RSM Technologies, Inc.

BlueCHIEF™ System

Operator's Manual

IMPORTANT

Please read this Operator's Manual carefully
before using the RSM Thousand Series™ BlueCHIEF™ System

Table of Contents

Conventions

Text Conventions

To convey information readily and consistently, certain text conventions are used throughout this manual. These text conventions are as follows:

Numbered lists — To indicate procedures that should be performed in order.

1. **Remove the plug from the hardener (red) inlet connection.**
2. **Remove the cap from the hardener feed line.**
3. **Store the cap in a safe place so it is available when the system is shutdown.**

Bold typeface — To emphasis any term or component that is being described.

Fluid connections are color-coded for easy identification. Connections for component A, the **hardener**, are **red**. Connections for component B, the **resin**, are **blue**.

Italics — To indicate another section of this manual that should be referenced.

Refer to the *Troubleshooting* chapter for information to resolve problems during operation.

Symbols

Before operating the BlueCHIEF, it is essential that the warnings, cautions, and safety requirements contained in this manual are read and understood by the operator.

Certain symbols are used throughout this manual to provide a ready visual reference. These symbols are as follows:

Provides additional information that may be helpful.

Indicates important information that must be reviewed and understood.

Indicates a possible hazardous situation that, if not avoided, may result in personal injury and/or in damage to the equipment.

Indicates a possible hazardous situation that, if not avoided, may result in death or serious injury.

Injection Hazard. Indicates a possible hazardous situation. Fluid injected into the skin or splashed in the eyes or on the skin can cause serious injury.

Injection Hazard. Indicates a possible hazardous situation. Fluid injected into the skin is a serious hazard.

Moving Parts Hazard. Indicates a possible hazardous situation. Keep hands away from moving parts.

Fire Hazard. Indicates a possible hazardous situation. Equipment must not be operated in a poorly ventilated area or near open flames.

Explosion Hazard. Indicates a possible hazardous situation. Stop spraying immediately if there is any static sparking while using the equipment.

Shock Hazard. Indicates a possible hazardous situation. Equipment must be properly grounded.

Toxic Fumes Hazard. Indicates a possible hazardous situation. Always wear protective eyewear, gloves, clothing, and respirator.

Warning Labels

Certain warning labels are placed on the BlueCHIEF:

Warning. (Need listing of all warning labels on the system.)

.

Chapter 1 Introduction

Welcome

Welcome to RSM Technologies, Inc. BlueCHIEF system.

RSM Technologies, Inc. develops and provides specialty elastomeric coatings serving industry and government. The proprietary RSM Series coatings feature high performance asphalt-enhanced elastomers that offer versatility, value, and performance for the competitive waterproofing, roofing, and corrosion control industries.

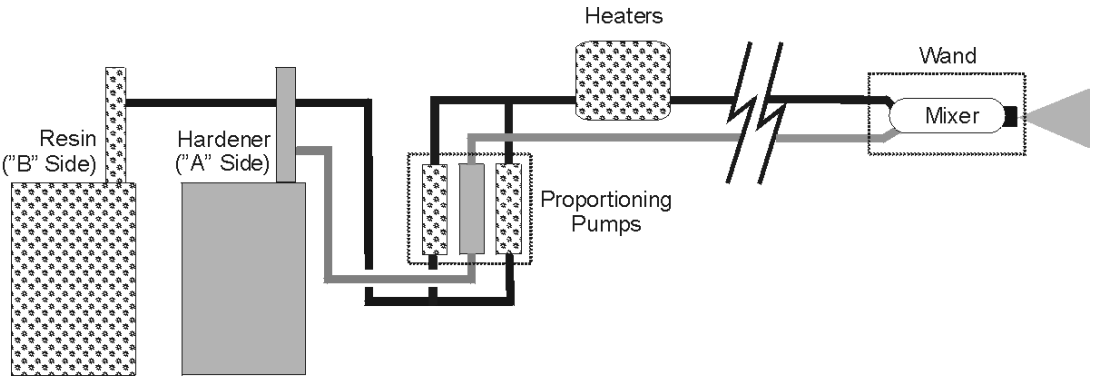
RSM Series coatings are hydrophobic, durable, flexible, and fast setting. RSM Series coatings offer cost-effective, spray applied solutions for a variety of infrastructural applications.

Overview of the BlueCHIEF System

The BlueCHIEF system is a two-component airless spray system that is designed for applying the versatile RSM Series coatings.

These coatings consist of a resin (termed the "**B**" component) and a harder (termed the "**A**" component). The resin is thick, flows poorly, and is difficult to spray when its temperature is less than 120 °F. The hardener is thin at room temperature, flows easily, and is easy to spray over a wide range of temperatures. The resin and hardener react quickly when they are mixed, and they immediately create a tough, protective coating when they are mixed at the proper ratio and sprayed on a surface.

The BlueCHIEF system is designed to deliver the correct proportions of resin and hardener to the work area in a continuous flow, mix them just before they are applied, and then apply them by spraying. This is accomplished by heating the resin (to make the resin less viscous and improve its flow) and pressurizing both components as shown below:



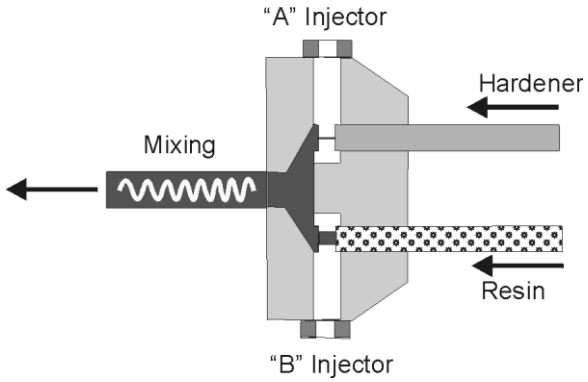
Balancing the Flow of "A" Side and "B" Side Components

During operation of the system, the delivery pressure of the "A" side and "B" side components must be equal, so that the flow of both components is **balanced**. This assures that the ratio of the "A" and "B" components remains constant during application.

NOTE

For ready identification, fluid lines and components containing the hardener component (the "**A**" side of the system) are painted **red** on the BlueCHIEF system. Fluid lines and components containing the resin component (the "**B**" side of the system) are painted **blue**.

Injectors are used in the wand to restrict the flow of the "A" and "B" side components and balance the delivery pressure. Since the "A" component is thin and tends to flow freely and the "B" component is thick and flows poorly, an injector with a small orifice is used on the "A" side to increase its delivery pressure.



A supply of injectors with different size orifices is provided with the BlueCHIEF system. If the "A" side pressure is consistently low relative to the "B" side pressure, an injector with a smaller orifice may be needed on that side. If the "A" side pressure is consistently high relative to the "B" side pressure, an injector with a larger orifice may be needed on that side.

The delivery pressures of the "A" and "B" side components must be constantly monitored during operation of the system. If the delivery pressures are not equal, a change in the ratio of "A" and "B" components can occur and the quality of the coating may be degraded. In extreme cases, cross-contamination can occur and the system may be damaged.

CAUTION

Do not operate the system if the "A" pressure and "B" pressure readings are not within ten percent of each other. Crossover can occur, with resulting serious damage to the system.

Features

- Compact design allows accessibility to even the most difficult worksites
- Low maintenance
- Highly mobile
- Fast warm-up and shut-down
- User-friendly control settings
- Adaptable for cross-industry applications
- Excellent output
- Lightweight
- Requires 10Kw generator and 20CFM compressor
- Requires a small operating crew

Safety

Our primary concern is always safety. If there is any doubt or concern about the safety of a procedure using the BlueCHIEF system, contact RSM Technologies, Inc. for information and advice.

Please take the time to carefully read this *Operator's Manual* and to carefully review all of the cautions and warnings.

The BlueCHIEF system must only be set up and operated by personnel that have been thoroughly trained and qualified by RSM Technologies, Inc. in the proper use of this equipment.

The BlueCHIEF system components must laid out as described on page 23 of this *Operator's Manual*. The proper precautions must be taken and hoses must be laid out as described.

Three operators (system operator, wand operator, and hose tender) are required to operate the system. Each operator must wear the safety gear described on page 45. The system operator and wand operator must be equipped with a reliable means of communication such as high-quality two-way radios.

The materials that are applied using the BlueCHIEF system are reactive in nature. Information in the MSDS (Material Safety Data Sheet) for each material must be reviewed and understood by the operators before setting up or using the system.

To reduce the risk of serious injury, including fluid injection, splashing in the eyes or on the skin, burns from hot fluid or heated surfaces, electric shock or property damage, always follow the safety precautions listed in the following paragraphs and in other parts of this *Operator's Manual*.

Safety Precautions

MOVING PARTS HAZARD

Moving parts, such as the air motor piston can pinch or amputate fingers.

- Do not operate the equipment with the air motor plates removed.
- Keep your body and tools clear of any moving parts when starting or operating the equipment.

TOXIC FLUID HAZARD

Hazardous fluid or toxic fumes can cause serious injury or death if splashed in the eyes or on the skin, inhaled, or swallowed.

- Know the specific hazards of the fluid you are using.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state, and national guidelines.
- Always wear protective eyewear, gloves, clothing, and respirator.

INJECTION HAZARD

Spray from the gun, hose leaks, or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Splashing fluid in the eyes or on the skin can also cause serious injury.

Fluid injected into the skin might look like just a cut, but it is a serious injury. Get immediate medical attention.

- Do not point the spray gun at anyone or at any part of the body.
- Do not put your hand or fingers over the spray tip/nozzle.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Do not “blow back” fluid; this is not an air spray system.
- Check the gun diffuser operation weekly.
- Always have the trigger guard on the spray gun when spraying.
- Be sure the gun trigger safety operates before spraying.
- Lock the gun trigger safety when you stop spraying.
- Follow the Pressure Relief Procedure on page 53 if the spray tip/nozzle clogs and whenever you: are instructed to relieve pressure; stop spraying; clean, check, or service the equipment; and install or clean the spray tip/nozzle.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Do not mend or repair any part of the hose assembly. If the hose is damaged, replace it immediately.

Safety Precautions (Continued)

FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

Improper grounding, poor ventilation, open flames, or sparks can cause a hazardous condition and result in fire, explosion, electric shock, or other serious injury.

Ground the equipment and the object being sprayed. (**???**)

- Do not use the heater with flammable liquids, such as those having flash points below 200º F (93º C).
- All electrical wiring must be done by trained and qualified personnel and comply with all local codes and regulations.
- If there is any static sparking while using the equipment, **stop spraying immediately**. Identify and correct the problem.
- Provide fresh air ventilation to avoid the build-up of flammable fumes from solvents or the fluid being sprayed.
- Do not smoke within the spray area.
- Extinguish all the open flames or pilot lights within the spray area.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Electrically disconnect all the equipment within the spray area.
- Do not turn on or off any light switch within the spray area while operating or if fumes are present.
- Do not operate a gasoline engine within the spray area.

EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture or malfunction and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call your RSM Technologies, Inc. distributor.
- Do not alter or modify this equipment.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- The maximum working pressure is shown on the pump identification plate. (**???**) Be sure that all dispensing equipment and accessories are rated to withstand the maximum working pressure of your pump. Do not exceed the maximum working pressure of the lowest rated system component.

Safety Precautions (Continued)

EQUIPMENT MISUSE HAZARD (CONTINUED)

Equipment misuse can cause the equipment to rupture or malfunction and result in serious injury.

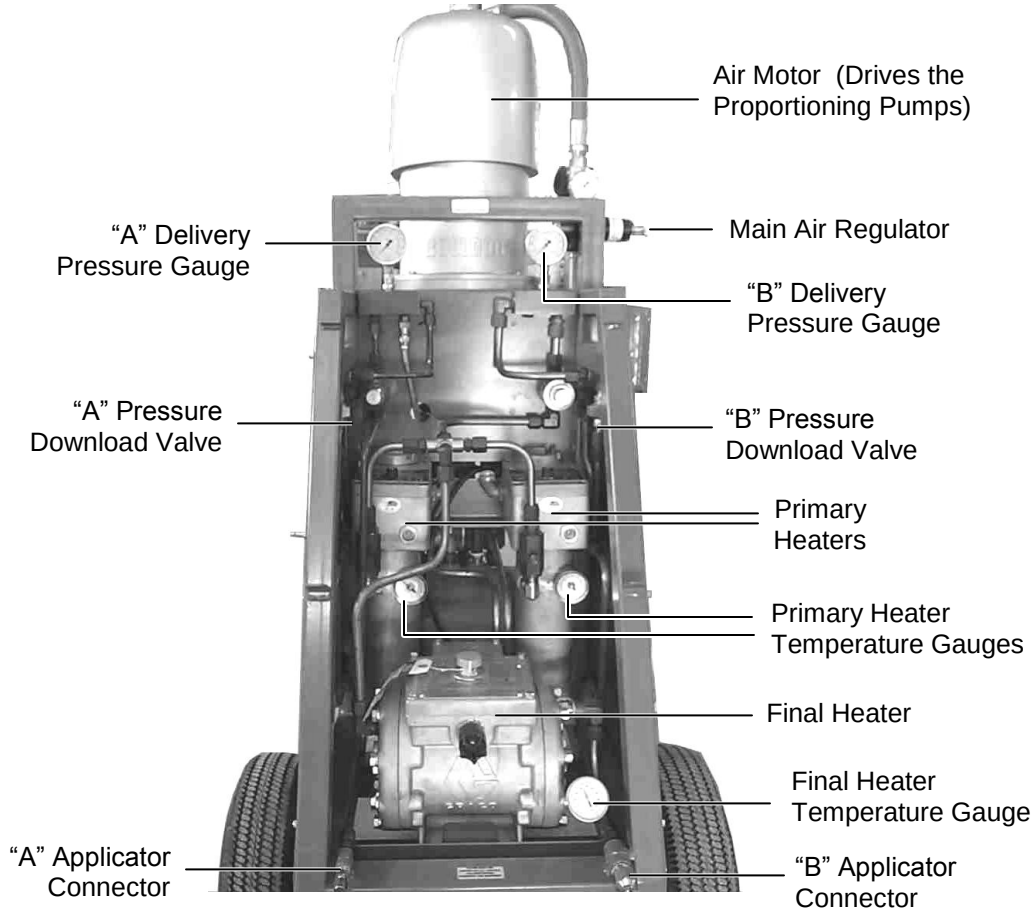
- Never operate the pump without the automatic pressure relief valves and drainage kits installed. These valves relieve fluid pressure through a drain port at the bottom of the valve if the displacement pump pressure exceeds the working pressure.
- Do not lift pressurized equipment.
- Use only approved hoses. Do not remove hose spring guards, which help protect the hose from rupture caused by kinks or bends near the couplings. Route the hoses away from the traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not expose hoses to temperatures above 180º F (82º C) or below –40º F (–40º C).
- Do not use the hoses to pull the equipment.
- Use only fluids and solvents that are recommended by RSM Technologies, Inc. Obtain, read, and understand the Material Safety Data Sheet (MSDS), including applicable cautions and warnings, for each fluid and solvent that is used.
- Comply with all applicable local, state, and national fire, electrical and other safety regulations.
- Do not touch the heater during operation; it is very hot.
- Do not leave hoses outside. Hoses are not waterproof.
- Protect the BlueCHIEF and component drums from the elements.

Chapter 2 Description

Overview

All user-serviceable components of the BlueCHIEF system are readily accessible from the front, sides, or rear of the machine.

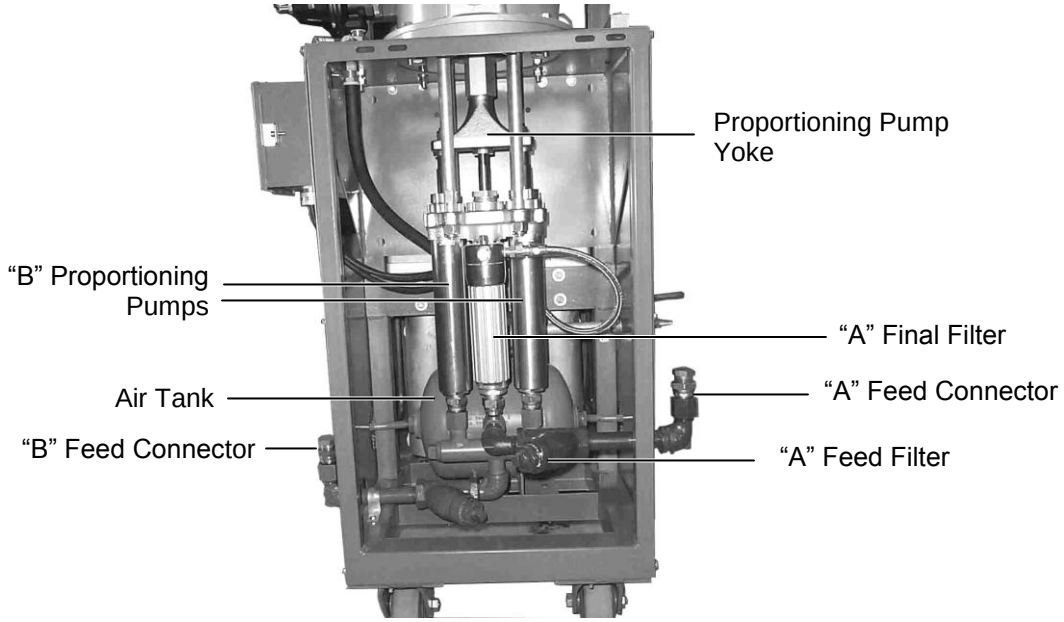
The pressure gauges, temperature gauges, and heaters are accessible from the front:



NOTE

Use of the main air regulator is described on page 15. Use of the pressure gauges, temperature gauges, and heater controls is described on page 17 and page 18.

The feed connectors, filters, and proportioning pumps are accessible from the rear:



NOTE

The "A" proportioning pump is located directly behind the "A" final filter. It is not visible in the photograph.

CAUTION

The proportioning pumps cannot be serviced by the operator.