

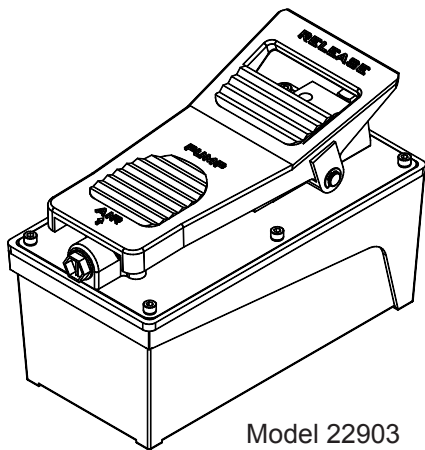
# Operating Instructions & Parts Manual



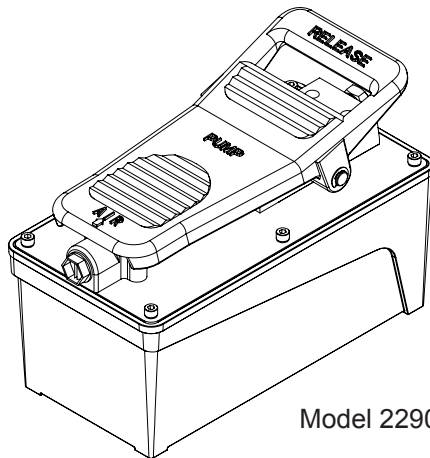
## Air Actuated Hydraulic Treadle Pump

Model  
22903  
22903B  
22905

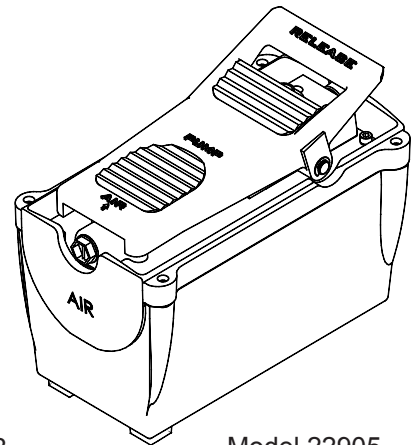
Max. Operating Pressure  
10,000 PSI  
10,000 PSI  
10,000 PSI



Model 22903



Model 22903B



Model 22905

U.S. Patent No's. 5,946,912 & 5,341,723



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

**SFA Companies**  
<http://www.omegalift.com>

Read this manual and follow all the Safety Rules and Operating Instructions before using this product.

Printed in Taiwan  
22903-M2 ver 08/10

## SAFETY and GENERAL INFORMATION

**Save these instructions.** For your safety, read and understand the information contained within. The owner and operator shall have an understanding of this product and safe operating procedures before attempting to use this product. Make certain that the operator thoroughly understands the inherent dangers associated with the use and misuse of the product. If any doubt exists as to the safe and proper use of this product as outlined in this factory authorized manual, remove from service immediately.

**Inspect before each use.** It is recommended that, prior to each use, an inspection be done by qualified personnel and that any missing or damaged parts, decals, warning / safety labels or signs be replaced with factory authorized replacement parts only. Any pump that appears to be damaged in any way, is worn, leaking or operates abnormally shall be removed from service immediately until such time as repairs can be made. Any pump that has been or suspected to have been subject to a shock load (a load dropped suddenly, causing the system pressure to exceed 10,000 PSI), shall be removed from service immediately until checked by qualified personnel. Owners and operators of this equipment shall be aware that the use and subsequent repair of this equipment may require special training and knowledge. Labels and operator's manuals are available from the manufacturer.

## PRODUCT DESCRIPTION

Air Foot Pumps are engineered to meet industry standards for performance and safety. Foot actuated pumps supply compressed hydraulic fluid to compatible applications i.e. rams, presses, spreaders, compactors and crimping machines, anywhere that 10,000 PSI (700 Bar) of fluid pressure is needed. Special skill, knowledge and training may be required for a specific task and the product may not be suitable for all the jobs described above. Unsuitable applications would include applications that call for a device to move, level or support persons, animals, hazardous materials, mobile homes/ dwellings in general, mirrors and/or plate glass, and/or to connect/secure hatches, components, etc. between bulkheads. The user must ultimately make the decision regarding suitability of the product for any given task and assume the responsibility of safety for himself and others in the work area.

**!** *To reduce the risk of personal injury and/or property damage, ensure that the rated working pressure of each pressurized attachment be equal to or greater than the rated working pressure developed by the hydraulic pump.*

**!** *Always check connections before using. Alteration of these products is strictly prohibited. Use only those adapters and attachments provided and approved by the manufacturer.*

## SPECIFICATIONS

Model Number	Usable Oil Capacity (in <sup>3</sup> )	Rated Pressure (PSI)	Output Flow Rate (in <sup>3</sup> /min)		Input Air Pressure (PSI)	Output Port Thread (Oil)	Input Port Threads (Air)
			No Load	Load			
22903	91.5	10,000	66	11	110 - 175	3/8" - 18NPTF	1/4" - 18NPT
22903B	91.5		66	11			
22905	122		65	12			

**\*22903B comes with mounting bolts**

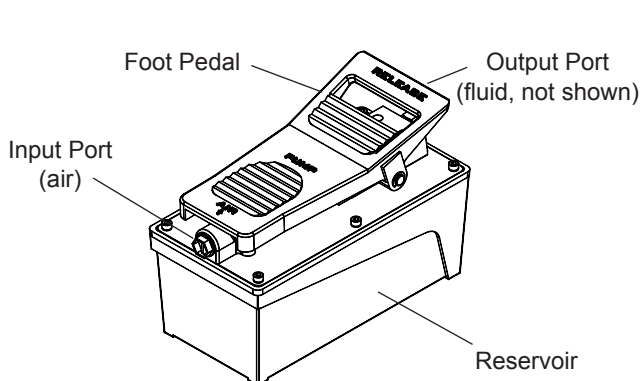


Figure 1 - Model 22903 Components

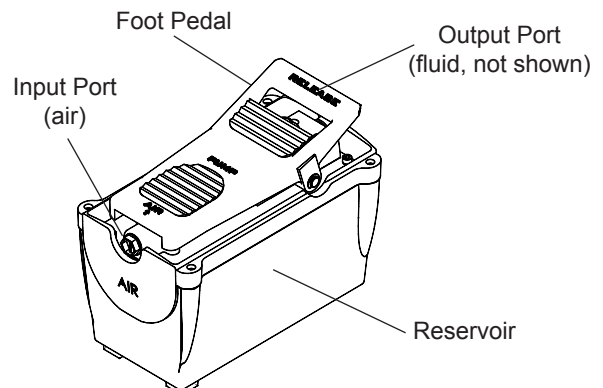




Figure 2 - Model 22905 components


## BEFORE USE AND SET UP

1. Familiarize yourself with the specifications and illustrations in this owners manual. Know your pump, its limitations and how it operates before attempting to use. Refer to specification chart on page 3 for details of oil port thread size, usable oil capacity, and more. If in doubt, contact Omega Technical Service (888) 332-6419.
2. Replace shipping plug (red color) with air vent plug (black color) before use.
3. **Air Connection:** Remove plastic cap, secure air supply threaded port connections with high grade, non-hardening pipe thread sealant. Teflon tape can be used if only one layer of tape is used and it is applied carefully, two threads back, to prevent the tape from being introduced into hydraulic system, which could cause jamming of precision-fit parts. Tighten fittings. Air input port is designed to fit popular 1/4" NPT air nipples (not included). Ensure that your air source can dedicate 7.8CFM @ 110~175 PSI to each pump operated.
4. **Hydraulic Connection:** Clean all areas around the oil port of pump and application. Inspect all threads and fitting for signs of wear or damage and replace as needed. Clean all hose ends, couplers and union ends. Remove the manifold plug, secure threaded port connections with high grade, non-hardening pipe thread sealant. Teflon tape can be used if only one layer of tape is used and it is applied carefully, two threads back, to prevent the tape from being introduced into hydraulic system, which could cause jamming of precision-fit parts. Tighten fittings, then connect to application.


 *To reduce the risk of personal injury and/or property damage, hydraulic connections must be securely fastened before building pressure in the system. Release all system pressure before loosening any hydraulic connection in the system.*

 *Always monitor pressure, load or position using suitable equipment. Pressure may be monitored by means of an optional manifold and gauge. Load may be monitored by means of a load cell and digital indicator. Correct application position can only be determined by the operator of the equipment.*

 **WARNING**



- Study, understand, and follow all instructions provided with and on this device before use.
- All WARNING statements must be carefully observed to help prevent personal injury.
- No alteration shall be made to this device.
- Always wear protective gear when operating hydraulic equipment.
- Keep hydraulic equipment away from flames and heat. Hydraulic fluid can ignite and burn. Do not operate if leaks are detected.
- **Crush Hazard.** Keep hands and feet away from loading area. Avoid pinch points or crush points that can be created by the load, cylinder, or any equipment of system.
- To avoid crushing and related injuries: NEVER work on, under or around a lifted load before it is properly supported by appropriate mechanical means. Never rely on hydraulic pressure alone to support load.

 **WARNING**

- Read and understand all warnings, instructions and owners manual information before attempting to use this equipment.
- Burst hazard exists if hose or connection pressure exceeds rated pressure. Do not exceed the rated capacity of this device.
- Use gauge or other load measuring instrument to verify load.
- Inspect hoses and connections for damage prior to use.
- Always ensure that the chosen application is stable to work on and around.
- **NEVER** work under a lifted load without adequately rated mechanical support. **ALWAYS** crib and block a load as it is raised! **DO NOT rely upon hydraulic pump pressure to support a lifted load!**
- Do not subject the pump and its components to shock loads.
- Do not connect to application which can return more oil to the reservoir than the pump reservoir can hold.
- Failure to heed these warnings may result in personal injury as well as property damage.

## OPERATION

1. To extend the cylinder, depress on the foot pedal marked "*Pump*" (horizontal portion) until desired pressure, load or position is reached.
2. To hold the cylinder in position, release the foot pedal to deactivate the pump.
3. To retract the cylinder, depress the release valve by stepping on the foot pedal marked "*Release*" (raised, stirrup shaped portion).

**Note:** Never operate a pump which is disconnected from application. If operate in this condition, the hose and connections will become pressurized. This increases burst hazard. Damage may occur to pump and its components.

## MAINTENANCE

1. Inspect hoses and connections daily. Replace damaged components immediately with factory replacement parts only.
2. Tighten connections as needed. Use non-hardening pipe thread compound when servicing connections.
3. Use only good quality hydraulic fluid. We recommend Mobil DTE 13M or equivalent.

### Adding Hydraulic Fluid

1. Depressurize and disconnect hydraulic hose from application.
2. With pump in its upright, horizontal position, remove the air vent plug located on the top plate of the reservoir.
3. Use a small funnel to fill reservoir to within 3/4" (19mm) of the opening.
4. Wipe up any spilled fluid and reinstall the air vent plug.

**Note:** Use only a good quality hydraulic oil. **Never** use brake fluid, transmission fluid, turbine oil, motor oil, alcohol, glycerin etc. Use of other than good quality hydraulic oil will void warranty and damage the pump, hose, and application.



**Never operate pump when it is disconnected from application. If operated in this condition, the hose and connections become pressurized. This increases burst hazard. Damage may occur to pump and its components.**

### Changing Hydraulic Fluid

For best performance and longest life, replace the complete fluid supply at least once per year.

1. Depressurize and disconnect hydraulic hose from application.
2. With pump in its upright, horizontal position, remove the air vent plug located on the top plate of the reservoir.
3. Use a small funnel to fill reservoir to within 3/4" (19mm) of the opening.
4. Pour used fluid into a sealable container.
5. Dispose of fluid in accordance with local regulations.
6. Fill with a good quality hydraulic oil as recommended above. Reinstall air vent plug.

### Lubrication

Use a light machine oil to lubricate pivot points, hinges etc.

### When not in use or during storage

- a. Depressurize and disconnect hydraulic hoses from application.
- b. Wipe clean, thoroughly.
- c. Store in clean, dry environment. Avoid extreme temperatures.
- d. For transportation or long storage, replace air vent plug (black color) with shipping plug (red color).
- e. Shield pump with a protective cover.

# TROUBLESHOOTING GUIDE

Symptom	Possible Causes	Corrective Action
Application does not extend, move or respond to pressurized fluid	<ul style="list-style-type: none"> <li>• Overload condition</li> <li>• Loose couplers</li> <li>• Faulty couplers</li> <li>• Pump malfunction</li> <li>• Inadequate air supply</li> </ul>	<ul style="list-style-type: none"> <li>• Remedy overload condition</li> <li>• Tighten couplers</li> <li>• Replace couplers</li> <li>• Contact service center</li> <li>• Ensure air source can dedicate 7.8 CFM @ 110~175 PSI</li> </ul>
Application responds to pressurized fluid, but system does not maintain pressure	<ul style="list-style-type: none"> <li>• Overload condition</li> <li>• Pump or valve malfunction</li> <li>• Application/connection leaking</li> </ul>	<ul style="list-style-type: none"> <li>• Remedy overload condition</li> <li>• Contact Service Center</li> <li>• Replace application/connection</li> </ul>
Application responds slower than normal	<ul style="list-style-type: none"> <li>• Loose connection or coupler</li> <li>• Restricted hydraulic line or fitting</li> <li>• Application/connection leaking</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten connection or coupler</li> <li>• Clean and replace if damaged</li> <li>• Replace application/connection</li> </ul>
Application does not return fluid to pump (i.e. cylinder will not retract)	<ul style="list-style-type: none"> <li>• Malfunctioning coupler, damaged application</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Secure load by other means. Depressurize</b> pump and hose, remove coupler and/or application, then renew or replace</li> </ul>
Application does not fully extend (cylinder or spreader)	<ul style="list-style-type: none"> <li>• Reservoir overfilled</li> <li>• Fluid level in pump is low</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Secure load by other means. Depressurize</b> pump and hose, remove application, then drain fluid to proper level</li> <li>• <b>Secure load by other means. Depressurize</b> pump and hose, remove application, then fill fluid to proper level</li> </ul>
Poor performance	<ul style="list-style-type: none"> <li>• Fluid level in pump is low</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure proper fluid level</li> </ul>

# REPLACEMENT PARTS

Available Parts: Please refer to the Parts drawing when ordering parts. Not all components of the pump are replacement items, but are illustrated as a convenient reference of location and position in the assembly sequence. When ordering parts, give Model number, serial number and description below. Call or write for current pricing: SFA Companies, 10939 N. Pomona Ave. Kansas City, MO 64153, U.S.A.  
Tel:(888)332-6419 Fax:(816)891-6599  
Omega Website: <http://www.omegalift.com>  
E-Mail: [sales@omegalift.com](mailto:sales@omegalift.com)

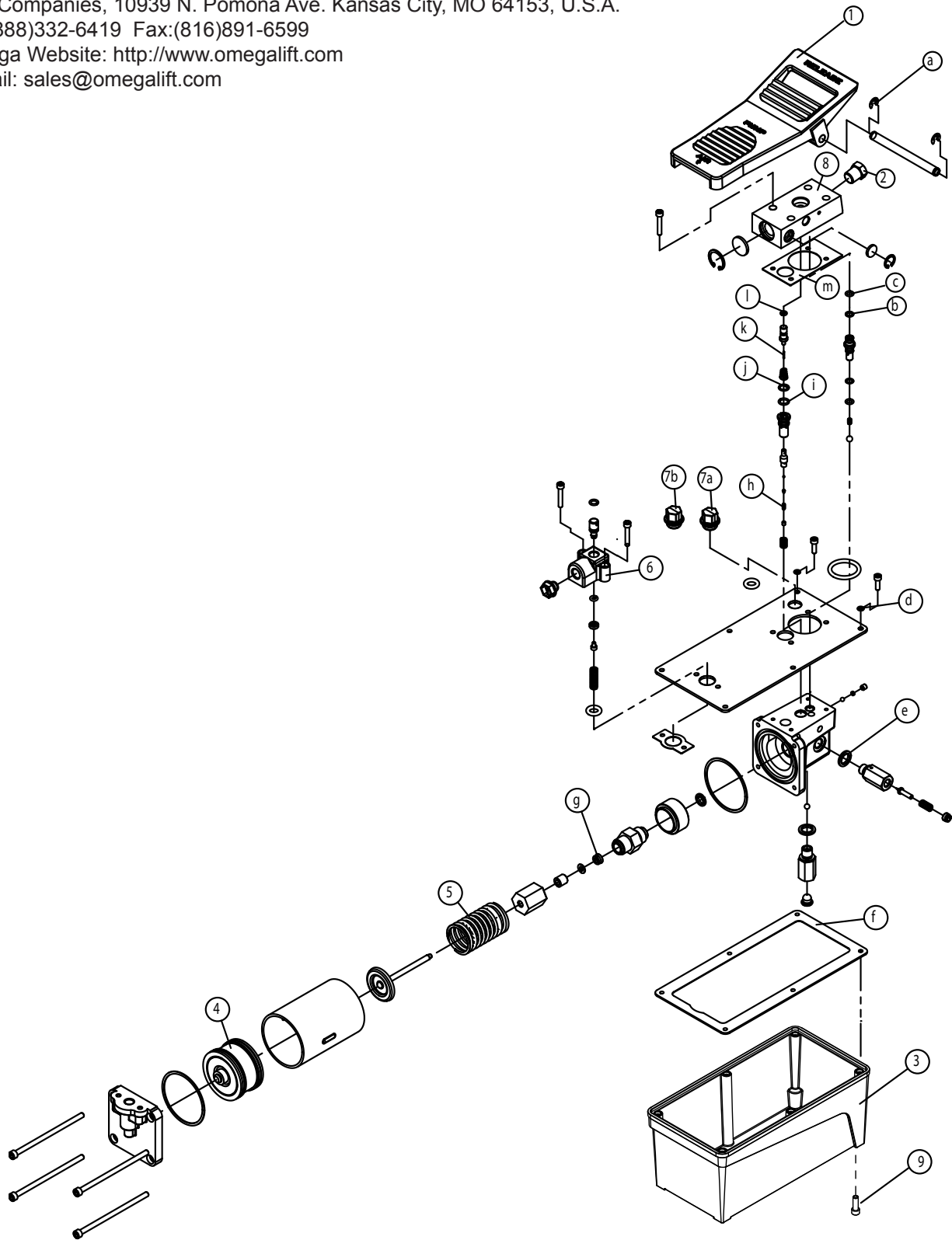


Figure 3 - Replacement Parts Illustration (Model 22903B shown)

**Model 22903, 22903B, and 22905 Replacement Parts List**

Item	Part# for 22903	Part# for 22903B	Part# for 22905	Description	Qty
1	A57-6-2001-108		A57-4-6003-100	Foot pedal	1
2	D05-6-1001-106			Manifold plug	1
3	A57-6-1601-107	A57-6-6015-109	A58-5-1602-100	Reservoir	1
4	A17-4-2100-500			Air piston assy.	1
5	512-2-0410-017			Compression spring	1
6	A57-6-5001-103			Air Entrance Base	1
7a	A57-3-5007-107			Shipping Plug (Red)	1
7b	A57-3-1900-109			Air Vent Plug (Black)	1
8	A57-6-4001-209		A57-6-6004-104	Oil Manifold	1
9	NA	649-1-0063-605	NA	Mounting Bolt	4
a-m	A57-3-9901-101	A57-3-9901-101	A58-3-9903-102	Repair kit	1

## ONE YEAR LIMITED WARRANTY

For a period of one (1) year from date of purchase, SFA Companies will repair or replace, at its option, without charge, any of its products which fails due to a defect in material or workmanship under normal usage. This limited warranty is a consumer's exclusive remedy.

Performance of any obligation under this warranty may be obtained by returning the warranted product, freight prepaid, to SFA Companies Warranty Service Department, 10939 N. Pomona Ave., Kansas City, MO 64153.

Except where such limitations and exclusions are specifically prohibited by applicable law, (1) THE CONSUMER'S SOLE AND EXCLUSIVE REMEDY SHALL BE THE REPAIR OR REPLACEMENT OF DEFECTIVE PRODUCTS AS DESCRIBED ABOVE. (2) SFA Companies SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGE OR LOSS WHATSOEVER. (3) ANY IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED TO ONE YEAR, OTHERWISE THE REPAIR, REPLACEMENT OR REFUND AS PROVIDED UNDER THIS EXPRESS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER, AND IS PROVIDED IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. (4) ANY MODIFICATION, ALTERATION, ABUSE, UNAUTHORIZED SERVICE OR ORNAMENTAL DESIGN VOIDS THIS WARRANTY AND IS NOT COVERED BY THIS WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.



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