

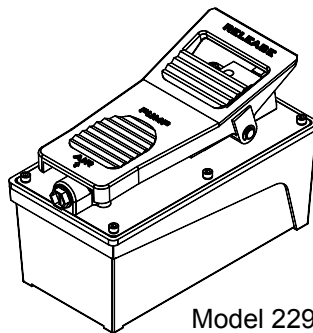
Operating Instructions & Parts Manual



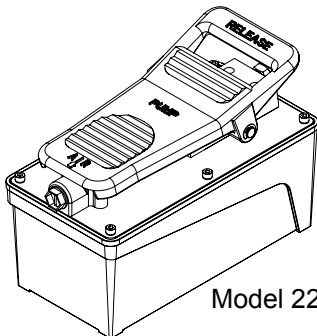
Air Actuated Hydraulic Treadle Pump

Model
22903
22903B
22905
22907

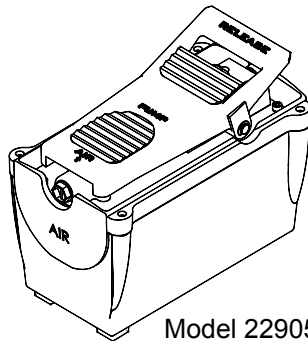
Max. Operating Pressure
10,000 PSI
10,000 PSI
10,000 PSI
10,000 PSI



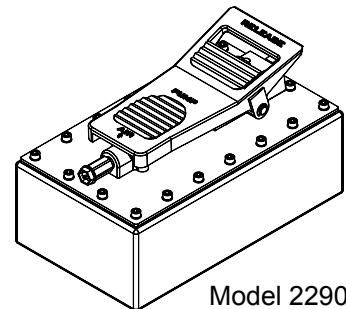
Model 22903



Model 22903B



Model 22905



Model 22907

U.S. Patent No. 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

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

SAFETY AND GENERAL INFORMATION

Save these instructions. For your safety, read, understand, and follow the information provided with and on this device before using. The owner and/or operator shall have an understanding of the device, its operating characteristics and safety operating instructions before operating the equipment. The owner and/or operator shall be aware that use and repair of this product may require special skills and knowledge. Instructions and safety information shall be read to and discussed with the operator in the operator's native language, making sure that the operator comprehends their contents, before use of this equipment is authorized. If any doubt exists as to the safe and proper use of this device, remove from service immediately.

Inspect before each use. Do not use if abnormal conditions such as cracked welds, damaged, loose or missing parts are noted. Any equipment that appears damaged in any way, is found to be worn, or operates abnormally shall be removed from service until repaired. If the equipment has been or is suspected to have been subjected to an abnormal load or shock, immediately discontinue use until inspected by a factory authorized repair facility (contact distributor or manufacturer for list of authorized repair facilities). It is recommended that an annual inspection be made by an authorized repair facility. 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.

SPECIFICATIONS

Model Number	Usable Oil Capacity (in ³)	Rated Pressure (PSI)	Output Flow Rate (in ³ /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			
22907	231.9		65	12			

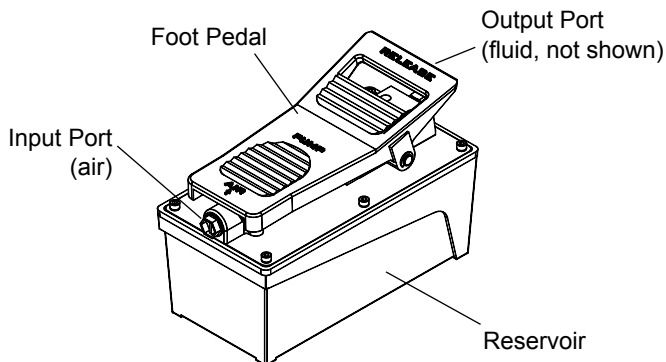


Figure 1 - Model 22903 Components
(22903B includes with mounting bolts)

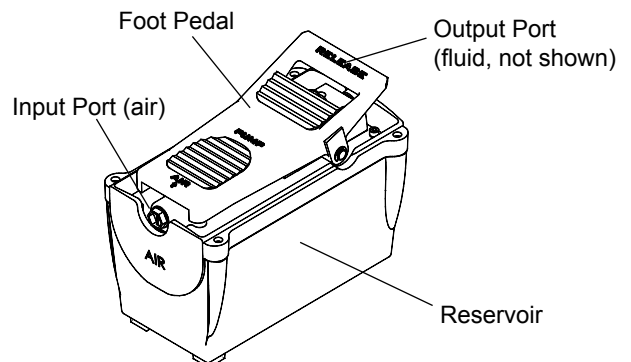


Figure 2 - Model 22905 & 22907 components
(22905 shown)

WARNING



- *Study, understand, and follow all instructions before operating this device.*
- *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.*



- *Burst hazard exists if hose or connection pressure exceeds rated pressure. Do not exceed the rated capacity of this device.*

- *Inspect hoses and connections for damage prior to use.*
- *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.*
- *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.*
- *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.*
- *Failure to heed these markings may result in personal injury and/or property damage.*

BEFORE USE

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.
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.

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).

NOTICE: *Do not operate pump when disconnected from application. If operated in this condition, hose and connections will become pressurized, increasing 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. Premium hydraulic jack oil is recommended.

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.

NOTICE: *Use only good quality hydraulic oil. Avoid mixing different types of fluid and NEVER use brake fluid, turbine oil, transmission fluid, motor oil or glycerin. Improper fluid can cause premature equipment failure and the potential for sudden and immediate loss of load. Premium hydraulic jack oil is recommended.*

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. Pour used fluid into a sealable container.
4. Dispose of fluid in accordance with local environmental regulations.
5. 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:

1. Depressurize and disconnect hydraulic hoses from application.
2. Wipe clean, thoroughly.
3. Store in clean, dry environment. Avoid extreme temperatures.
4. For transportation or long storage, replace air vent plug (black color) with shipping plug (red color).
5. 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"> • Overload condition • Loose couplers • Faulty couplers • Pump malfunction • Inadequate air supply 	<ul style="list-style-type: none"> • Remedy overload condition • Tighten couplers • Replace couplers • Contact service center • Ensure air source can dedicate 7.8 CFM @ 110~175 PSI
Application responds to pressurized fluid, but system does not maintain pressure	<ul style="list-style-type: none"> • Overload condition • Pump or valve malfunction • Application/connection leaking 	<ul style="list-style-type: none"> • Remedy overload condition • Contact Service Center • Replace application/connection
Application responds slower than normal	<ul style="list-style-type: none"> • Loose connection or coupler • Restricted hydraulic line or fitting • Application/connection leaking 	<ul style="list-style-type: none"> • Tighten connection or coupler • Clean and replace if damaged • Replace application/connection
Application does not return fluid to pump (i.e. cylinder will not retract)	<ul style="list-style-type: none"> • Malfunctioning coupler, damaged application 	<ul style="list-style-type: none"> • Secure load by other means. Depressurize pump and hose, remove coupler and/or application, then renew or replace
Application does not fully extend (cylinder or spreader)	<ul style="list-style-type: none"> • Fluid level in pump is low 	<ul style="list-style-type: none"> • Secure load by other means. Depressurize pump and hose, remove application, then fill fluid to proper level
Poor performance	<ul style="list-style-type: none"> • Fluid level in pump is low 	<ul style="list-style-type: none"> • Ensure proper fluid level

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.

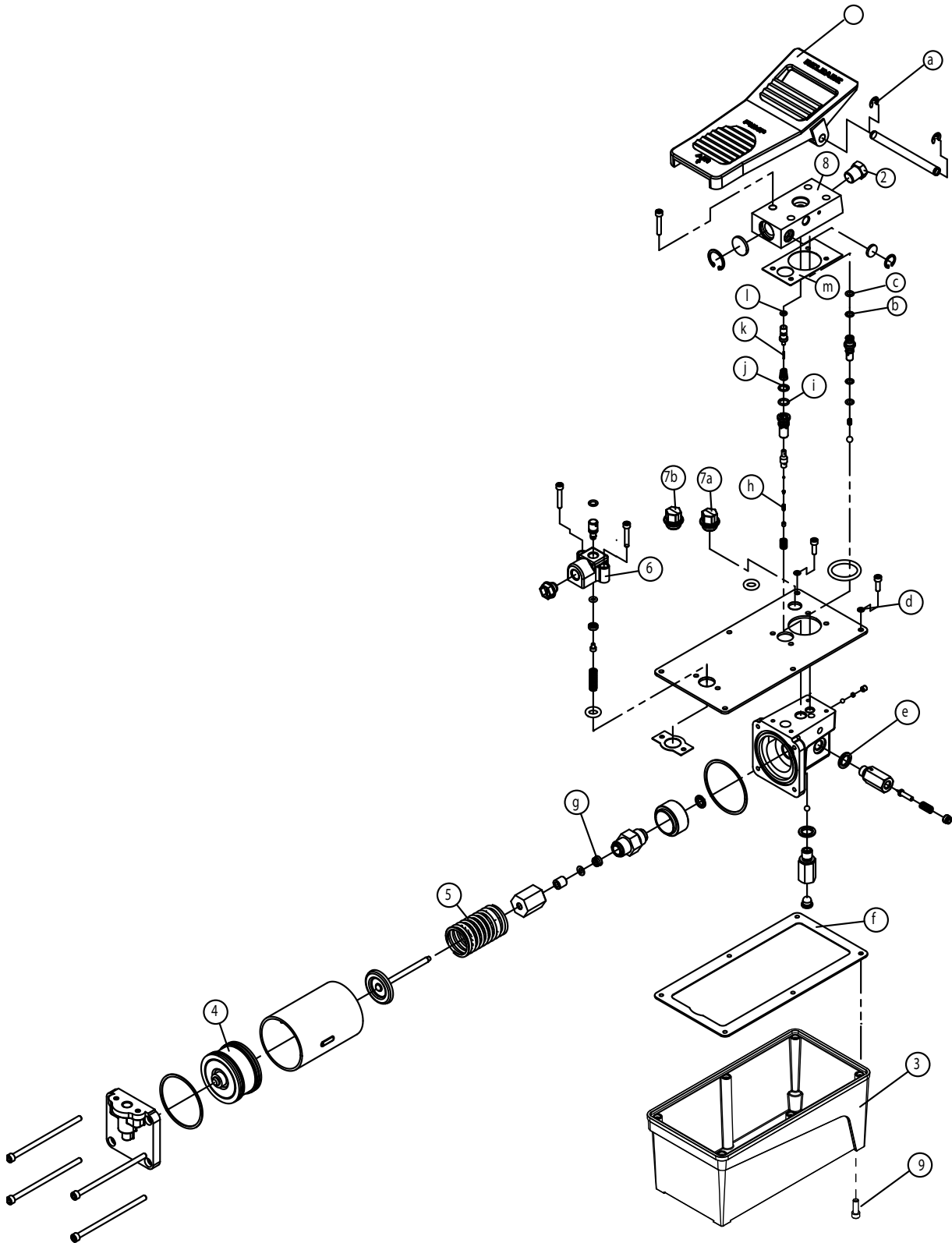


Figure 3 - Replacement Parts Illustration (Model 22903B shown)

Item	Part No. for Model				Description	Qty
	22903	22903B	22905	22907		
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	A57-6-6007-201	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	A57-3-9911-104	Repair kit (incl parts a - m)	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.

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.

