

# **PFRM5 MANUAL**

**(Pump-Filter-Regulator-Manifold Assembly)**

**Manual Number: MS014**  
**Release Date: 12/2012**

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This manual was written and designed at Valco Cincinnati, Inc., 411 Circle Freeway Drive, Cincinnati, Ohio 45246.

Part Number: MS014

Printed in the USA

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# Declaration of Conformity

(According to EN 45014)



**Manufacturer:**

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calle G, n. 34  
31160 Orcoyo  
Navarra, Spai

*declares that the product:*

**Product Name:**

PFRM5 Manual

complies with the following Council Directives:

**Safety of Machinery:**

2006/42/EC

**Low Voltage Equipment:**

2006/95/EC

**EMC:**

2004/108/EC

*and conforms to the following standards:*

**Safety:**

EN60204-1:2006  
EN13849-1

**Risk:**

EN14121-1:2007

**EMC Emissions:**

EN61000-6-4:2007  
EN61000-4-2

**EMC Immunity:**

EN61000-6-2:2005  
EN61000-4-3  
EN61000-4-4  
EN61000-4-5  
EN61000-4-6  
EN61000-4-8  
EN61000-4-11

**Place and Date:**

Cincinnati, Ohio USA  
CE Mark first fixed 2006

**Signature:**

David H. Swedes,  
Director of Engineering &  
Manufacturing

This Declaration of Conformity has been generated electronically and is legally binding without signature



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# TABLE OF CONTENTS

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<b>Section 1 - Introduction</b> .....	<b>1-1</b>
<b>Section 2 - Safety and Use</b> .....	<b>2-1</b>
<i>Read Thoroughly Before Handling Equipment</i> .....	2-1
<i>Symbols</i> .....	2-1
<i>Owner Responsibilities</i> .....	2-3
<i>Limitations of Use</i> .....	2-4
<i>Installation/Startup/Use Safety Information</i> .....	2-4
<i>Shut Down Safety Information</i> .....	2-5
<i>Hot-Melt-Specific, General Safety Information</i> .....	2-6
What to Do if Contact with Hot Adhesive Occurs .....	2-7
What to Do if Inhalation of Adhesive Fumes Occurs .....	2-7
What to Do if Adhesive-Related Fire or Explosion Occurs .....	2-8
<i>Hose Safety Information</i> .....	2-9
<b>Section 3 - Specifications</b> .....	<b>3-1</b>
<b>Section 4 - Part Number List</b> .....	<b>4-1</b>
<i>How to Order Parts</i> .....	4-1
<i>PFRM5</i> .....	4-2
<i>Kits</i> .....	4-4
<b>Section 5 - Warranty</b> .....	<b>5-1</b>
<i>Warranty Information</i> .....	5-1
Cold Glue Equipment and Electronic Controls .....	5-1
Hot Melt Units, Hoses, Valves, Guns, and Related Equipment ...	5-1
<b>Section 6 - Service</b> .....	<b>6-1</b>

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# SECTION 1 - INTRODUCTION

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The Pump/Filter/Regulator/Manifold Assembly (**PFRM5**) is an all-in-one Pump Combo. It consists of a 7:1 Pump, Filter, a 5:1 Regulator and a four (4) port Manifold. The **PFRM5** includes Valco's Balancing Regulator Technology, and can be used with up to four valves.

The **PFRM5** comes completely assembled, requiring only air and glue hose hook-up. The **PFRM5** also includes a Seal/Shaft Cartridge Assembly, allowing quick and easy rebuilds.

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# SECTION 2 - SAFETY AND USE

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## Read Thoroughly Before Handling Equipment

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### WARNING!



Read and follow all safety precautions, warnings, cautions, and other recommendations in this manual. OTHERWISE, DEATH, PERSONAL INJURY OR EQUIPMENT DAMAGE COULD OCCUR.

Read this entire section before handling the equipment.

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## Symbols

---

The following symbols may be used on the equipment and/or in this manual.



This symbol represents a **Caution** or a **Warning**. *Cautions* draw special attention to anything that could damage equipment or cause the loss of data. *Warnings* draw special attention to anything that could injure or kill the reader. Both Cautions and Warnings are placed before the step they apply to.



This symbol represents a **Hot Surface**.



This symbol represents a **Puncture Risk**. It is usually used in regard to nozzle cleaning appliances and other sharp instruments that can cause puncture wounds and risk exposure to bloodborne pathogens and other debris.



This symbol means that **Working Gloves** are required.



This symbol means that **Goggles** are required.



This symbol indicates a **Shock Hazard**. There is a presence of non-insulated dangerous voltage within the product's enclosure. This voltage may cause electrical shock or fire.

Continued next page

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*Symbols - Continued*

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This symbol indicates the need to **Unplug/Disconnect All Power Sources** and to let them de-energize before attempting any type of work or maintenance. Remember that there can still be energy in equipment, cords, and wires even when unplugged/disconnected.



This symbol indicates the need to **Lock Out All Power Sources** and to let them de-energize before attempting any type of work or maintenance. If power is not locked out, the person working on the equipment may be injured or killed if someone unknowingly switches on the power to the equipment.



This symbol indicates a **Note**. Notes point out something of special interest or importance to the reader. They give tips, hints, and information in addition to what is necessary for the step preceding it.

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## Owner Responsibilities

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The owner of the equipment is under obligation to manage all safety information. Some examples include:

- Examine all safety materials and documents as well as jurisdictional laws and make certain all laws, recommendations, and other safety/hazard laws, certification requirements, training, and instructions are followed and kept current.
- Maintain all safety materials including tags, labels, documents, and MSDS information. Make certain they are distinct and can be read/understood. Replace any that are dirty, worn, or unreadable.
- Make sure all personnel who will handle, install, maintain, operate, fix, and work around the equipment have ready access to the safety information, training, and equipment according to jurisdictional authorities.

The owner of the equipment is under obligation to make certain that all instructions, requirements, and jurisdictional laws are met. Some examples include:

- Make sure there are regular inspections of equipment and safety devices.
- Have regular safety drills and inspections supervised by the proper authorities.
- Provide all required safety items, first aid equipment, and training.

The owner of the equipment is under obligation to make certain that all personnel who will handle, install, maintain, operate, fix, and work around the equipment are qualified, trained, and up-to-date with all information regarding the equipment. Some examples include:

- Make sure all personnel have the proper safety training, equipment, education, and abilities necessary for the job function according to safety instructions and all jurisdictional laws and regulations.
- It is strongly advised that personnel receive first-responder medical care training in case of burns, medical emergencies, or other injuries. Training should be kept up to date.
- Make sure all personnel understand and can follow safety policies and procedures for the organization as well as for the specific equipment.
- Make sure that all personnel are consistently trained, evaluated, free of alcohol and medications that may impair judgment and reflexes, and are tested for banned substances according to jurisdictional authorities.



## Limitations of Use

Read this document and all information regarding the equipment before handling the equipment. The intended use of the equipment is stated in Section 1 of this manual.

Do not use this equipment for anything other than its intended use. Do not modify, change, or alter the equipment in any way. If you are unsure of the intended use and the limitations of use for the equipment, contact your Valco Melton Representative before handling the equipment.

## Installation/Startup/Use Safety Information

Valco Melton hot melt units, cold glue units, controllers, inspection systems and all related accessories have the following universal safety precautions (this is not intended to be an exhaustive list; follow all instructions and safety precautions for the specific type of equipment involved):

### WARNING!



Only qualified personnel should install the equipment. Valco Melton strongly recommends that a Valco Melton Technician install all equipment. OTHERWISE, DEATH, PERSONAL INJURY, OR DAMAGE TO EQUIPMENT COULD OCCUR.

### WARNING!



The equipment should be installed so that it can be turned off at a location **away** from the equipment in case of injury, electrical problems, or malfunction. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

### WARNING!



Properly route all electrical wires. Never tamper with equipment. Only use approved and correct voltage, type of current, fuses, and other power supplies. Replace worn cords, hoses, etc. immediately. FAILURE TO OBSERVE WARNING MAY RESULT IN DEATH, PERSONAL INJURY, AND/OR EQUIPMENT DAMAGE.

### WARNING!



Poor ventilation, smoking, and open flames can cause overheated hot melt to ignite. Adequate ventilation must be provided. Smoking should be prohibited in the immediate vicinity of the molten adhesive. Open flames must be kept away from the area around molten adhesive. OTHERWISE, DEATH, PERSONAL INJURY, OR DAMAGE TO EQUIPMENT COULD OCCUR.

### WARNING!



Never use any Valco Melton equipment in an explosive environment. Explosive environments include, but are not limited to, solvent-based cleaners or adhesives, explosive materials, radioactive materials, etc. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

### WARNING!



Equipment will start automatically when remotely controlled by triggering devices. Be sure to disable all triggering devices, carefully release hydraulic pressure, and disconnect air pressure before servicing or working near guns, valves, and other triggered devices. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

## Shut Down Safety Information

Valco Melton hot melt units, cold glue units, controllers, inspection systems and all related accessories have the following universal safety precautions (this is not intended to be an exhaustive list; follow all instructions and safety precautions for the specific type of equipment involved):

### WARNING!



Purge the fluid pressure and the air pressure from the system before disconnecting/disabling any part of the system. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

### WARNING!



Disconnect and lock out all power before maintenance or other need to open the equipment. Only qualified personnel should open and service the control. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

### WARNING!



Equipment may still be energized even if unplugged! When making adjustments or performing checkout procedures, stay clear of any moving mechanical parts and do not touch exposed electrical equipment or electrical connectors. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

### WARNING!



Disconnect/disable all mechanical and/or electrical devices that send activation signals to the gun(s), valve(s), melter pump(s), etc. This includes pattern controls, timers, input/output signals, etc. Only qualified personnel should open and service the control. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

### WARNING!



Disable all triggering devices, relieve all residual pressure (hydraulic and air) and allow adhesive to cool before attempting to disconnect guns, hoses, valves, etc. Only qualified personnel should open and service the control. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

### WARNING!



Never point an adhesive dispensing gun, valve, hose, air hose, or anything else at yourself or another person. OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.

## Hot-Melt-Specific, General Safety Information

Valco Melton hot melt units have the following universal safety precautions **in addition to all other universal precautions previously mentioned** (this is not intended to be an exhaustive list; follow all instructions and safety precautions for the specific type of equipment involved):

**WARNING!**



**Never** process any polyurethane reactive (PUR) hot melt or solvent-based material in a Valco Melton unit unless you are certain that the unit is compatible and is marked "PUR"! Read all instructions and MSDS sheets carefully, following manufacturer's instructions, especially regarding heat levels. If you have any question as to the compatibility of a Valco Melton unit for PUR hot melt, call your Valco Melton Representative before attempting to use the unit for PUR or solvent-based materials. **OTHERWISE, HAZARDOUS FUMES, EXPLOSION, DEATH, OR PERSONAL INJURY COULD OCCUR.**

**WARNING!**



Keep pump cover and electrical enclosures closed except during setup, service, and checkout procedures. **OTHERWISE, DEATH OR PERSONAL INJURY COULD OCCUR.**

**WARNING!**



People with respiratory problems (e.g., asthma, bronchitis, etc.) should not work in the vicinity of molten adhesive. **RESPIRATORY PROBLEMS MAY BE AGGRAVATED BY THE FUMES.** Do not wear a face mask when working around molten adhesive. **THE MASK MAY TRAP THE FUMES AND DEATH OR PERSONAL INJURY COULD OCCUR.**

**WARNING!**



Keep hot melt hoses away from walkways and the moving parts of hot melt systems. **OTHERWISE, PERSONAL INJURY OR EQUIPMENT DAMAGE COULD OCCUR.**

**WARNING!**



Hot surfaces! Do not touch! Use extreme caution when refilling the unit by hand. **OTHERWISE, PERSONAL INJURY COULD OCCUR.**

**WARNING!**



Wear protective gloves and goggles at all times around all machinery, especially hot melt. **OTHERWISE, SERIOUS PERSONAL INJURY COULD OCCUR.**

**WARNING!**



Never use an open flame to heat hot melt components or adhesive. **OTHERWISE, DEATH, PERSONAL INJURY, OR DAMAGE TO EQUIPMENT COULD OCCUR.**

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***What to Do if Contact  
with Hot Adhesive  
Occurs***

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If hot adhesive comes in contact with the skin, do the following:

**WARNING!**

Do not attempt to remove heated hot melt adhesive from the skin. OTHERWISE, SEVERE PERSONAL INJURY AND DEATH COULD OCCUR.

1. Immediately immerse the contacted area in clean, cold water.



It is strongly recommended that a source of clean, cold water be provided near the hot melt work area.

2. Cover the affected area with a clean, wet compress and call the emergency medical response system (such as 911) immediately.
3. Watch for and treat the subject for signs of shock while waiting for professional help to arrive.

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***What to Do if  
Inhalation of  
Adhesive Fumes  
Occurs***

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If adhesive fumes are inhaled, immediately follow these steps:

1. Take the victim away from the immediate work area.
2. Provide victim with fresh air.
3. Call the emergency medical response system (such as 911) immediately.

---

**What to Do if  
Adhesive-Related  
Fire or Explosion  
Occurs**

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During the heating and melting process, the surface of the adhesive will be exposed to air. The mixture of polymer fumes and air can catch fire if the hot melt is overheated.

**WARNING!**



Poor ventilation, smoking, and open flames can cause overheated hot melt to ignite. Adequate ventilation must be provided. Smoking should be prohibited in the immediate vicinity of the molten adhesive. Open flames must be kept away from the area around molten adhesive. OTHERWISE, DEATH, PERSONAL INJURY, OR DAMAGE TO EQUIPMENT COULD OCCUR.

**WARNING!**



Exposed arcing may ignite the fume/air mixture. Shield all electrical equipment from melt fumes to avoid exposed arcing. OTHERWISE, PERSONAL INJURY OR EQUIPMENT DAMAGE COULD OCCUR.

**WARNING!**



Do not use a water extinguisher to extinguish the fire! OTHERWISE, PERSONAL INJURY OR EQUIPMENT DAMAGE COULD OCCUR.

If the hot melt adhesive ignites, promptly perform the following steps:

1. Sound a fire alarm.
2. Evacuate the immediate area.
3. Turn off all local electrical equipment at the source.
4. Leave the area immediately if conditions are unsafe.

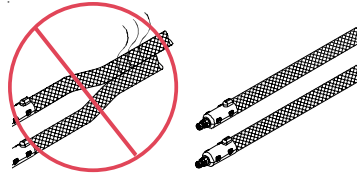
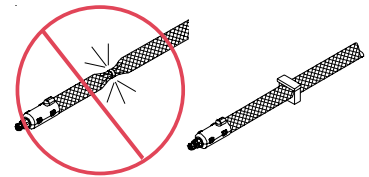
If you feel you can fight the fire **safely**, do **one** of the following:

- Smother the fire with a fire blanket.
- Aim a CO<sub>2</sub> fire extinguisher at the base of the flames.
- Aim a dry-powder fire extinguisher at the base of the flames.

## Hose Safety Information

**Do not** use bindings, wire ties, or unapproved fasteners around the hoses.

**Do** use approved wrapping (P/N KAP0434), making sure the wrapping is slightly snug but not tight.

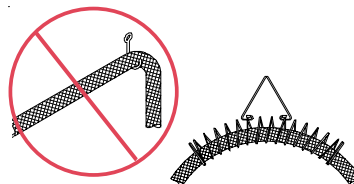
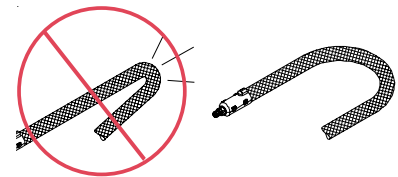


**Do not** place hoses close together.

**Do** allow at least 2 inches (5.1 cm) between hoses for proper ventilation.

**Do not** bend hoses sharply. **Do not** allow kinks or indentations in the hoses.

**Do** use a minimum bend radius of 10 inches for a 20-inch diameter coil hose.

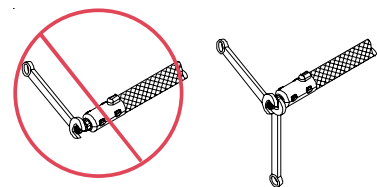


**Do not** use unapproved hooks to hang hoses. **Do not** wrap hoses over or around objects.

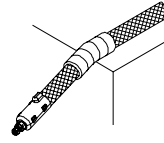
**Do** use a hose hanging kit (P/N 781xx827).

**Do not** use the “one handed/one wrench” technique to attach or remove hoses. **Do not** wrench on any surface other than the large hexagon swivel nuts.

**Do** use two hands and two wrenches to tighten or loosen connections on hoses. **Do** wrench only on large hexagon swivel nuts.



Hose Safety Information -  
Continued

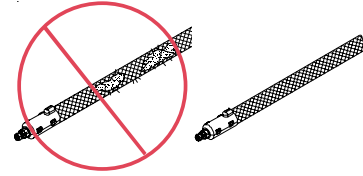


**Do not** allow hoses to rub against objects or to come into contact with sharp edges or points.

**Do** wrap the hoses in approved padding (P/N 795xx549) if the hoses must be installed where they will come into contact with objects.

**Do not** use worn, damaged, or bent hoses.

**Do** inspect all hoses regularly for damage and/or wear and replace damaged or worn hoses immediately.



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# SECTION 3 - SPECIFICATIONS

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<b>Maximum cycles per minute:</b>	20 (580mL/Min)
<b>Height:</b>	18.9" (480mm)
<b>Applied air pressure:</b>	60-80 psi
<b>Max outlet fluid pressure:</b>	400 psi



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# SECTION 4 - PART NUMBER LIST

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## How to Order Parts

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To order parts, please contact your closest Valco office by mail, phone, or Email:

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### *USA:*

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**Valco Cincinnati, Inc.**

411 Circle Freeway Drive  
Cincinnati, OH 45246

TEL: (513) 874-6550

FAX: (513) 874-3612

Email: [sales@valcocincinnatiinc.com](mailto:sales@valcocincinnatiinc.com)

Web: <http://www.valcocincinnatiinc.com>

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### *England:*

---

**Valco Cincinnati Limited**

Hortonwood 32  
Telford, TFI 7YN, England

TEL: (+44) 1952-677911

FAX: (+44) 1952-677945

Email: [sales@valco.co.uk](mailto:sales@valco.co.uk)

Web: <http://www.valco.co.uk>

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### *Germany:*

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**Valco Cincinnati GmbH**

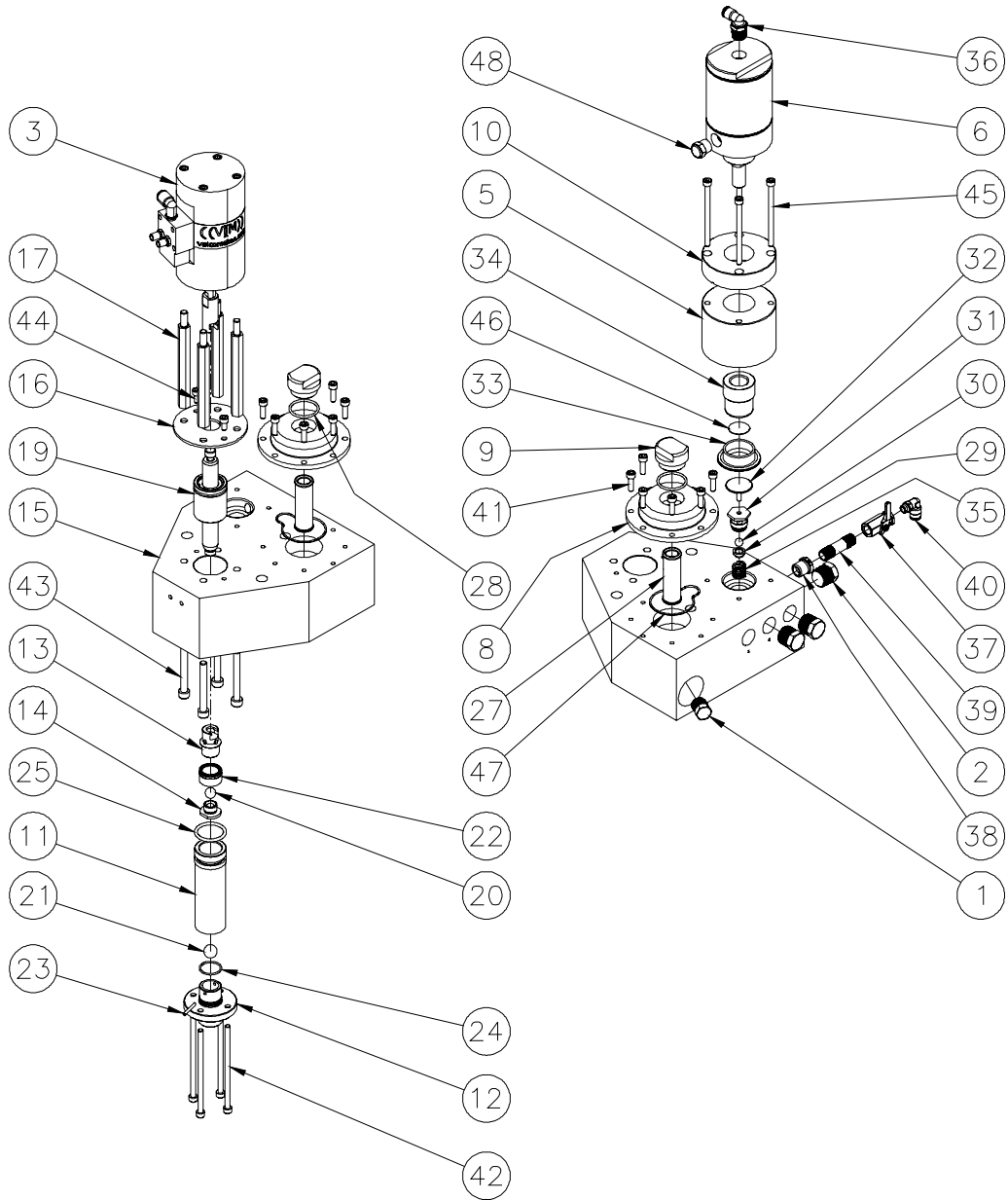
Storkower Strasse 6  
D-15749 Gallun, Germany

TEL: (+49) 337 648 700

FAX: (+49) 337 648 7070

Email: [info@valcogmbh.de](mailto:info@valcogmbh.de)

# PFRM5



PFRM5 - Continued

ITEM	PART NO.	DESCRIPTION	QTY.
1	792XX372	PLUG PIPE	1
2	792XX371	PLUG PIPE	3
3	561XX255	ASSY AIR CYLINDER	1
5	561XX248	HOUSING REGULATOR	1
6	782XX393	CYLINDER AIR	1
8	561XX245	CAP FILTER	1
9	593XX081	CAP	1
10	561XX250	CAP REGULATOR	1
11	561XX241	TUBE PUMP	1
12	561XX242	CHECK LOWER	1
13	561XX244	BODY PISTON	1
14	561XX243	CHECK PISTON	1
15	561XX237	MANIFOLD FLUID HANDLING PFRM5	1
16	561XX238	PLATE SEAL RETAINER	1
17	561XX239	STAND-OFF AIR MOTOR	4
19	561XX254	ASSY SEAL CARTRIDGE PFRM5	1
20	561XX246	BALL	1
21	561XX247	BALL	1
22	746XX228	SEAL PISTON	1
23	884XX298	PIN DOWEL	1
24	746XX124	O-RING	1
25	745XX088	O-RING	1
27	593XX020	SCREEN 529-2	1
28	745XX059	O-RING	1
29	593XX054	BALL SUPPORT	1
30	593XX053	BALL	1
31	593XX130	BALL SEAT MODIFICATION	1
32	593XX050	ACTIVATOR PIN	1
33	746XX226	DIAPHRAGM ROLLING	1
34	561XX249	PISTON REGULATOR	1
35	593XX055	SPRING	1
36	799XX786	ELBOW	1
37	703XX001	SHUT-OFF VALVE	1
38	792XX181	BUSHING	1
39	792XX328	NIPPLE, LONG	1
40	797XX476	ELBOW-SWIVEL	1
41	784XX426	SCREW	7
42	784XX576	SCREW	4
43	884XX279	SCREW	4
44	798XX069	SCREW	2

PFRM5 - Continued

ITEM	PART NO.	DESCRIPTION	QTY.
45	884XX234	SCREW	4
46	781XX818	TAPE,ADHESIVE TRANSFER	2
47	745XX122	O-RING	1
48	782XX392	SILENCER VENT	1

## Kits

**Wall Mounting Support Equipment Kit** ..... 561xx235  
**Pail Mounting Support Equipment Kit** ..... 561xx236  
**PFRM5 Rebuild Kit** ..... 561xx259

**3.5 to 1 Regulator Kit** ..... 561xx260  
**2.0 to 1 Regulator Kit** ..... 561xx261

**PFRM5 Rebuild Kit - 561xx259**

19 Seal Cartridge with Shaft ..... 561xx254  
 20 Ball, 1/2 dia, SS ..... 561xx246  
 21 Ball, 5/8 dia, SS ..... 561xx247  
 22 Piston Seal ..... 746xx228  
 24 O-Ring ..... 746xx124  
 25 O-Ring ..... 745xx088  
 28 O-Ring ..... 745xx059  
 29 Ball Support ..... 593xx054  
 30 Ball, 3/8 dia, ceramic ..... 593xx053  
 31 Ball Seat Assembly ..... 593xx130  
 32 Activator Pin ..... 593xx050  
 33 Rolling Diaphragm ..... 746xx226  
 35 Spring ..... 593xx055  
 46 Adhesive Transfer Tape ..... 781xx818  
 47 O-Ring ..... 745xx122

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# SECTION 5 - WARRANTY

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## Warranty Information

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Valco Cincinnati, Inc. warrants its equipment worldwide against defects in material and workmanship as outlined in this section.

Liability of the company is limited to repair of the product, or replacement of any part shown to be defective, and does not extend to defects caused by accidents, misuse, abuse, neglect, tampering or deterioration by corrosion. This warranty does not cover those items determined by Valco Cincinnati, Inc. to be normal wear items such as seals, O-rings, diaphragms, springs, etc.

Reconditioned equipment, unless specified otherwise at the time of purchase, will be warranted as described above for a period of ninety (90) days from the date of shipment by Valco Cincinnati.

Components purchased by Valco Cincinnati, Inc. from others for inclusion in its products are warranted only to the extent of the original manufacturer's warranty. In no event shall Valco Cincinnati, Inc. be liable for indirect or consequential damages arising out of the use of Valco Cincinnati products.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to Valco Cincinnati, Inc. for examination and verification. If claimed defect is verified, repairs or replacements will be made F.O.B. Cincinnati, Ohio, U.S.A. or ex-works Telford, U.K. If the inspection of the equipment does **not** disclose any defect of workmanship or material, any necessary repairs will be made at a reasonable charge and return transportation will be charged.

This is the only authorized Valco Cincinnati, Inc. warranty and is in lieu of all other expressed or implied warranties, representations or any other obligations on the part of Valco Cincinnati, Inc.

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### ***Cold Glue Equipment and Electronic Controls***

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The warranty for cold glue equipment and electronic controls for a period of one (1) year from the date of shipment by Valco Cincinnati, Inc.

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### ***Hot Melt Units, Hoses, Valves, Guns, and Related Equipment***

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All hot melt components except cast-in heating elements are warranted for a period of six (6) months from the date of shipment by Valco Cincinnati. Cast-in heaters carry an additional, pro-rated warranty not to exceed three (3) years from the date of shipment by ValcoMelton, a Valco Cincinnati, Inc. company.

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## SECTION 6 - SERVICE

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If a problem with your system persists, contact a ValcoMelton Technical Support representative. If your need is urgent, we encourage you to contact our corporate office in Cincinnati, Ohio, U.S.A. at (513) 874-6550. If the problem cannot be resolved, Valco Cincinnati, Inc. will promptly arrange to have a technical representative visit your facility. Any charges for a service call will be quoted at that time. Any part that fails during the warranty period shall be returned prepaid to Valco Cincinnati, Inc. by the customer for disposition.



Upon request, ValcoMelton personnel are available to repair or replace such parts at the customer's facility. Charges for this service include travel time and expenses.

If an equipment problem is the result of customer abuse, improper installation or operation, all travel time, labor, parts, and expenses will be charged to the customer.

If the responsibility for a problem cannot be absolutely determined, the customer will be charged for travel time and expenses only. No charge will be made for parts and labor.