



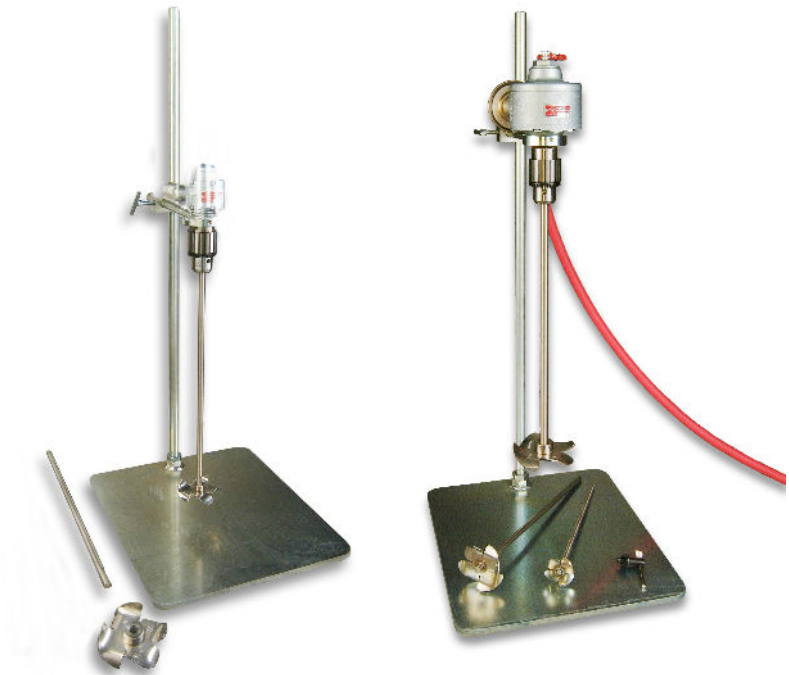
**FAWCETT**  
MIXING EQUIPMENT SPECIALISTS

## LABORATORY STIRRER

### OWNERS MANUAL

**Warranty:**

Our products are guaranteed against defective materials and workmanship. We will repair or replace such items as may prove defective at our option. Warranty period is one year on items manufactured by FAWCETT. On items not manufactured by FAWCETT, the manufacturer's warranty applies. All component parts of our products are covered by this warranty, except for normal wear items such as impellers. We cannot be responsible for damage or abuse to equipment caused by improper installation or operation. Warranties can also be voided by unauthorized disassembly of equipment. For warranty repairs, equipment is returned to FAWCETT at the customer's expense; we will repair and return to customer at our expense. Under no circumstances will we allow labor charges or other expense to repair defective merchandise. This warranty is exclusive and is in lieu of all other warranties, whether express or implied. FAWCETT shall not be liable for any other damages, whether consequential, indirect, or incidental, arising from the sale or use of its products.



### LS SERIES MIXERS

Contents:	Page:
Model – Drawing Data	2
Safety, General & Receiving	3
Installation	4
Operation / Maintenance	5/6
Parts Lists	7
Order Form	
Survey	

FAWCETT Co., Inc.  
3863 Congress Pkwy.  
Richfield, OH 44286  
phone: 330.659.4187  
fax: 330.659.6991

web: [www.fawcettco.com](http://www.fawcettco.com)



**LS Series Mixers**

Model: **LS-4000X**

Date: \_\_\_\_\_

Order No.: \_\_\_\_\_

**Motor:**

Part No.: **40A**

H.P.: **3.0 max**

RPM: **300 – 3,000**

Repair Kit #: **K208**

**Accessories:**

**AH-210 Air Hose**

**AF-4 1/2" Filter**

**AO-4 1/2" Lubricator**

\_\_\_\_\_

**Shaft(s):**

Part #'s : **SB-18 1/2" X 18" (3)**

\_\_\_\_\_

\_\_\_\_\_

**Impellers:**

Part #'s : **MF-43H**

**MF-53H**

**MF-63H**

\_\_\_\_\_

\_\_\_\_\_

## **Safety**

Please follow the below safety precautions. If there are any questions, please call FAWCETT at 330 659-4187. Please read this complete manual before trying to operate your mixer. Failure to follow these instructions could result in serious bodily injury or death.

- Do not touch moving parts while mixer is operating.  
Do not wear loose-fitting clothes or jewelry around an operating mixer. Keep all hands, feet, clothes, neckties, necklaces and other objects clear of moving parts.
- Never move the unit with the motor running.
- Have a qualified individual bring air to your unit.
- Never run the unit in open air.
- Never adjust the speed without the unit running.

### **Air Motor Safety:**

The air motor is designed to be driven by compressed air and under no circumstances be driven with any other gases. Fluids, particles, solids or any substance mixed with air, particularly combustible substances likely to cause explosions, must not drive air motor.

- Air motor is designed for air only. Do not allow corrosive gases or particulate material to enter motor. Water vapor, oil-based contaminants, or other liquids must be filtered out.
- Do not use a hammer or force coupling onto shaft when installing drive onto air motor. This causes end thrust that could damage air motor.
- Ambient temperature should not exceed 200°F.
- Beware of any exposed and/or movable parts to prevent personal and/or property damage.
- Solid or liquid material exiting unit can cause eye or skin damage. Keep away from air stream.
- Always disconnect air supply before servicing.
- Do not allow air motor to “run free” at high speeds with no loads. Excessive internal heat build-up, loss of internal clearances and rapid motor damage will result.
- Some models may exceed 85dB (A) sound level. Hearing protection should be worn when in close proximity to these models.

## **General**

- All models include an air hose (size & length vary).
- All models include an air control valve (types vary).
- 4000X models include a filter & lubricator.
- Air motors include exhaust muffler.

### **LS-2200GR – Gear Driven Series**

Gear Drive Models - The 15:1 ratio gearhead provides plenty of torque for all sorts of tough jobs. They will quickly mix containers of higher viscosity materials like heavy paints, resins, polymers, etc., as well as re-suspend settled materials. As the direct drive models above, they come with an air hose and valve

### **Receiving**

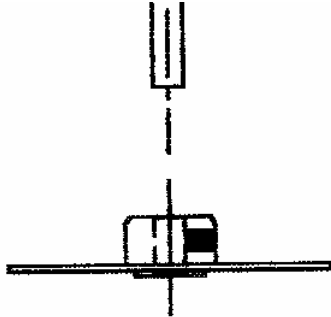
Before removing any packing, visually inspect the exterior of the shipment for any sign of damage. Should there be any damage, bring it to the attention of the delivering UPS or truck line and note the same on the receiving ticket. Should there be damage you must place a claim with the truck line. They are the only ones who will pay for the damage done and you are the only one who can place that claim.

## Installation

Your new mixer is supplied partially assembled. For more information, see the parts list pages for general arrangement drawings.

### **Impellers:**

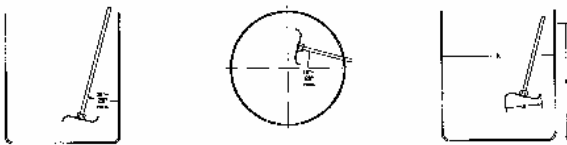
To install the impeller, back off the set screw as far as possible without removing them. Insert mixing shaft into the bore and tighten the set screw firmly to secure the impeller to the shaft.



### **Impeller Placement:**

Begin by mounting it 1 to 2 impeller diameters distance off the bottom of mixing container.

The above guideline is a “rule of thumb” and may not be the best for your situation. Experimenting with impeller placement may provide your best results.



### **Assembly:**

- 1.) Assemble stand rod to base.
- 2.) Insert the “L” mounting block onto the base stand rod and tighten the “T” handle.
- 3.) Insert the powerhead with mounting ring into the “L” block.
- 4.) Adjust the powerhead to the desired height and tighten the “T” handle.
- 5.) Assemble air hose to inlet port.
- 6.) Make sure air control valve is closed.

Mixer is now ready to operate.

# LUBRICATED AIR MOTORS

## OPERATION & MAINTENANCE

### **IMPORTANT: PLEASE READ THIS MANUAL AND SAVE FOR FUTURE REFERENCE.**

Thank you for purchasing this Fawcett product. It is manufactured to the highest standards using quality materials. Please follow all recommended maintenance, operational and safety instructions and you will receive years of trouble free service.

#### **Product Use Criteria:**

- Operate at temperature up to 250°F (121°C).
- Protect unit from dirt and moisture.
- Use ONLY compressed air to drive motor.
- Air lines connected to motor should be the same size or the next size larger than the intake port for efficient output and speed control.
- Protect all surrounding items from exhaust air.
- Bearings are grease packed.
- Use #AD220 or a detergent SAE#10 automotive engine oil for lubricating.

#### **General information**

##### **• Clearances: Model Total End Clearance (in/mm) Top Clearance (in/mm)**

LS101 0.0020/0.0508 0.0015/0.0381  
LS102 0.0025/0.0635 0.0015/0.0381  
LS103 0.0035/0.0889 0.0015/0.0381  
LS104 0.0035/0.0889 0.0015/0.0381  
LS105 0.0048/0.1219 0.0015/0.0381

- **Vane Life:** Depends upon speed, operating pressure and motor maintenance.
- **Operating Pressure:** 100 psi or below (7 bar)

**Correct installation is your responsibility.** Make sure you have the proper installation conditions and that the specified installation clearances are available.

## INSTALLATION

### **Connection**

Check the direction of the motor airflow. A single rotation motor will operate properly only in one direction. Install a filter in the air line before the connection to the motor. Connect lines to motor in the proper direction. A reversible motor will work equally well in both directions. Connecting a 4-way valve with piping to both air ports of the motor will make reversing possible.

**Do not add any thrust to the end or side of the shaft when making connections. Do not use a hammer on the shaft or connections.**

### **Mounting**

This product can be installed in any orientation. Mount the motor to a solid base plate that is mounted to a stable, rigid operating surface. Install a pressure regulator or simple shut-off valve to control motor.

Consult your Fawcett Co. representative for additional filter recommendations. Install a moisture trap and filter in the air line ahead of the motor. For the most efficient output and control of speed, use air lines that are the same size or the next pipe size larger than the motor intake port. An automatic air line lubricator should be installed 18" or as close as possible in the air line just ahead of the motor. Adjust the lubricator to feed one drop of oil for every 50-75 CFM of air moving through the motor. Air consumption at various speeds and pressures are available from your local Fawcett representative.

**It is your responsibility to operate this product at recommended speeds, loads and room ambient temperatures. Do not run the motor at high speeds with no load. This will result in excessive internal heat that may cause motor damage.**

The starting torque is less than the running torque. The starting torque will vary depending upon the position of the vanes when stopped in relation to the air intake port. Use a pressure regulator and/or simple shut-off valve to regulate the motor's speed and torque. This will provide the required power and will conserve air.

## OPERATION

### **Injury Hazard**

**Air stream from product may contain solid or liquid material that can result in eye or skin damage. Do Not use combustible gases to drive this motor. Wear hearing protection. Sound level from motor may exceed 85db(A). Failure to follow these instructions can result in burns, eye injury or other serious injury.**

### **Air Power:**

Check to ensure the air valve is in the closed position, then connect air supply. Check rotation to be sure the mixer shaft is rotating in a clockwise direction, looking downward into the container.

Once the mixer is in the container, it is now safe to operate.

### **CAUTION:**

- **Never run mixer without an Impeller.**
- **Never run the impeller in open air.**
- **Never run impeller outside a container.**

# MAINTENANCE

## Injury Hazard

**Disconnect air supply and vent all airlines. Wear eye protection when flushing this product. Air stream from product may contain solid or liquid material that can result in eye or skin damage. Flush this product in a well-ventilated area. Do Not use kerosene or other combustible solvents to flush this product. Failure to follow these instructions can result in burns, eye injury or other serious injury.**

**It is your responsibility to regularly inspect and make necessary repairs to this product in order to maintain proper operation.**

Check intake and exhaust filters after first 500 hours of operation. Clean filters and determine how frequently filters should be checked during future operation. This one procedure will help assure the product's performance and service life.

## Flushing

Flushing this product to remove excessive dirt, foreign particles, moisture or oil that occurs in the operating environment will help to maintain proper vane performance. Flush the motor if it is operating slowly or inefficiently.

**Use only #AH255B Flushing Solvent. DO NOT use kerosene or ANY other combustibile solvents to flush this product.**

## Lubrication

Use only #AD220 or a detergent SAE #10 automotive engine oil for lubricating. Lubricating is necessary to prevent rust on all moving parts. Excessive moisture in the air line may cause rust or ice to form in the muffler when air expands as it passes through the motor. Install a moisture separator in the air line and an after cooler between compressor and air receiver to help prevent moisture problems.

## Manual Lubrication

Shut the air motor down and oil after every 8 hours of operation. Add 10-20 drops of oil to the air motor intake port.

## Automatic Lubrication

Adjust inline oiler to feed 1 drop of oil per minute for high speed or continuous duty usage. Do Not overfeed oil or exhaust air may become contaminated.

1. Disconnect air line and muffler.
2. Add flushing solvent directly into motor. If using liquid solvent, pour several tablespoons directly into the intake port. If using #AH255B, spray solvent for 5-10 seconds into intake port.
3. Rotate the shaft by hand in both directions for a few minutes.
4. **You must wear eye protection for this step.** Cover exhaust with a cloth and reconnect the air line. Slowly apply pressure until there is no trace of solvent in the exhaust air.
5. Listen for changes in the sound of the motor. If motor sounds smooth, you are finished. If motor does not sound like it is running smoothly, installing a service kit will be required. (See "Service Kit Installation").

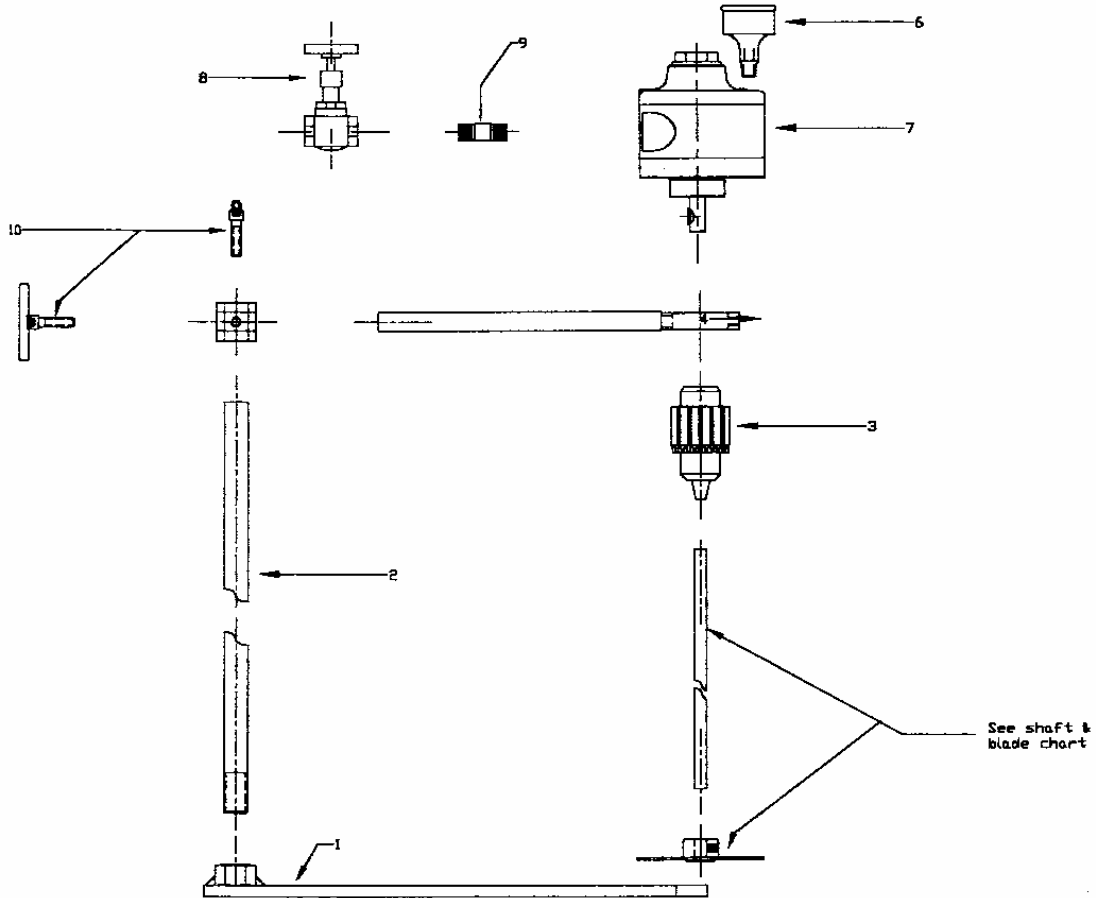
**Check that all external accessories such as relief valves or gauges are attached and are not damaged before operating product.**

## Shutdown

**It is your responsibility to follow proper shutdown procedures to prevent product damage.**

1. Turn off air intake supply.
2. Disconnect plumbing.
3. Remove air motor from connected machinery.
4. **Wear eye protection.** Keep away from air stream. Use clean, dry air to remove condensation.
5. Lubricate motor with a small amount of oil in chamber. Rotate shaft by hand several times.
6. Plug or cap each port.
7. Coat output shaft with oil or grease.
8. Store motor in a dry environment.

**[www.fawcettco.com](http://www.fawcettco.com)**



	LS-1000X	LS-2000X	LS-30000X	LS-4000X	DESCRIPTION
<b>1</b>	AX1-P	AX23-P	AX23-P	AX23-P	SUPPORT STAND
<b>2</b>	AX1-R	AX23-R	AX23-R	AX23-R	STAND ROD
<b>3</b>	01S	03J	03J	04-J	CHUCK / COUPLING
<b>4</b>	01-RR	03-RR	03-RR	04-R	ROD & RING / ROD MOUNT
<b>5</b>	L-1	L-4	L-4	L-6	CLAMP BLOCK
<b>6</b>	01-M	K1-6	K1-6	M07	MUFFLER
<b>7</b>	10-A	20A	30A	40A	MOTOR
<b>8</b>	01-V	02-V	03-V	04-V	VALVE
<b>9</b>	-	025-N	025-N	05-N	NIPPLE
<b>10</b>	LT-4	LT-4	LT-4	1/2-20 HH	TEE HANDLE / BOLTS
<b>REF.</b>	LS-101A	20A	30A	40A	POWERHEAD ASSEMBLY







# FAX FEEDBACK SHEET

Our objective is to provide you the best products possible.

**You may help us by providing feedback to us.**

Please complete this survey and fax it back to us within 10 days.

Shipment No.: \_\_\_\_\_

Shipment Date: \_\_\_\_\_

Please circle your responses and FAX to (330) 659-6991

If you are RECEIVING or PURCHASING personnel, please answer the following:

Was this shipment received within the timeframe established by your company?	YES	NO
Did this shipment contain the correct items and quantity?	YES	NO
Was the box damage free?	YES	NO
Does the level of product quality meet your requirements and expectations?	YES	NO
Are you aware of our website? <a href="http://www.fawcettco.com">www.fawcettco.com</a>	YES	NO

If you are TECHNICAL personnel, please answer the following:

Did you need to contact our Technical Support staff?	YES	NO
If you did contact us, was our staff helpful and professional?	YES	NO
Did you use the installation, programming and/or hookup instructions?	YES	NO
Were the installation, programming and/or hookup instruction clear for you?	YES	NO

Completed By: \_\_\_\_\_ Your Function: \_\_\_\_\_

Company: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Thank you for helping us continually improve the products and services we provide you. For more detailed feedback, feel free to contact our Customer Service Personnel at (330) 659-4187 ext.2300 or via email at [sales.service@fawcettco.com](mailto:sales.service@fawcettco.com)

Fawcett Co., Inc. The Home of Mixed Flow Impellers

\* Manufactured in the USA \*