.6 Air Regulator (fan air motor)

The aftercooler fan speed can be controlled by changing the supply air pressure. The pressure is adjusted by turning the knob of the air regulator (#23), clockwise to increase pressure/motor speed and counter-clockwise to decrease pressure/motor speed. The air pressure is indicated by the pressure gauge (#25) mounted on the regulator body. **Note:** The air motor pressure must not exceed the specified maximum pressure (see Section 11.0, Table 2).

5.7 Automatic Air Lubricator (fan air motor)

After the air motor supply air passes the filter and regulator it is oiled by the automatic lubricator (#24). The amount of lubrication needed is dependant upon the volume of air passing through the motor. The lubricator should be adjusted to feed (1) one drop of oil for every 50-75 cfm of air going through the motor (refer to Section 11.0, Table 2). The oil feed adjustment is made by turning the knob at the top of the lubricator, clockwise to increase flow or counter-clockwise to decrease flow. The lubricator reservoir can be drained if contaminants accumulate inside.



Failure to lubricate the air motor will result in motor failure.

5.8 Electric Motor (radiator fan)

Electric aftercooler fan motors (#9) are optional and are available with a 115/208-230 vac 1 ph, 208-230/460 vac 3 ph, 230 vac 1 ph, or 230/460 vac 3 ph rating 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 supply of the same characteristics as the motor. Be sure to provide proper fusing to prevent possible motor burnout. Before starting motor, 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.



To prevent 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.



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.

5.9 Separator Tank

After the compressed air leaves the aftercooler, it enters the separator tank (#20). 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 bed of marbles (#15) then into the deliquescent/desiccant tablets (#14). 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 (#19). 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 (#19) should be left closed anytime the unit is not in use.



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.

5.10 Deliquescent/Desiccant Tablets

The volume of the separator tank above the marble bed (#15) can be filled with deliquescent or desiccant tablets (#14). The tablets can be filled into the separator tank through the handway (#10) 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 from the compressed air, and in doing so dissolve into a brine solution that drops to the bottom of the separator tank. Desiccant tablets adsorb moisture (adhesion to the contacting surface) from the compressed air. The water droplets then drop to the bottom of the separator tank. In either case the moisture/brine solution can be drained through the ball valve (#19) at the bottom of the tank. It is important to close all drain and outlet valves anytime the AirPrep System is not in use. This is to prevent moist air entering from outside of the system.

⚠ 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.

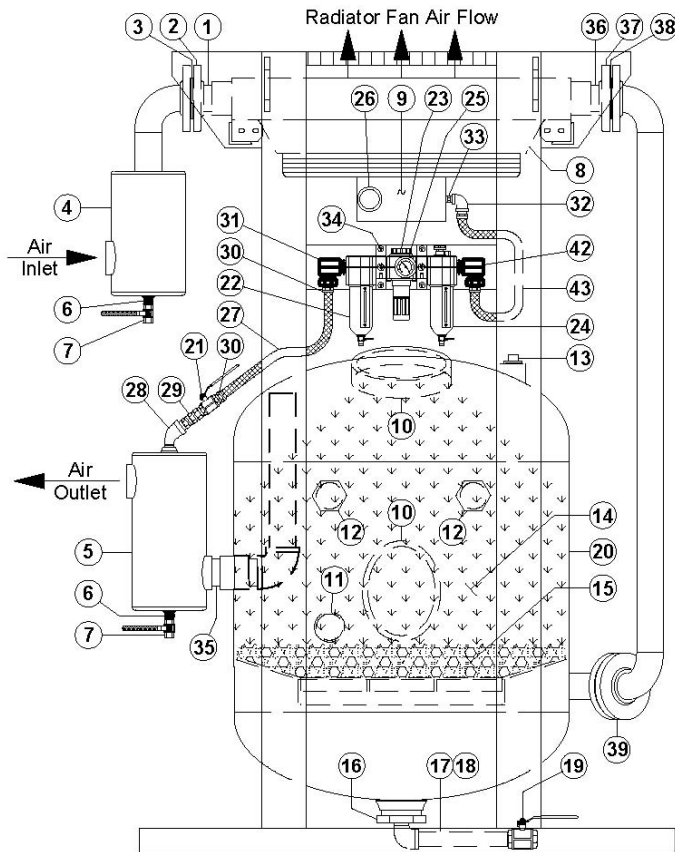


Figure 5.1 – Typical AirPrep Dryer System

5.11 Depressurize (Blowdown)

The drain ball valve (#19) is used to release all the compressed air (depressurize) from inside the AirPrep System separator tank (#20). The AirPrep System must be depressurized for filling with deliquescent /desiccant tablets, or to perform any maintenance. To depressurize the separator tank pressure turn off the air compressor and/or close the compressor’s outlet valve, then slowly open the drain ball valve (#19) located at the bottom of the tank (see Section 6.2). The drain ball valve should be left closed anytime the unit is not in use. If the drain ball valve is left open, the deliquescent/desiccant tablets will remove moisture from air entering from the 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.

5.12 After-Filter

The particulate after-filter (#5) 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 (except on ADS 250). Any debris that is removed by the after-filter can be drained through the drain valve (#7) located at the bottom of the after-filter. The drain ball valve (#7) should be left closed anytime the AirPrep System is not in use.

5.13 AirPrep System Air Outlets

The AirPrep System air outlets are located on the after-filter (#5). There are (3) three outlet ports, (1) one the same size as the aftercooler piping size and (2) two 1" auxiliary ports (see Section 2.7). The ADS 250 has only (1) one 1-1/4" air outlet. There are no fittings or ball valves provided with the outlets. Any required fittings or ball valve should be provided by the user. Plug all outlet ports that are not used. 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.

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.

5.14 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 prevent accidental hose disconnections safety pins must be installed through these holes. As a secondary safety measure each hose connection should 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 5.2 below. All air hose couplings have a gasket that seals the connection and should be replaced when air is leaking. **Note:** Airline connections larger than 2" must be made using ANSI type flanges.

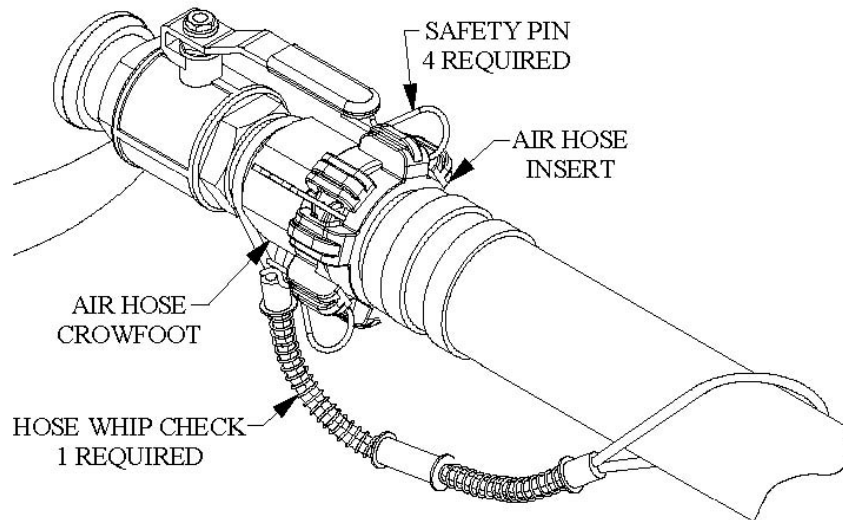


Figure 5.2 – Hose Connection Disconnect Protection

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 *AirPrep Air Dryer System 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. 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 Health and Safety Administration).*

⚠ WARNING

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

- 6.1.2. 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.

- 6.1.3. 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.

Local regulations set the specifications for pressure relief valves; therefore it is the responsibility of the owner of the abrasive blaster 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 abrasive blaster. See the ASME vessel nameplate. See Section 3.7 for information regarding the air pressure relief valve.

- 6.1.4. To prevent static electricity shocks to operating personnel install a grounding strap on the AirPrep System.

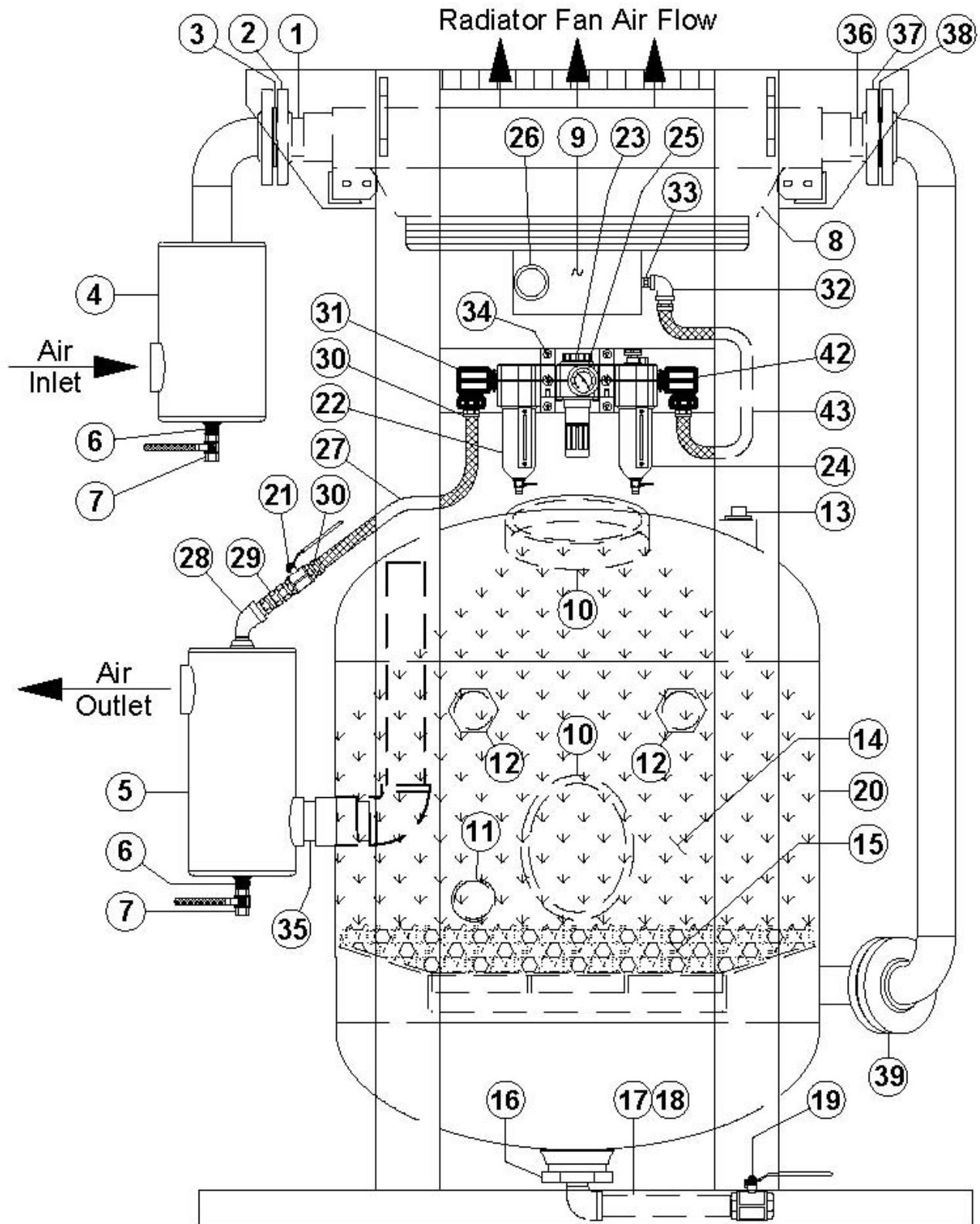


Figure 6.1 – Typical AirPrep Dryer System

6.1.5. 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.

- 6.1.6. Open drain valves (#7) on the pre-filter (#4) and after-filter (#5), petcock valve (#22) (units with air motor) and drain valve (#19) on the separator tank to drain out moisture inside. **Note:** These drain valves should be left closed when the unit is not in use.
- 6.1.7. Close drain valves (#7), (#19) and petcock valve (#22).
- 6.1.8. Close all the air outlet ball valve(s) (provided by user).
- 6.1.9. If the unit has an electric aftercooler motor skip to 6.1.12. If the aftercooler has an air motor, close the air motor on/off ball valve (#21).
- 6.1.10. Check the reservoir of the air lubricator (#24) 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 (#24) with detergent SAE #10 automotive engine oil.
- 6.1.11. Tighten the bowls on air filter (#22) and air lubricator (#24).
- 6.1.12. Check the level of the deliquescent/desiccant tablets (#14). Fill if necessary, through the upper handway opening (#10).
- 6.1.13. Properly install the handways (#10) on the separator tank (#20). See Section 6.3.
- 6.1.14. Turn the aftercooler fan (#8) 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.
- 6.1.15. Connect an air supply hose to the air inlet on the pre-filter (#4) and install safety clips to prevent 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.

- 6.1.16. Connect output air supply hose(s) to the outlet connections on the after-filter (#5) and install safety clips to prevent 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.

6.2 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 air pressure can be isolated from the AirPrep System.

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

⚠ CAUTION

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

- 6.2.3. Slowly open the drain/blowdown ball valve (#19). As the blowdown ball valve (#19) is opened air pressure inside will exhaust out and depressurize the separator tank (#20).

⚠ 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 (#20) is completely depressurized when the drain/blowdown ball valve (#19) is open with no airflow from it.

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

⚠ CAUTION

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

- 6.2.5. Depressurize equipment connected to the AirPrep System outlet(s) following the manufacturer's procedures.

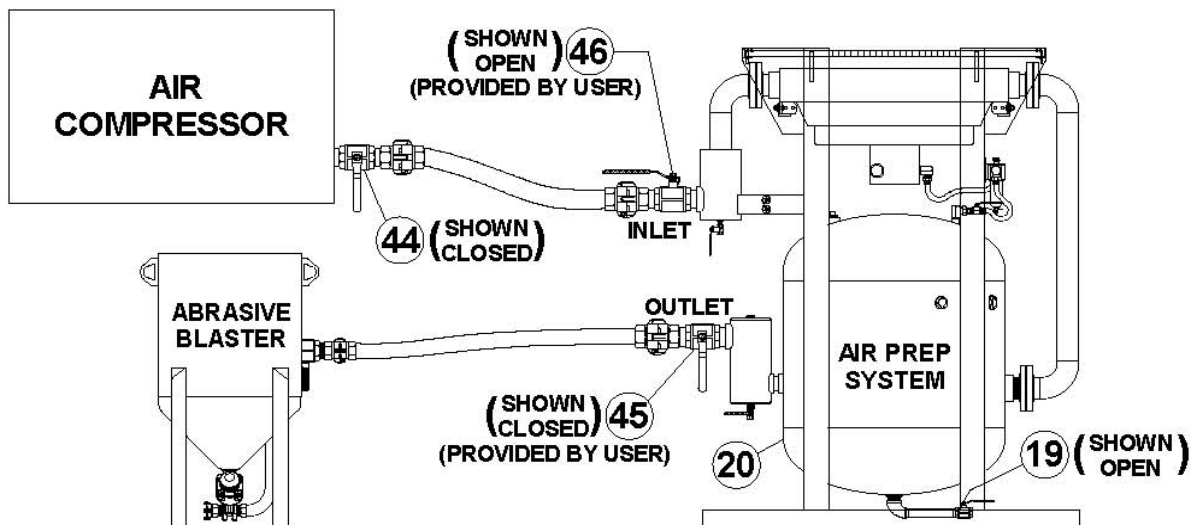


Figure 6.2 – Typical AirPrep System

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

- 6.3.1. 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 dimensions “A” and “B” of the handway weld ring. See Figure 6.3(a).
- b) Verify the size of the handway assembly by comparing the weld ring measurements from step “a” to the dimensions shown in Table 6.3(c).
- c) Verify that the dimensions of the cover, crabs, bolts, and gasket match the corresponding dimensions given in Table 6.3(c). **Note:** The actual dimensions may vary by up to 1/4" from those given in Table 6.3(c).
- d) Replace any component that is not dimensional correct. Incorrect dimensions indicate that the component is part of a different size handway assembly.



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.

- 6.3.2. Inspect the handway gasket for tears, cracks, or other wear. Replace if necessary.
- 6.3.3. Inspect the handway weld ring sealing surface inside the vessel. Inspect the handway cover sealing surface. Both surfaces must be smooth.
- 6.3.4. Place the gasket on the handway cover then fit both through the opening.
- 6.3.5. 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.
- 6.3.6. Center the gasket on the handway weld ring.
- 6.3.7. Center the handway cover on the gasket.
- 6.3.8. Center the handway crab on the outside weld ring.
- 6.3.9. Slide the handway crab bolt to the inside edge of the slot before tightening. See Figure 6.3(a).
- 6.3.10. 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.
- 6.3.11. Only after completing all the pre-operation procedures in Section 6.0 and the AirPrep System is then pressurized, re-tighten the nut with a wrench until snug again.
- 6.3.12. 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.

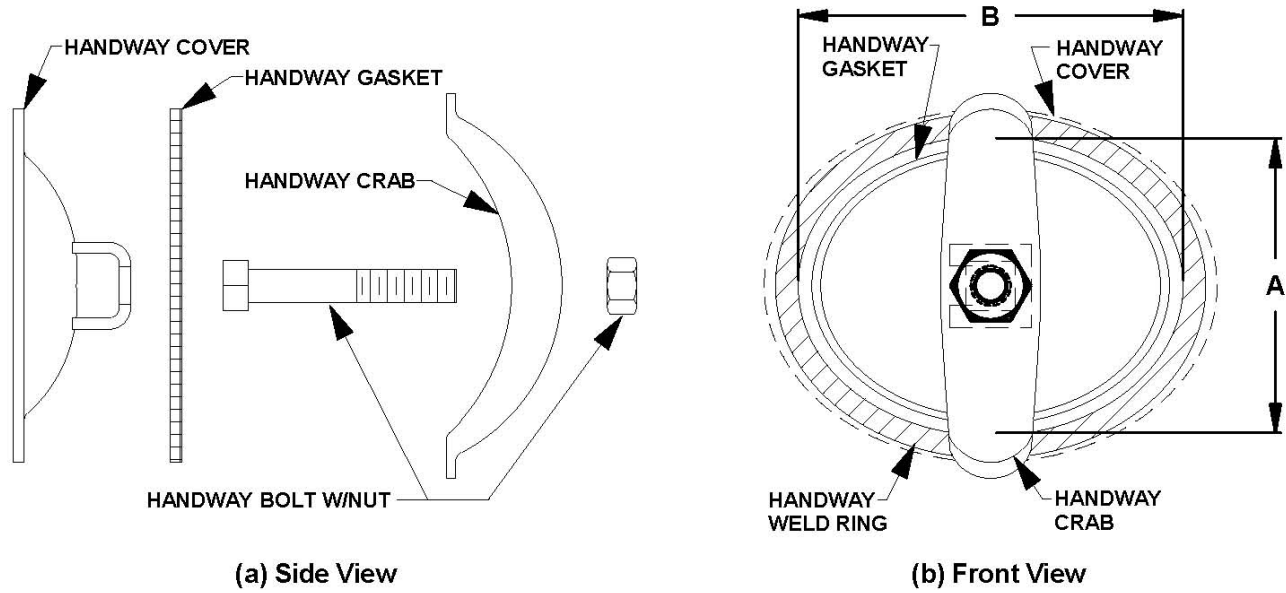


Figure 6.3 (a) – Handway Assembly

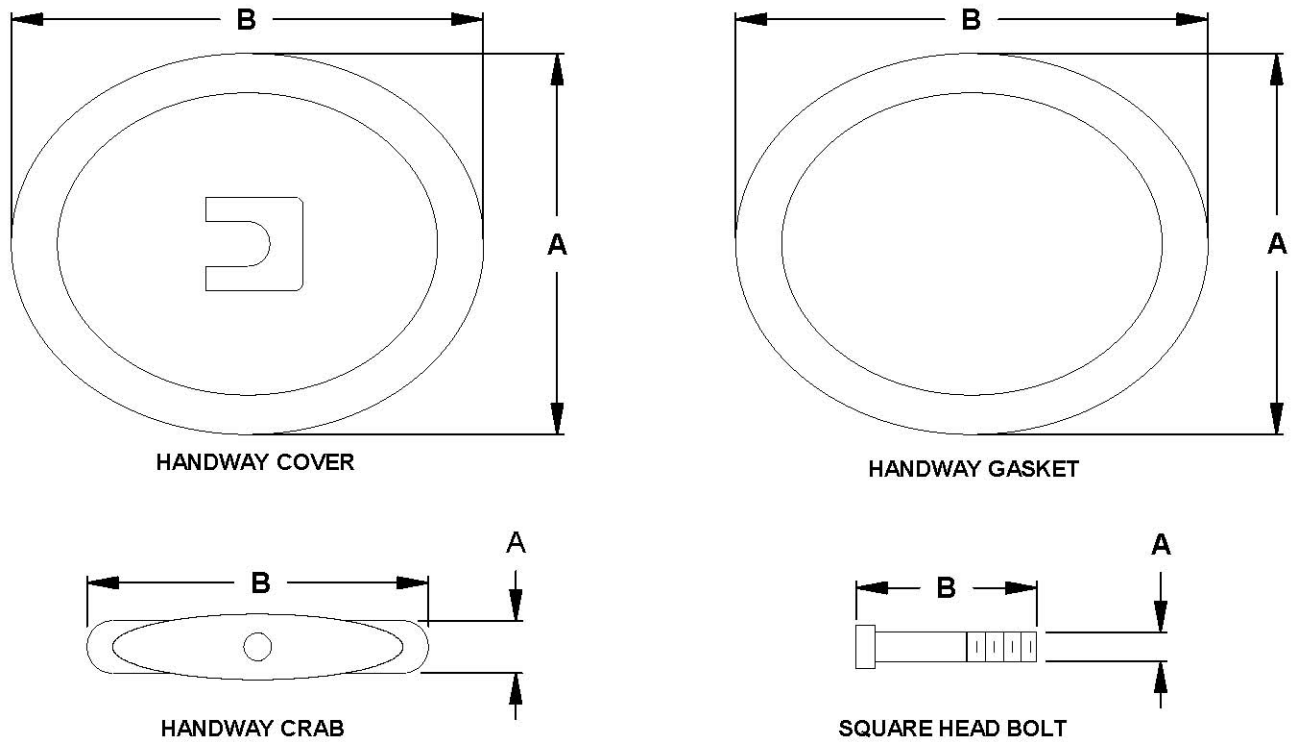


Figure 6.3 (b) – Handway Components

6" x 8" Handway Dimensions		
Component	A	B
Weld Ring	6-5/8"	8-1/2"
Handway Cover	7-11/16"	9-7/8"
Handway Gasket	7-3/4"	9-3/4"
Handway Crab	2-3/8"	8-3/4"
Square Head Bolt	3/4"-10 UNC	4-1/2"

Table 6.3 (c) – Handway Component Dimensions

7.0 Operating Instructions

7.1 Filling The AirPrep Air Dryer System With Deliquescent/Desiccant

7.1.1. The AirPrep System must be completely depressurized before filling 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 drain ball valve (#7) to check for air flow. No air flow indicates that the AirPrep System is depressurized. See Figure 7.1.

7.1.3. Remove the handway cover (#10) at the top of the separator tank (#20).

7.1.4. Check inside the separator tank for looseness of the deliquescent/desiccant tablets (#14). 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 (#20).

7.1.5. Re-install the handway cover and gasket (#10). See Section 6.3 for installation procedure.

7.1.6. Only after completing all the pre-operation procedures in Section 6.0 and 7.1, and the AirPrep System is then pressurized per Section 7.2, check the handway(s) (#10) for leaks. Periodically check the handway(s) for leaks thereafter.

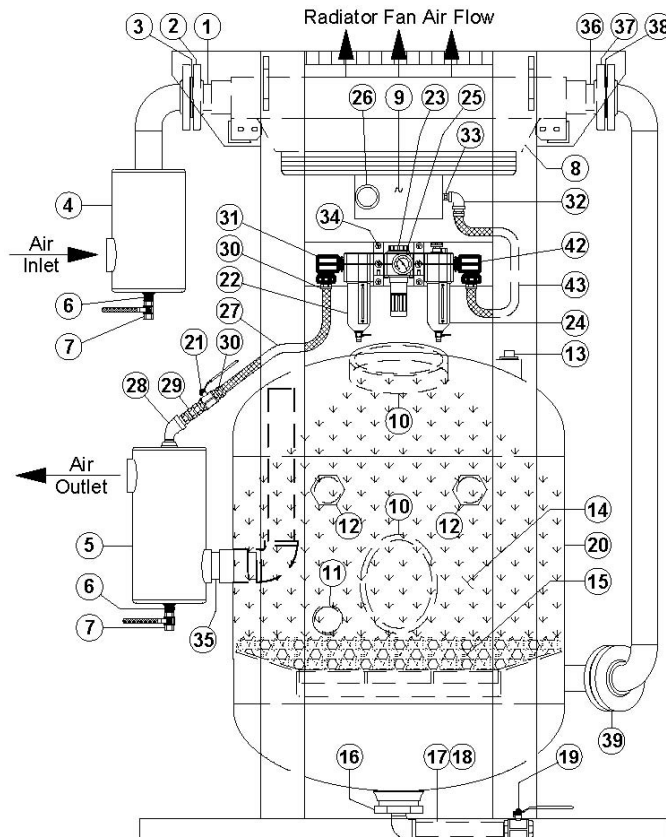


Figure 7.1 – Typical AirPrep Dryer System

7.2 AirPrep System Startup

- 7.2.1. The AirPrep System must be properly prepared and all operating personnel must be thoroughly trained before beginning 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.



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.
- 7.2.4. Slightly open drain valves (#7), (#19) and petcock valve (#22) (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.
- 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 (#21).
- 7.2.6. Adjust air pressure regulator (#23) to the required pressure. See Section 11.0 for correct air motor inlet pressure setting. Turn clockwise to increase pressure/motor speed and counter-clockwise to decrease pressure/motor speed.



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 (#24) to the proper flow rate. The lubricator should be adjusted to feed (1) one drop of oil for every 50-75 cfm of air passing through the air motor. Turn the socket head screw on top of the lubricator to adjust flow (clockwise to increase flow, counterclockwise to decrease flow).



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

- 7.2.8. Confirm that the aftercooler fan rotation is correct. The airflow should be up through the radiator (#8) with the exception of Model 250 which is downward flow. Incorrect air flow is indicates the air motor (#9) 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) to supply air to the connected equipment (see Figure 6.2).

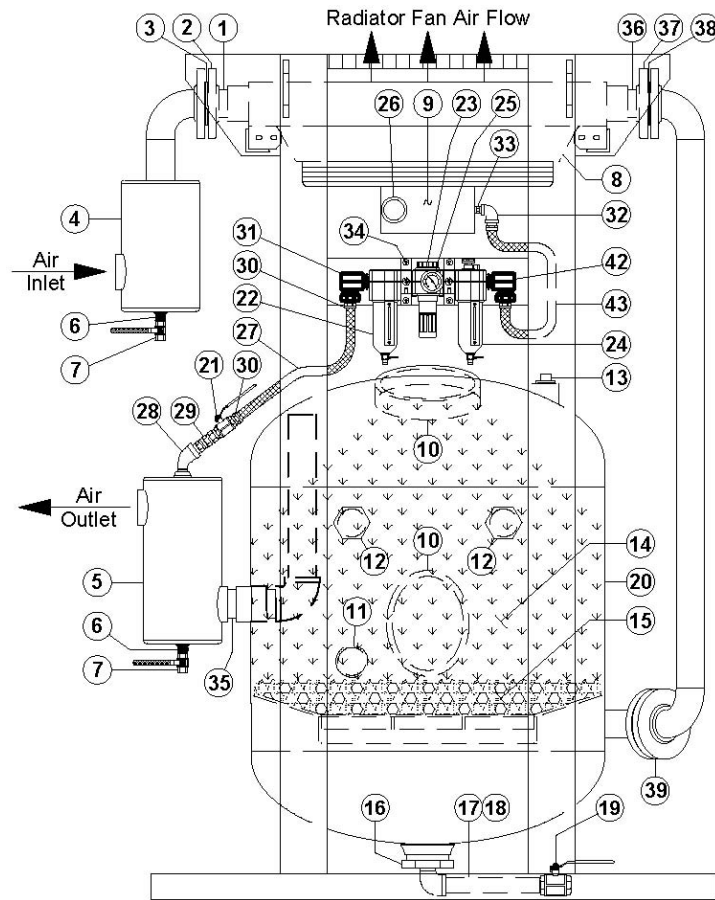


Figure 5.1 – Typical AirPrep Dryer System

7.3 AirPrep System Shutdown

- 7.3.1 Close the aftercooler motor air supply valve (#21). 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 of the air compressor and/or close the compressor’s outlet valve (see Figure 6.2).
- 7.3.4 Open drain valve (#7) on the pre-filter (#4) and after-filter (#5), and petcock valve (#22) (units with air motor) to drain moisture and clean out dirt particles.
- 7.3.5 Completely depressurize the AirPrep System separator tank (#20) by slowly opening the drain/blowdown ball valve (#19). See Section 6.2 for blowdown procedure.



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 (#7), (#22), and petcock valve (#19).

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. The ASME Code is a standard covering materials, design, fabrication, and installation. Vessel integrity subsequent to 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. Any damage to an AirPrep System can make it unsafe. Inspect the exterior of the AirPrep System pressure vessel daily 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. The interior condition of the AirPrep System pressure vessel (#20) should be inspected quarterly. Pitting caused by corrosion will reduce the wall thickness of the vessel. If excessive corrosion is found, have the AirPrep System pressure vessel inspected by a qualified facility. Contact Axxiom Manufacturing, Inc. for technical support.

Check the pressure vessel internal piping for corrosion, cracks, and holes.

8.4. MOISTURE ACCUMULATION

Once a day, with the AirPrep System pressurized, completely open the drain valves (#7) on the pre-filter (#4) and after-filter (#5), the air filter petcock valve (#22), and the drain/blowdown ball valve (#19) 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

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 Transfer Surface*

Dirt and dust should be removed by brushing the 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 fins restrict air flow and reduce the cooling capabilities of the AirPrep System. Straighten and separate any bent heat transfer fins.

8.5.2 *Fan shroud, Fan and Motor*

Dirt and grease should be removed from these parts. Rusty or corroded surfaces should be sanded clean and repainted.

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 (#4), after-filter (#5), air motor (#9), air filter (#22), air regulator (#23), and air lubricator (#24) should all be removed and serviced following this cleaning operation.

8.5.4 *Air Motor*

Once a day fill the air lubricator reservoir (#24) with detergent SAE #10 automotive engine oil. Adjust the lubricator to feed one drop of oil for every 50-75 CFM of air passing through the air motor. Turn the socket head screw on top of the lubricator to adjust flow (clockwise to increase flow, counterclockwise to decrease flow). See Section 11.0, Table 2 for air motor cfm requirements.

If the motor is sluggish or inefficient disconnect the air line (#27) and muffler (#26), 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. Relubricate the air motor with a squirt of oil in the chamber. Reassemble and return to service.

8.5.5 *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 ball bearings and require lubrication every six months. 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.



Disconnect electric power to motor before performing any routine maintenance.



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

Check the deliquescent/desiccant level monthly. At each filling of deliquescent/desiccant check inside the separator tank for looseness of the deliquescent/desiccant tablets (#14). 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 (#20).

8.7 All air hoses, control hoses, and wires should be inspected daily for wear, dry rotting, cracking

or leakage. Repair or replace any hoses or wires that show any signs of wear, leakage or other damage. Damaged wires and/or hoses can cause system malfunctions and can result in serious injury or death to operating personnel.

▲ WARNING

Worn hose assemblies can rupture during operation and can cause serious personal injury.

- 8.8. All air hose couplings have pin holes that align when connected. To prevent 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 8.1 below. Check hose connections daily and replace missing or damaged pins and whip checks.

▲ WARNING

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

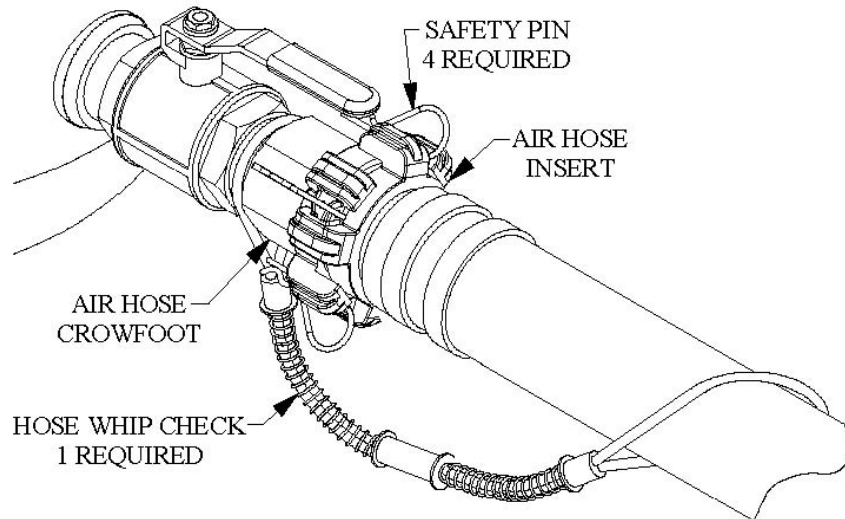


Figure 8.1 – Hose Connection Disconnect Protection

- 8.9. 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 3.9 and reference OSHA 29 CFR 1910 Subpart I.

▲ WARNING

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

- 8.10. 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.

- 8.11. Maintenance Schedule Quick Reference Chart

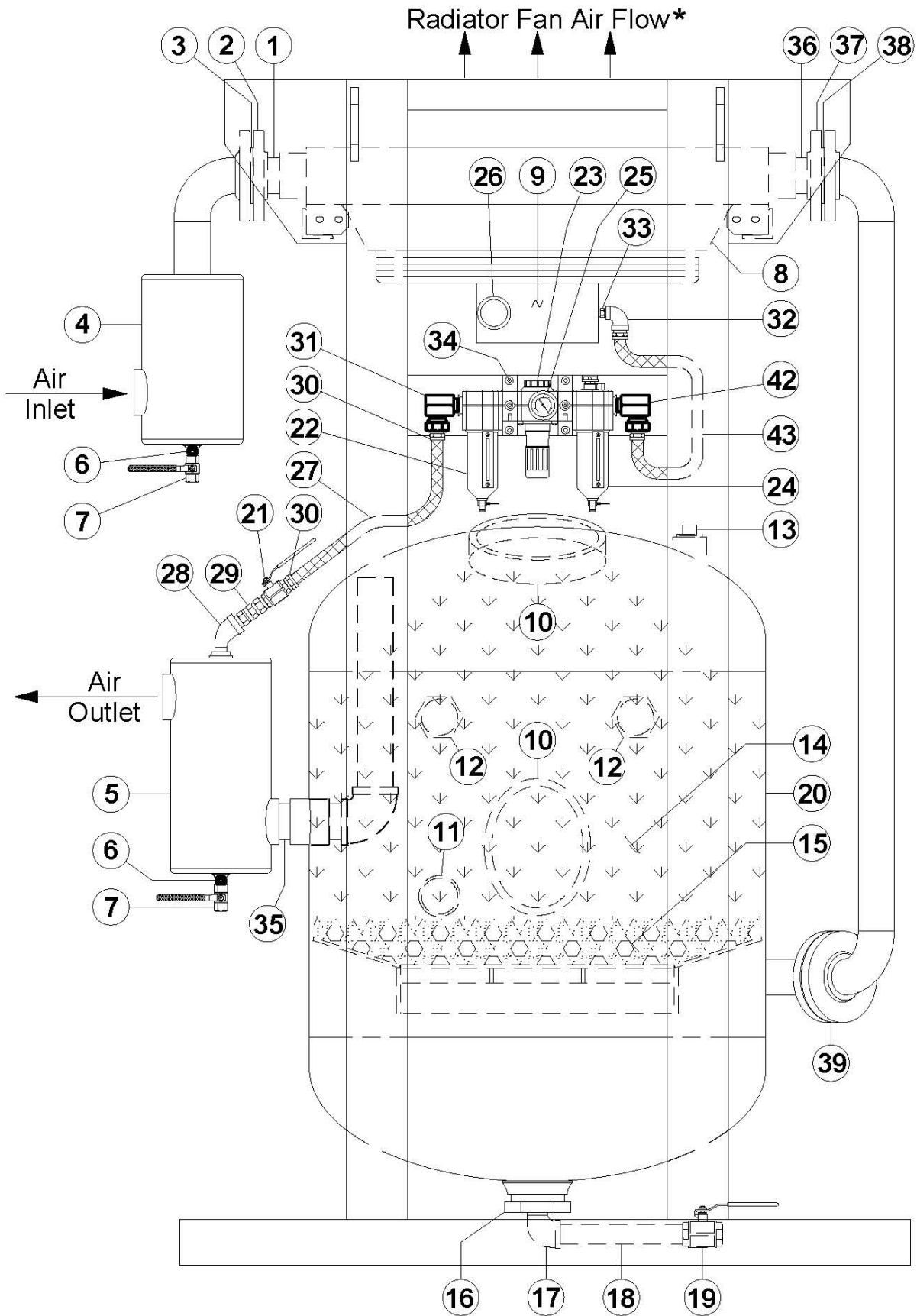
AIRPREP AIR DRYER SYSTEM MAINTENANCE SCHEDULE

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
Deliquescent/ Desiccant	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 8.8	X			
Personal Protective Equipment	Check condition of all personal protective equipment See Section 3.9 and 8.9	X			
Warning Decals	Check the condition of warning decals. See Sections 0.0 and 8.10			X	

9.0 Drawings and Parts Lists

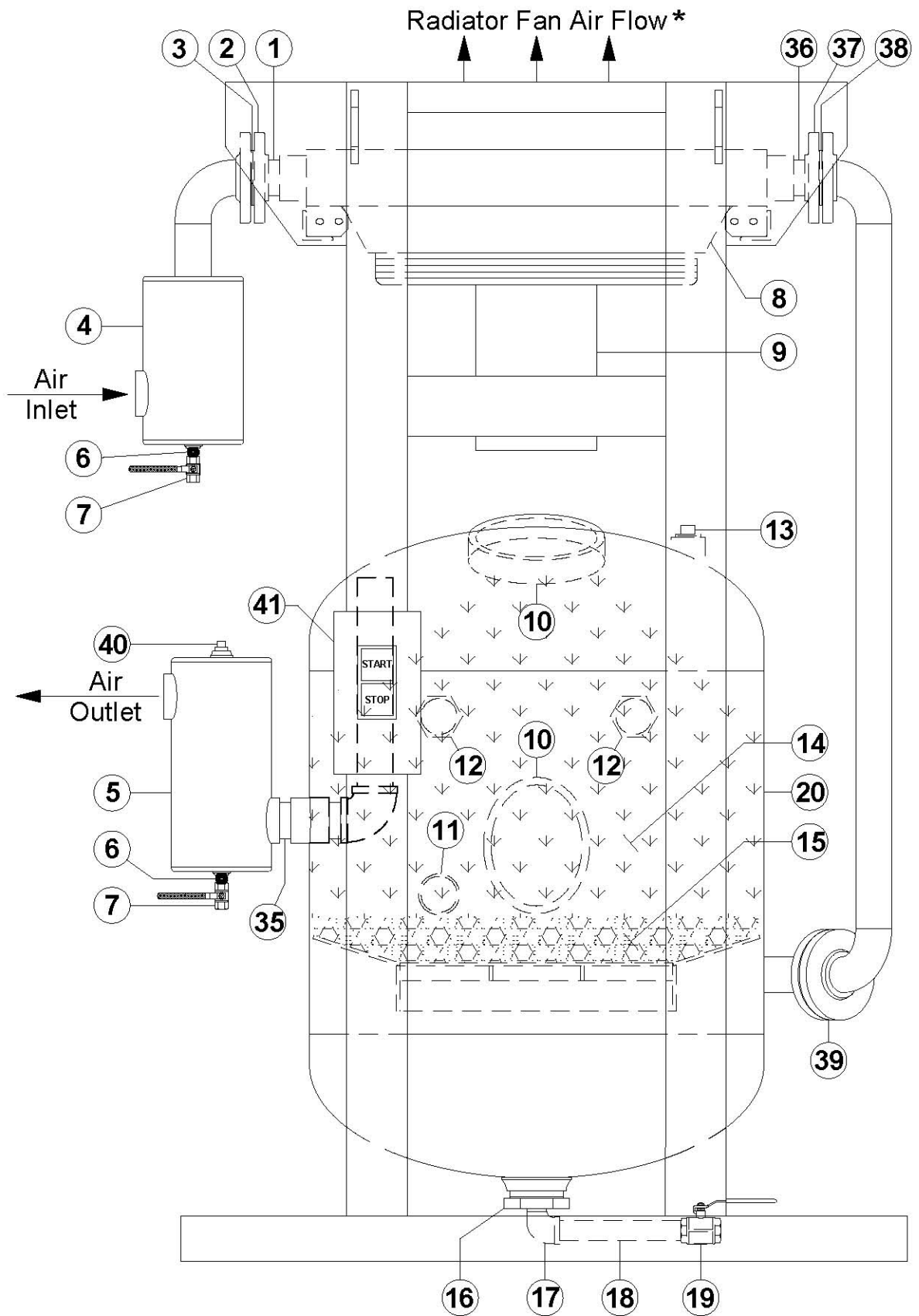
The following pages contain drawings representing typical blast control systems and components. Determine the type of control system the abrasive blast system is equipped with (pneumatic or electric controls) then reference the appropriate drawing and parts list to determine the required parts. To insure the proper operation of the AirPrep System only use Schmidt® original factory replacement parts furnished by an authorized Schmidt distributor. See Section 1.38 and Section 12.2.12.

9.1 AIR DRYER SYSTEM (WITH AIR MOTOR)
 (system may vary from drawing depending on size)



*Air flow on 250 cfm units is downward.

9.2 AIR DRYER SYSTEM (WITH ELECTRIC MOTOR)
 (system may vary from drawing depending on size)



*Air flow on 250 cfm units is downward.

9.3 PARTS LIST (ADS 250)

This section contains a parts breakdown covering all the major components which may require maintenance during operation of the AIR DRYER SYSTEM. The major items identified in the parts list are found on the drawings in Section 9.1 and 9.2. Refer to these drawings as needed while reading this manual. In addition, repair kits to rebuild these items are identified, and drawings are provided to aid in disassembly and installation of new parts (if applicable).

AIR DRYER 250 CFM (Part number: 1310-021 / 1310-022)

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1.	3029-007-99	Nipple, 1-1/4" x close
2.	3000-007	90° Elbow, 1-1/4"
	3029-007-99	Nipple, 1-1/4" x close
3.	3029-007-10	Nipple TBE, 1-1/4" x 2-1/2"
4.	2302-207-50	Air Filter, 1 1/4" 50 micron
	2401-507	Ball Valve, 1-1/4" full port
	3029-007-11	Nipple, 1-1/4" x 3"
	4211-107	Crowfoot, 4-lug 1-1/4" FNPT
5.	3029-007-11	Nipple TBE, 1-1/4" x 3"
	3000-007	90° Elbow, 1 1/4"
	3029-007-99	Nipple TBE, 1-1/4" x close
	2302-207-50	Air Filter, 1 1/4" 50 micron
	2401-507	Ball Valve, 1-1/4" full port
	4211-107	Crowfoot, 4-lug 1-1/4" FNPT
6.	---	---
7.	---	Air filter drain petcock
8.	1300-020-02	Aftercooler radiator 250 cfm
9.	1300-020-03	Air motor
	1300-020-99	Air motor kit
	1300-020-12	Fan Assembly
	1300-020-13	Fan guard
	1300-020-15	Fan shroud
	1300-020-09	Electric motor, 115V/208-230V
	1300-020-11	Electric motor, 208-230V/460V
10.	7000-001-11	Handway crab assembly
	7000-001-06	Handway gasket, 6" x 8"
11.	3014-011	Plug, 3"
12.	7064-009	Sight glass, 2"
13.	3014-007	Plug, 1-1/4"
14.	Furnished by user	Deliquescent/desiccant tablets
15.	1310-000-01	Air dryer bed marbles
16.	3026-111-04	Bushing, 3" x 1/2"
17.	3006-104	90° Street elbow, 1/2" galv.
18.	3029-104-11	Nipple, 1/2" x 3" galv.
19.	2401-504	Ball valve, 1/2" full port
20.	1310-020-01	250 Dryer vessel
21.	2401-504	Ball valve, 1/2" full port
22.	2302-204-50	Air filter, 1/2" 40 micron
	2302-204-99	Repair kit, 1/2" air filter
23.	2003-004	Air regulator, 1/2" relieving
	2003-004-99	Repair kit, 1/2" air regulator
24.	2304-004	Air lubricator, 1/2"
	2304-004-99	Repair kit, 1/2" air lubricator
25.	2010-009-01	Pressure gauge, 0-160 psi
26.	2011-004-01	Muffler, 1/2"
27.	4101-004-01	Hose, push-on 1/2"
28.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
29.	3031-304-04	Hex nipple, 1/2" x 1/2"
30.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
31.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
32.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
33.	---	---
34.	7010-503-06	Hex bolt, 1/4" UNC x 1" lg.
	7027-502-01	Flat washer, 1/4"
	7019-503	Nylock nut, 1/4" UNC
35.	3029-007-11	Nipple, 1-1/4" x 3"
36.	3029-007-14	Nipple, 1-1/4" x 5"
37.	3000-007	90° Elbow, 1-1/4"
38.	---	---
39.	3000-007	90° Elbow, 1-1/4"
	3029-007-13	Nipple, 1-1/4" x 4"
	7003-007	Flange, threaded 150 psi 1-1/4"
	7003-007-01	Flange gasket, 150 psi 1-1/4"
	7003-006-02	Stud w/nuts, 1/2" x 2-3/4"
40.	3014-004	Plug, 1/2"
41.	7135-021	Motor starter, 115-230 volt
	7135-008	Motor starter, 208-460 volt
42.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
43.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
	4101-004-01	Hose, push-on 1/2"

9.4 PARTS LIST (ADS 400)

This section contains a parts breakdown covering all the major components which may require maintenance during operation of the AIR DRYER SYSTEM. The major items identified in the parts list are found on the drawings in Section 9.1 and 9.2. Refer to these drawings as needed while reading this manual. In addition, repair kits to rebuild these items are identified, and drawings are provided to aid in disassembly and installation of new parts (if applicable).

AIR DRYER 400 CFM (Part number: 1310-041 / 1310-042)

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1.	3029-009-99	Nipple, 2" x close
2.	7003-009	Flange, threaded 150 psi 2"
3.	7003-009-01	Flange gasket, 2"
	7003-009-02	Stud w/ nuts, 5/8" x 3-1/4"
4.	1200-999-38	Moisture trap, 400 inlet
5.	1200-999-40	Moisture trap, 400 outlet
6.	3031-312-02	Hex nipple, 1/4" x 1/4"
7.	2401-502	Ball valve, 1/4" full port
8.	1300-040-02	Aftercooler radiator 400 cfm
9.	1300-040-03	Air motor
	1300-040-99	Air motor kit
	1300-040-12	Fan Assembly
	1300-040-13	Fan guard
	1300-040-15	Fan shroud
	1300-040-09	Electric motor, 115V/208-230V
	1300-040-11	Electric motor, 208-230V/460V
10.	7000-001-11	Handway crab assembly
	7000-001-06	Handway gasket, 6" x 8"
11.	3014-011	Plug, 3"
12.	7064-009	Sight glass, 2"
13.	3014-007	Plug, 1-1/4"
14.	Furnished by user	Deliquescent/desiccant tablets
15.	1310-000-01	Air dryer bed marbles
16.	3026-111-06	Bushing, 3" x 1" galv.
17.	3006-106	90° Street elbow, 1" galv.
18.	3029-106-15	Nipple, 1" x 6" galv.
19.	2401-506	Ball valve, 1" full port
20.	1310-040-01	400 Dryer vessel
21.	2401-504	Ball valve, 1/2" full port
22.	2302-204-50	Air filter, 1/2" 40 micron
	2302-204-99	Repair kit, 1/2" air filter
23.	2003-004	Air regulator, 1/2" relieving
	2003-004-99	Repair kit, 1/2" air regulator
24.	2304-004	Air lubricator, 1/2"
	2304-004-99	Repair kit, 1/2" air lubricator
25.	2010-009-01	Pressure gauge, 0-160 psi
26.	2011-002-01	Muffler, 1/4"
27.	4101-004-01	Hose, push-on 1/2"
28.	3008-004	45° Street elbow, 1/2"
29.	4201-504-04	Straight swivel, 1/2" male x 1/2" female
	3031-304-04	Hex nipple, 1/2" x 1/2"
30.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
31.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
32.	3010-104-02	90° Reducing elbow, 1/2" x 1/4" galv.
33.	3031-312-02	Hex nipple, 1/4" x 1/4"
34.	7010-503-06	Hex bolt, 1/4" UNC x 1" lg.
	7027-502-01	Flat washer, 1/4"
	7019-503	Nylock nut, 1/4" UNC
35.	3029-009-99	Nipple, 2" x close
36.	3029-009-99	Nipple, 2" x close
37.	7003-009	Flange, threaded 150 psi 2"
38.	7003-009-01	Flange gasket, 2"
	7003-009-02	Stud w/ nuts, 5/8" x 3-1/4"
39.	7003-009-01	Flange gasket, 2"
	7003-009-02	Stud w/ nuts, 5/8" x 3-1/4"
40.	3014-004	Plug, 1/2"
41.	7135-021	Motor starter, 115-230 volt
	7135-008	Motor starter, 208-460 volt
42.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
43.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
	4101-004-01	Hose, push-on 1/2"

9.5 PARTS LIST (ADS 750)

This section contains a parts breakdown covering all the major components which may require

maintenance during operation of the AIR DRYER SYSTEM. The major items identified in the parts list are found on the drawings in Section 9.1 and 9.2. Refer to these drawings as needed while reading this manual. In addition, repair kits to rebuild these items are identified, and drawings are provided to aid in disassembly and installation of new parts (if applicable).

AIR DRYER 750 CFM (Part number: 1310-071 / 1310-072)

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1.	3029-009-99	Nipple, 2" x close
2.	7003-009	Flange, threaded 150 psi 2"
3.	7003-009-01	Flange gasket, 2"
	7003-009-02	Stud w/ nuts, 5/8" x 3-1/4"
4.	1200-999-38	Moisture trap, 750 inlet
5.	1200-999-40	Moisture trap, 750 outlet
6.	3031-312-02	Hex nipple, 1/4" x 1/4"
7.	2401-502	Ball valve, 1/4" full port
8.	1300-070-02	Aftercooler radiator 750 cfm
9.	1300-040-03	Air motor
	1300-040-99	Air motor kit
	1300-070-12	Fan Assembly
	1300-070-13	Fan guard
	1300-070-15	Fan shroud
	1300-070-09	Electric motor, 115V/208-230V
	1300-070-11	Electric motor, 208-230V/460V
10.	7000-001-11	Handway crab assembly
	7000-001-06	Handway gasket, 6" x 8"
11.	3014-011	Plug, 3"
12.	7064-009	Sight glass, 2"
13.	3014-007	Plug, 1-1/4"
14.	Furnished by user	Deliquescent/desiccant tablets
15.	1310-000-01	Air dryer bed marbles
16.	3026-111-06	Bushing, 3" x 1" galv.
17.	3006-106	90° Street elbow, 1" galv.
18.	3029-106-15	Nipple, 1" x 6" galv.
19.	2401-506	Ball valve, 1" full port
20.	1310-070-01	750 Dryer vessel
21.	2401-504	Ball valve, 1/2" full port
22.	2302-204-50	Air filter, 1/2" 40 micron
	2302-204-99	Repair kit, 1/2" air filter
23.	2003-004	Air regulator, 1/2" relieving
	2003-004-99	Repair kit, 1/2" air regulator
24.	2304-004	Air lubricator, 1/2"
	2304-004-99	Repair kit, 1/2" air lubricator
25.	2010-009-01	Pressure gauge, 0-160 psi
26.	2011-002-01	Muffler, 1/4"
27.	4101-004-01	Hose, push-on 1/2"
28.	3008-004	45° Street elbow, 1/2"
29.	4201-504-04	Straight swivel, 1/2" male x 1/2" female
	3031-304-04	Hex nipple, 1/2" x 1/2"
30.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
31.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
32.	3010-104-02	90° Reducing elbow, 1/2" x 1/4" galv.
33.	3031-312-02	Hex nipple, 1/4" x 1/4"
34.	7010-503-06	Hex bolt, 1/4" UNC x 1" lg.
	7027-502-01	Flat washer, 1/4"
	7019-503	Nylock nut, 1/4" UNC
35.	3029-009-99	Nipple, 2" x close
36.	3029-009-99	Nipple, 2" x close
37.	7003-009	Flange, threaded 150 psi 2"
38.	7003-009-01	Flange gasket, 2"
	7003-009-02	Stud w/ nuts, 5/8" x 3-1/4"
39.	7003-009-01	Flange gasket, 2"
	7003-009-02	Stud w/ nuts, 5/8" x 3-1/4"
40.	3014-004	Plug, 1/2"
41.	7135-022	Motor starter, 115-230 volt
	7135-008	Motor starter, 208-460 volt
42.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
43.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
	4101-004-01	Hose, push-on 1/2"

9.6 PARTS LIST (ADS 950)

This section contains a parts breakdown covering all the major components which may require maintenance during operation of the AIR DRYER SYSTEM. The major items identified in the parts list

are found on the drawings in Section 9.1 and 9.2. Refer to these drawings as needed while reading this manual. In addition, repair kits to rebuild these items are identified, and drawings are provided to aid in disassembly and installation of new parts (if applicable).

AIR DRYER 950 CFM (Part number: 1310-091 / 1310-092)

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1.	3029-011-99	Nipple, 3" x close
2.	7003-011	Flange, threaded 150 psi 3"
3.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
4.	1200-999-39	Moisture trap, 950 inlet
5.	1200-999-45	Moisture trap, 950 outlet
6.	3031-312-02	Hex nipple, 1/4" x 1/4"
7.	2401-502	Ball valve, 1/4" full port
8.	1300-090-02	Aftercooler radiator 950 cfm
9.	1300-090-03	Air motor
	1300-090-99	Air motor kit
	1300-090-12	Fan Assembly
	1300-090-13	Fan guard
	1300-090-14	Fan mount bushing
	1300-090-15	Fan shroud
	1300-090-09	Electric motor, 115V/208-230V
	1300-090-11	Electric motor, 208-230V/460V
10.	7000-001-11	Handway crab assembly
	7000-001-06	Handway gasket, 6" x 8"
11.	3014-011	Plug, 3"
12.	7064-009	Sight glass, 2"
13.	3014-007	Plug, 1-1/4"
14.	Furnished by user	Deliquescent/desiccant tablets
15.	1310-000-01	Air dryer bed marbles
16.	3026-111-06	Bushing, 3" x 1" galv.
17.	3006-106	90° Street elbow, 1" galv.
18.	3029-106-21	Nipple, 1" x 12" galv.
19.	2401-506	Ball valve, 1" full port
20.	1310-090-01	950 Dryer vessel
21.	2401-504	Ball valve, 1/2" full port
22.	2302-204-50	Air filter, 1/2" 40 micron
	2302-204-99	Repair kit, 1/2" air filter
23.	2003-004	Air regulator, 1/2" relieving
	2003-004-99	Repair kit, 1/2" air regulator
24.	2304-004	Air lubricator, 1/2"
	2304-004-99	Repair kit, 1/2" air lubricator
25.	2010-009-01	Pressure gauge, 0-160 psi
26.	2011-004-01	Muffler, 1/2"
27.	4101-004-01	Hose, push-on 1/2"
28.	3008-004	45° Street elbow, 1/2"
29.	4201-504-04	Straight swivel, 1/2" male x 1/2" female
	3031-304-04	Hex nipple, 1/2" x 1/2"
30.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
31.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
32.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
33.	---	---
34.	7010-503-06	Hex bolt, 1/4" UNC x 1" lg.
	7027-502-01	Flat washer, 1/4"
	7019-503	Nylock nut, 1/4" UNC
35.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
36.	3029-011-99	Nipple, 3" x close
37.	7003-011	Flange, threaded 150 psi 3"
38.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
39.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
40.	3014-004	Plug, 1/2"
41.	7135-022	Motor starter, 115-230 volt
	7135-008	Motor starter, 208-460 volt
42.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
43.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
	4101-004-01	Hose, push-on 1/2"

9.7 PARTS LIST (ADS 1200)

This section contains a parts breakdown covering all the major components which may require maintenance during operation of the AIR DRYER SYSTEM. The major items identified in the parts list are found on the drawings in Section 9.1 and 9.2. Refer to these drawings as needed while reading this manual. In addition, repair kits to rebuild these items are identified, and drawings are provided to aid in

disassembly and installation of new parts (if applicable).

AIR DRYER 1200 CFM (Part number: 1310-121 / 1310-122)

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1.	3029-011-99	Nipple, 3" x close
2.	7003-011	Flange, threaded 150 psi 3"
3.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
4.	1200-999-39	Moisture trap, 1200 inlet
5.	1200-999-59	Moisture trap, 1200 outlet
6.	3031-312-02	Hex nipple, 1/4" x 1/4"
7.	2401-502	Ball valve, 1/4" full port
8.	1300-120-02	Aftercooler radiator 1200 cfm
9.	1300-120-03	Air motor
	1300-120-99	Air motor kit
	1300-120-12	Fan Assembly
	1300-120-13	Fan guard
	1300-120-14	Fan mount bushing
	1300-120-15	Fan shroud
	1300-120-08	Electric motor, 230V
	1300-120-11	Electric motor, 208-230V/460V
10.	7000-001-11	Handway crab assembly
	7000-001-06	Handway gasket, 6" x 8"
11.	3014-011	Plug, 3"
12.	7064-009	Sight glass, 2"
13.	3014-007	Plug, 1-1/4"
14.	Furnished by user	Deliquescent/desiccant tablets
15.	1310-000-01	Air dryer bed marbles
16.	3026-111-06	Bushing, 3" x 1" galv.
17.	3006-106	90° Street elbow, 1" galv.
18.	3029-106-21	Nipple, 1" x 1/2" galv.
19.	2401-506	Ball valve, 1" full port
20.	1310-120-01	1200 Dryer vessel
21.	2401-504	Ball valve, 1/2" full port
22.	2302-204-50	Air filter, 1/2" 40 micron
	2302-204-99	Repair kit, 1/2" air filter
23.	2003-004	Air regulator, 1/2" relieving
	2003-004-99	Repair kit, 1/2" air regulator
24.	2304-004	Air lubricator, 1/2"
	2304-004-99	Repair kit, 1/2" air lubricator
25.	2010-009-01	Pressure gauge, 0-160 psi
26.	2011-004-01	Muffler, 1/2"
27.	4101-004-01	Hose, push-on 1/2"
28.	3008-004	45° Street elbow, 1/2"
29.	4201-504-04	Straight swivel, 1/2" male x 1/2" female
	3031-304-04	Hex nipple, 1/2" x 1/2"
30.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
31.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
32.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
33.	---	---
34.	7010-503-06	Hex bolt, 1/4" UNC x 1" lg.
	7027-502-01	Flat washer, 1/4"
	7019-503	Nylock nut, 1/4" UNC
35.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
36.	3029-011-99	Nipple, 3" x close
37.	7003-011	Flange, threaded 150 psi 3"
38.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
39.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
40.	3014-004	Plug, 1/2"
41.	7135-023	Motor starter, 115-230 volt
	7135-008	Motor starter, 208-460 volt
42.	4203-504-04	90° Swivel, 1/2" male x 1/2" female
43.	4200-304-04	Push-on hose insert, 1/2" x 1/2"
	4101-004-01	Hose, push-on 1/2"

9.8 PARTS LIST (ADS 1600)

This section contains a parts breakdown covering all the major components which may require maintenance during operation of the AIR DRYER SYSTEM. The major items identified in the parts list are found on the drawings in Section 9.1 and 9.2. Refer to these drawings as needed while reading this manual. In addition, repair kits to rebuild these items are identified, and drawings are provided to aid in disassembly and installation of new parts (if applicable).

AIR DRYER 1600 CFM (Part number: 1310-161 / 1310-162)

ITEM	PART NUMBER	DESCRIPTION
1.	3029-011-99	Nipple, 3" x close
2.	7003-011	Flange, threaded 150 psi 3"
3.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
4.	1200-999-43	Moisture trap, 1600 inlet
5.	1200-999-42	Moisture trap, 1600 outlet
6.	3026-008-02	Bushing, 1-1/2" x 1/4"
	3031-312-02	Hex nipple, 1/4" x 1/4"
7.	2401-502	Ball valve, 1/4" full port
8.	1300-160-02	Aftercooler radiator 1600 cfm
9.	1300-160-03	Air motor
	1300-160-99	Air motor kit
	1300-160-12	Fan Assembly
	1300-160-13	Fan guard
	1300-160-14	Fan mount bushing
	1300-160-15	Fan shroud
	1300-160-11	Electric motor, 208-230V/460V
10.	7000-001-11	Handway crab assembly
	7000-001-06	Handway gasket, 6" x 8"
11.	3014-011	Plug, 3"
12.	7064-009	Sight glass, 2"
13.	3014-007	Plug, 1-1/4"
14.	Furnished by user	Deliquescent/desiccant tablets
15.	1310-000-01	Air dryer bed marbles
16.	3026-111-06	Bushing, 3" x 1" galv.
17.	3006-106	90° Street elbow, 1" galv.
18.	3029-106-21	Nipple, 1" x 12" galv.
19.	2401-506	Ball valve, 1" full port
20.	1310-160-01	1600 Dryer vessel
21.	2401-507	Ball valve, 1-1/4" full port
22.	2302-207-50	Air filter, 1-1/4" 40 micron
	2302-207-99	Repair kit, 1-1/4" air filter
23.	2003-007	Air regulator, 1-1/4" relieving
	2003-007-99	Repair kit, 1-1/4" air regulator
24.	2304-007	Air lubricator, 1-1/4"
	2304-007-99	Repair kit, 1-1/4" air lubricator
25.	2010-009-01	Pressure gauge, 0-160 psi
26.	2011-006-01	Muffler, 1"
27.	4102-007	Air hose, 1 1/4"
28.	3006-107	90° Street elbow, 1 1/4" galv.
29.	3029-007-99	Nipple, 1-1/4" x close
30.	4205-107	Hose insert, swivel 1-1/4"
	4205-107-99	Hose swivel gasket, 1"
	4228-509	Hose clamp, 1-1/4"
	3029-007-99	Nipple, 1-1/4" x close
31.	3006-107	90° Street elbow, 1-1/4" galv.
	3000-107	90° Elbow, 1-1/4" galv.
	3029-007-99	Nipple, 1-1/4" x close
32.	3006-106	90° Street elbow, 1" galv.
33.	3029-006-99	Nipple, 1" x close
34.	7025-503-07	U-bolt, 1/4" UNC x 1-1/4" dia.
	7027-502-01	Flat washer, 1/4"
	7019-503	Nylock nut, 1/4" UNC
35.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
36.	3029-011-99	Nipple, 3" x close
37.	7003-011	Flange, threaded 150 psi 3"
38.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
39.	7003-011-01	Flange gasket, 3"
	7003-011-02	Stud w/ nuts, 5/8" x 3-3/4"
40.	3014-004	Plug, 1/2"
41.	7135-008	Motor starter, 208-460 volt
42.	3029-007-99	Nipple TBE, 1-1/4" x close
	3010-107-06	90° Reducing elbow, 1-1/4" x 1" galv.
	3029-006-99	Nipple TBE, 1" x close
	3006-107	90° Street elbow, 1 1/4" galv.
43.	4205-106	Hose insert, swivel 1"
	4205-106-99	Hose swivel gasket, 1"
	4228-508	Hose clamp, 1"
	4102-006	Air hose, 1"

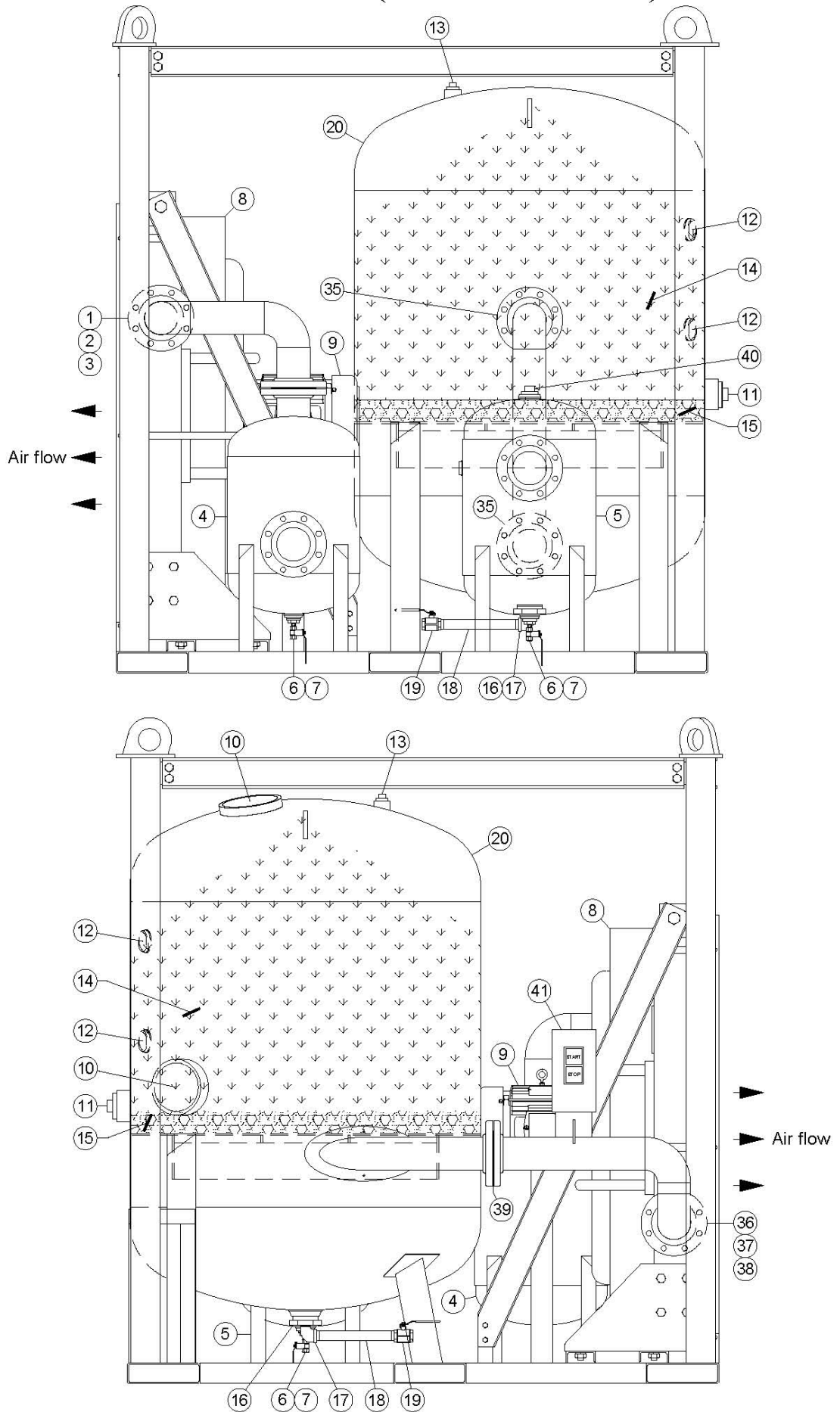
9.9 PARTS LIST (ADS 3500)

This section contains a parts breakdown covering all the major components which may require maintenance during operation of the AIR DRYER SYSTEM. The major items identified in the parts list are found on the drawings in Section 9.10. Refer to these drawings as needed while reading this manual. In addition, repair kits to rebuild these items are identified, and drawings are provided to aid in disassembly and installation of new parts (if applicable).

AIR DRYER 3500 CFM (Part number: 1310-352)

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1.	3029-013-99	Nipple, 4" x close
2.	7003-013	Flange, threaded 150 psi 4"
3.	7003-013-01	Flange gasket, 4"
	7003-013-02	Stud w/ nuts, 5/8" x 4"
4.	1200-999-85	Moisture trap, 3500 inlet
5.	1200-999-86	Moisture trap, 3500 outlet
6.	3026-008-02	Bushing, 1-1/2" x 1/4"
	3031-312-02	Hex nipple, 1/4" x 1/4"
7.	2401-502	Ball valve, 1/4" full port
8.	1300-350-16A	Aftercooler radiator 3500 cfm (without motor)
9.	1300-350-11W	Electric motor, 208-230V/460V
	1300-350-12	Fan Assembly
	1300-350-13	Fan guard
	1300-350-14	Fan mount bushing
	1300-350-15	Fan shroud
10.	7000-001-11	Handway crab assembly
	7000-001-06	Handway gasket, 6" x 8"
11.	3014-011	Plug, 3"
12.	7064-009	Sight glass, 2"
13.	3014-007	Plug, 1-1/4"
14.	Furnished by user	Deliquescent/desiccant tablets
15.	1310-000-01	Air dryer bed marbles
16.	3026-111-06	Bushing, 3" x 1" galv.
17.	3006-106	90° Street elbow, 1" galv.
18.	3029-106-21	Nipple, 1" x 12" galv.
19.	2401-506	Ball valve, 1" full port
20.	1310-350-01E	3500 Dryer vessel
35.	7003-013-01	Flange gasket, 4"
	7003-013-02	Stud w/ nuts, 5/8" x 4"
36.	3029-013-99	Nipple, 4" x close
37.	7003-013	Flange, threaded 150 psi 4"
38.	7003-013-01	Flange gasket, 4"
	7003-013-02	Stud w/ nuts, 5/8" x 4"
39.	7003-013-01	Flange gasket, 4"
	7003-013-02	Stud w/ nuts, 5/8" x 4"
40.	3014-009	Plug, 2"
41.	7135-059	Motor starter, 208-460 volt
	7135-029	Motor starter thermal unit

9.10 3500 CFM AIR DRYER SYSTEM (with Electric FanMotor)



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
7	2	2401-502	Pre-Filter/After-Filter Drain Ball Valve, 1/4" full port
9	1	1300-XXX-12	Fan Assembly
9	1	1300-XXX-14	Fan Mount Bushing (only required for systems larger than ADS 750)
10	2	7000-001-06	Handway Gasket, 6" x 8"
10	1	7000-001-11	Handway Crab Assembly, 6" x 8"
12	2	7064-009	Sight Glass, 2"
14	1	1310-000-03	Desiccant Tablets [(sufficient quantity for 2 tank refills (see Section 2.2)]
19	1	2401-5XX	Separator Tank Drain Ball Valve, full port

B) Items for Pneumatic Fan Motors Systems Only (see note below)

ITEM	QTY	PART #	DESCRIPTION
9	1	1300-XXX-03	Air Motor
9	2	1300-XXX-99	Air Motor Replacement Parts Kit
21	1	2401-5XX	Air Motor Shutoff Ball Valve, full port
22	1	2302-XXX-99	Air Filter Replacement Parts Kit
23	1	2003-XXX-99	Air Regulator Replacement Parts Kit
24	1	2304-XXX-99	Air Lubricator Replacement Parts Kit
25	1	2010-009-01	Pressure Gauge, 0-160 psi
26	1	2011-XXX-01	Air Motor Muffler
27	10ft	410X-XXX-XX	Air Hose
27	4	4235-007	Hose Clamp, Double Bolt (only required for systems larger than ADS 750)

C) Items for Electric Fan Motors Systems Only (see note below)

ITEM	QTY	PART #	DESCRIPTION
9	1	1300-XXX-XX	Electric Motor (specify system size and operating voltage)
41	1	7135-XXX	Electric Motor Starter (specify system size and operating voltage)
41	3	7135-XXX	Motor Starter Thermal Unit (specify system size and operating voltage)

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
	ADS 3500	1680	3064	4140	4800	1530	2785	3760	4320	1460	2660	3500	4015	1150	2090	2760	3200	950	1740	2350	2700

Above specifications are based on 80 to 125 psig operating pressures. Maximum pressure drop, 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)
ADS 250	1325	0.5	115/230 208-230/460	1 3	3.4 1.2	60 50/60	3250	IEC71	NO	1/2	25	30
ADS 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
ADS 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
ADS 950	4700	1.5	115/208-230 208-230/460	1 3	8.6 4.6	60	1740	145TC		1/2	60	55
ADS 1200	7000	5.0	230	1	23.0			184TC			70	100
		3.0	208-230/460	3	8.8			182TC			1	100
ADS 1600	9700	5.0	208-230/460	3	13.4			184TC				1-1/4
ADS 2000	11000	7.5	230/460		19.6	213TC	100	275				
ADS 2500	14000				25.2/12.6	1755	215TC					
ADS 3500	14000	10.0										

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 for every 50-75 cfm of air passing through the air motor.

11.3 TABLE 3 TROUBLE SHOOTING GUIDE FOR AIR MOTORS

REASON	SYMPTOM				
	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

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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Products manufactured and marketed by Axxiom Manufacturing, Inc. are protected by patents issued or pending in the United States and other countries.

The text, diagrams, and drawings contained in this manual are proprietary information intended solely for instruction in the operation of the specified equipment. Use of any text, diagrams, or drawings contained in this manual for any reason other than its intended purpose without the written consent of Axxiom Manufacturing, Inc. is strictly prohibited.

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.axxiommfg.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
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: 1-800-356-4674

Website: www.cdc.gov/niosh

National Institute of Occupational Safety and Health
Hubert H. Humphrey Bldg.
200 Independence Avenue, SW
Room 715H
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
1819 L Street, NW
6th 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: 1-412-281-2331
 Website: www.sspc.org

The Society for Protective Coatings
 40 24th Street
 Pittsburg, PA 15222-4643

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

Phone: 1-281-228-6200
 Website: www.nace.org

National Association of Corrosion Engineers
 1440 South Creek Drive
 Houston, TX 77084

12.6 Table of Blast Abrasive Characteristics

Abrasive Type	Hardness (Mohs)	Grain Shape	Density Lbs/ft ³	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	100	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

13.0 Blasting Data

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

NOZZLE SIZE		NOZZLE PRESSURE						
		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 SIZE		NOZZLE PRESSURE						
		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 125 psi although high pressure units rated for 150 psi are available on request.