AMERICAN FORGE & FOUNDRY

MODEL: 94300

5-Ton Flat Body Ram Kit with Adapters *Owner's Manual*



WARNING:

IMPORTANT: READ THESE INSTRUCTIONS AND ALL WARNINGS PRIOR TO USING THIS EQUIPMENT. UNDERSTAND ALL OPERATING PROCEDURES, SAFETY WARNINGS AND MAINTENANCE REQUIREMENTS. FAILURE TO DO SO COULD CAUSE AN ACCIDENT RESULTING IN SERIOUS OR FATAL INJURY AND/OR PERSONAL PROPERTY DAMAGE.

WARNING: Cancer and Reproductive Harm – **www.P65Warnings.ca.gov**

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1. SAFETY

To avoid personal injury or property damage, please follow all safety precautions. AFF is not responsible for injury or damage resulting from unsafe and/or incorrect product use or system operation, or lack of maintenance.

- **The hydraulic equipment operator must be a qualified operator** familiar with correct training and work experience with hydraulic equipment. Lack of knowledge in any of these areas can lead to equipment damage or personal injury.
- **Carefully inspect cylinder(s), coupler(s) and hose(s) before use of hydraulic equipment.** If you find any damage on the cylinder(s), coupler(s), and hose(s), stop using your equipment and contact your nearest Authorized AFF Service Center or Distributor. Damage may cause equipment failure and possible personal injury.
- **To avoid personal injury**, do not modify or weld hydraulic equipment.
- **Never lift a load more than the rated capacity of the cylinder(s)**, overloading will cause equipment failure and possible personal injury.
- **The cylinder(s) are designed for a maximum pressure of 10,000 PSI**. Do not use a pump or relief valve with a pressure rating higher than 10,000 PSI. Pumps or relief valves with higher pressure ratings may cause equipment failure and possible personal injury.
- **Hydraulic cylinders are load-lifting devices, not load-holding devices.** After the load has been raised or lowered, it must always be held mechanically. Never work under a load supported by hydraulic pressure only.
- **To avoid personal injury**, keep hands and feet away from cylinder(s) and workplace during operation.
- **Do not lift unbalanced or off-center loads with cylinder(s)**. The incorrect loading can result in equipment failure and possible personal injury.

WARNING

- **Always wear safety glasses, helmet, and other necessary personal protective equipment when operating hydraulic equipment.**
- **When lifting, ensure hydraulic cylinder has a solid**, stable lifting surface for proper support. Ensure any and all steel or wood cribbing is capable of supporting the load.
- **Install pressure gauge in the system to monitor the operating pressure**. The gauge must have same pressure rating as the pump and cylinder(s) in the system. The incorrect gauge may cause equipment failure and possible personal injury.
- **Carefully inspect the cylinder(s) and coupler(s) before use**. Do not use cylinder(s) with damaged coupler(s) or damaged port threads. The damaged coupler(s) or damaged port thread(s) may cause equipment failure and possible personal injury.
- **To prevent dust or other debris from entering the cylinder body, store coupler(s) in a clean and dry environment.** Dirt or other debris will damage the cylinder's seals and result in equipment failure and possible personal injury.
- **Before removing or tightening hose(s) or coupler(s), release hydraulic pressure in system.**
- **Never handle pressurized hoses; escaping oil under high pressure can penetrate the skin, causing serious injury.** Seek medical aid immediately if injured.

- **Hydraulic cylinders must use high-quality oil.**
- **Before lifting, saddle or other accessories must be fully seated in piston**. Failure to ensure saddle or other accessory is fully seated can result in damage to hydraulic cylinder and/or severe injury.
- **Before lifting, if using external collar threads, ensure that accessory is completely threaded onto cylinder.** Failure to ensure accessory is completely threaded onto cylinder body can result in damage to hydraulic cylinder and/or severe injury.
- **For hydraulic technical help or repair service**. Please contact the authorized AFF Service Center in your area. AFF has no obligations under any warranty with respect to products that have been repaired by unauthorized personnel, modified, or damaged through misuse, abuse, accident, neglect, or mishandling.

IMPORTANT

- **Please keep the cylinder clean at all the times.**
- **When the cylinder is not in use**, keep the piston rod fully retracted, remove hose and use rubber cap(s) to cover the coupler. Ensure collar threads are protected with the thread protector.
- **Do not drop heavy loads on hose.**
- **Do not lift and carry hydraulic cylinders by the hose(s) or coupler(s).**
- **Do not use equipment in temperatures of 65°C (150°F) or higher.** Overheating will soften seals and weakens hose materials, resulting in oil leaking or other equipment failure.

2. OPERATION

Before using the cylinder, visually check all units to make sure there is no damage to cylinder(s), port threads, coupler(s) and hose(s). Ensure that no oil is leaking and you have all the required parts. If you find any problems, stop using your equipment and contact your nearest authorized AFF Service Center or Distributor.

2.1 Set-Up

- Single-Acting Cylinders
    - Use a pump with a release valve (8172) and one hose to connect with the cylinder. After connecting all parts, fully hand-tighten all couplers.

2.2 Bleeding Air from the Cylinder

- Air may accumulate within a cylinder during shipment or after prolonged use; this trapped air can cause poor performance.
- Please use the steps below to bleed the air from cylinder.
    - Position the cylinder with the piston rod is facing down and the cylinder lower than the pump. Fully extend and retract the cylinder 1 or 2 times.
    - It may be necessary to repeat the above steps several times.

2.3 Operation

- After completing the above steps, operate hydraulic pump to advance and retract the cylinder.
- To reduce the wear, use less than full stroke and full capacity when possible.
- Once task is complete, fully retract the piston rod, remove hose and use rubber cap(s) to recover the coupler. If collar threads were used, please use the thread protector to protect them.

3. MAINTENANCE

3.1 Maintenance

3.1.1 Inspect hoses and connections daily. Replace damaged components immediately with AFF replacement parts only.

3.1.2 Tighten connections as needed. Use pipe thread sealing compound when servicing connections.

3.1.3 Always use clean, approved hydraulic fluid and change as recommended or sooner if the fluid becomes contaminated (never exceed 400 hours). Follow the pumap manufacturer's instructions for changing and adding hydraulic fluid. Use only good-quality hydraulic fluid. Never use brake fluid, transmission fluid, turbine oil, motor oil, alcohol, glycerin, etc. Use of anything other than good-quality hydraulic oil will void the warranty and damage the ram, pump, hose, etc.

3.2 Lubrication & Cleaning

3.2.1 Any exposed threads (male or female) must be cleaned and lubricated regularly and protected from damage. Lubricate with light machine oil.

3.2.2 If a ram has been exposed to rain, snow, sand, airborne abrasive, or any corrosive environment, it must be cleaned, lubricated, and protected immediately after exposure. Clean exposed ram with clean cloth dampened with light machine oil daily. Protect exposed ram from the elements at all times.

3.3 Storage

Rams should be stored in vertical position in a dry, protected area, not exposed to corrosive vapor, dust or other harmful elements. When a ram has not been used for a period of 4 months, it should be connected to a pump and fully extended, then retracted a minimum of 5 times. This cycle will lubricate the plunger wall, reducing the possibility of corrosion and damage thereof.

3.4 How To Remove Faulty Coupler

If ram does not retract, secure load by other means. Depressurize pump and hose. Remove the ram from application. Disconnect and replace with new coupler.

3.5 How To Bleed Air From System

Place pump at a higher elevation than the hose and ram. Operate pump to fully extend and retract the ram 2 or 3 times. The objective is to float the air bubbles uphill and back to the pump reservoir. Follow pump instruction manual to bleed the air from pump reservoir.

4. TROUBLESHOOTING

WARNING

AFF cylinders should be repaired only by a qualified operator or authorized AFF Service Centers. Repairing cylinders without special tools and knowledge may result in personal injury. Please release pressure and disconnect hose(s) before making repair.

Problem	Cause	Solution
Cylinder will not extend or fully extend	• Release valve open • Coupler not fully tightened • Oil level in pump reservoir is full • Pump or valve malfunctioning • Overload on cylinder • Cylinder piston rod binding	• Fully tighten pump release valve • Fully tighten couplers • Fill oil in pump • Repair or use another pump and valve • Change to another cylinder with appropriate capacity • Check for dirt or leaks, change the damaged parts
Cylinder cannot maintain pressure	• Leaky connection • Cylinder seals damaged • Release valve not fully closed • Pump or valve malfunctioning	• Clean and reseal thread, tighten connection • Replace worn seals. Clean inside cylinder and use clean hydraulic oil • Fully tightening the release valve • Repair, or use another pump and valve
Cylinder extends slower than normal	• Leaky connection • Coupler not fully tightened • Pump malfunctioning	• Clean and reseal thread, tighten connection • Fully tighten couplers • Repair or use another pump and valve
Poor cylinder performance	• Air in cylinder • Cylinder piston rod binding	• Bleed air (see chapter 2.2) • Check for dirt or leaks, Check for bent, misaligned and worn parts
Cylinder leaks hydraulic oil	• Leaky connection • Worn or damaged seals • Cylinder damage	• Clean and reseal thread, tighten connection • Replace worn seals, clean inside cylinder and use • clean hydraulic oil • 3. Use new cylinder of contact with your nearest • Authorized AFF Hydraulic Service Center for repairing
Cylinder will not retract or retracts slower than normal	• Pump release valve closed • Couplers are not fully tightened • Pump reservoir is full • Hose is blocked • Return spring is damaged • Cylinder damaged	• Open release valve • Tightening the couplers • 3. Drain hydraulic oil to correct level • Clean or change hose • Change return spring • Use new cylinder or contact your nearest Authorized AFF Hydraulic Service Center for repairing

5. SPECIFICATIONS

Mod. No.	Ram Capacity (ton)	Stroke (in.)	Cylinder Effective Area (in^2)	Oil Capacity (in^3)	Collapsed Height (in.)	Extended Height (in.)	Internal Pressure at Capacity (psi)	Ram Plunger Dia. (in.)	Mounting Hole Dia (in.)
94300	5	0.24	1.1	0.263 (4.3 cm^3)	1.3	1.54	10,000	2.32x1.65	.22

Adapter Height (in)			
I	II	III	IV
0.25	0.5	1.0	1.25

6. AVAILABLE PARTS

Part #	Description	Size
94300-1	.25" Magnetic Adapter	.25"
94300-2	.5" Magnetic Adapter	.5"
94300-3	1" Magnetic Adapter	1"
94300-4	1.25" Magnetic Adapter	1.25"

LIMITED WARRANTY

SureWerx USA WARRANTS TO ITS CUSTOMERS THAT THE COMPANY'S SureWerx USA AFF-BRANDED PRODUCTS ARE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS.

SureWerx USA will repair or replace its **SureWerx USA AFF-branded** products which fail to give satisfactory service due to defective workmanship or materials, based upon the terms and conditions of the following described warranty plans attributed to that specific product. This product carries a ONE-YEAR warranty. During this warranty period, **SureWerx USA** will repair or replace at our option any part or unit that proves to be defective in material or workmanship.

Other important warranty information:
This warranty does not cover damage to equipment or tools arising from alteration, abuse, misuse, or damage and does not cover any repairs or replacement made by anyone other than **SureWerx USA**. The foregoing obligation is **SureWerx USA**'s sole liability under this or any implied warranty, and under no circumstances shall we be liable for any incidental or consequential damages.

Note: 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. If you have any questions about warranty service, please contact **SureWerx USA**. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

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