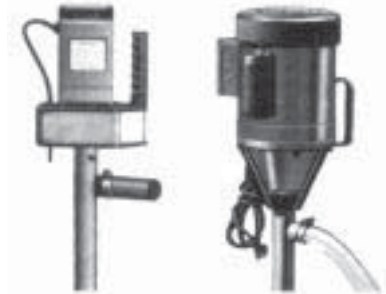


Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Action Electric Drum Pumps

Description

Action electric drum pumps are electrically driven and self-priming. They are designed to transfer clean, non-abrasive and nonflammable liquids that are compatible with pump materials. The motor is isolated from liquid by a mechanical seal made of ptfe with a Viton O-ring. The pump has an outer shell and inner shaft which are made of Type 316 stainless steel. Model ACT-HDESS has a continuous-duty electric motor. This pump also available with an air motor model ACT-16ESS. The motor has shielded, prelubricated ball bearings that reduce maintenance requirements.



MODEL ACT-16ESS MODEL ACT-HDESS

Figure 2 - Electric Drum Pumps

Performance

| Model | GMP† Total Head (in Feet) | | | | | Max. Head* | Max. Viscosity |
|-----------|---------------------------|-------|--------|--------|--------|------------|----------------|
| | 0 ft. | 5 ft. | 10 ft. | 15 ft. | 20 ft. | | |
| ACT-16ESS | 17 | 13 | 9 | 5 | 1 | 20.7ft | 1,000 CPS |
| ACT-HDESS | 10 | 5.0 | - | - | - | 10.0ft | 2,000 CPS |

(†) Based on water at 72° F.

(*) Calculate equivalent PSI by dividing total head by 2.31.

PUMP CHEMICAL COMPATIBILITY CHART

| | | |
|--------------------------|---------------------------------|--------------------|
| Acetic Acid | Formaldehyde (Aqueous solution) | Sodium aluminate |
| Alum (potassium sulfate) | Lactic acid | Sodium bicarbonate |
| Aluminum hydroxide | Nickel chloride | Sodium carbonate |
| Ammonia | Perchloroethylene | Sodium chloride |
| Amines | Phthalic anhydride | Sodium cyanide |
| Arsenic acid | Potassium bicarbonate | Sodium sulfate |
| Beer | Potassium bromide | Sodium sulfide |
| Beet sugar liquids | Potassium carbonate | Starch |
| Benzoic acid | Potassium nitrate | Tannic acid |
| Boric acid | Potassium sulfate | Tomato juice |
| Calcium hydroxide | Potassium sulfide | Trichlorethane |
| Calcium sulfate | Pyrogalllic acid | Trichlorethylene |
| Chloroform | Silver nitrate | Vinegar |
| Citric acid | Soap solutions | Water |
| Copper sulfate | Soda ash (20%) | Zinc chloride |
| Ferric sulfate | Sodium acetate | Zinc sulfate |



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Action Electric Drum Pumps

The pump chemical compatibility chart, on the previous page, is a guide to assist in determining chemical compatibility with this Action pump. Other factors such as: viscosity, pressure, specific gravity, temperature, concentration, chemical combinations, etc. should also be considered when determining compatibility. Always contact your chemical supplier for his compatibility recommendations. We have attempted to eliminate all dangerous and/or flammable liquids from the list. Dangerous and/or flammable liquids are not recommended for use with Action pumps. Final selection should be based on actual field testing under the conditions of intended use. Many variables are involved in determining chemical compatibility.

Specifications

| | ACT-16ESS | ACT-HDESS |
|---|--|--|
| Motor | Universal type AC/DC, intermittent duty(2M145) | Capacitor start type, continuous-duty (6K181C) |
| Motor Bearings | Ball, prelubricated & shielded | Ball, prelubricated & shielded |
| Volts | 115VAC, 60Hz, single phase | 115/230VAC, 60Hz, single phase |
| Cord | 6 Foot, 16 ga.,3-cond. SJT, w/molded 3-prong plug for 115V | 8 Foot, 16 ga.,3-cond. SJT w/feed thru ON-OFF switch, w/molded 3-prong plug for 115V |
| Amps | 6.3A | 7.6A |
| Horsepower | 1/2 | 1/3 |
| RPM | 10,000 | 3,450 |
| Seals, impeller and auger | ptfe | ptfe |
| Pump body shaft & discharge | Type 316 stainless | Type 316 stainless action |
| Pump discharge | 3/4" FPT | 3/4" FPT |
| Discharge hose | 5 ft, 1" I.D. | 5 ft, 1" I.D. |
| EPDM (Ethylene Propylene Diene Monomer) | | |

General Safety Information

1. Know the pump application, limitations, and potential hazards.

⚠ WARNING *Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in explosive atmospheres. Pump should only be used with liquids compatible with pump component materials. Failure to follow this warning can result in personal injury and/or property damage.*

2. Make certain that the power source (electric motor) conforms to the requirements of the equipment.
 3. Provide adequate protection and guarding around moving parts.

4. Disconnect power before servicing.
 5. Release all pressure within the system before servicing any component.
 6. Drain all liquids from the system before servicing.
 7. Secure the discharge line before starting the pump. An unsecured discharge line will whip, possible causing personal injury and/or property damage.
 8. Check hoses for weak or worn condition before each use, making certain that all connections are secure.
 9. Periodically inspect pump and system components. Perform routine maintenance as required. (see Maintenance section).

10. Provide a means of pressure relief for pumps whose discharge line can be shut off or obstructed.
11. Personal Safety
 a. Wear safety glasses at all times when working with pump.
 b. Wear a face shield, proper apparel when pumping hazardous chemicals.
 12. When wiring an electrically-driven pump, follow all electrical and safety codes, as well as the most recent United States National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).



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Models ACT-16ESS and ACT-HDESS

⚠ WARNING *Risk of electrical shock! Never connect the Green (or Green and Yellow) wire to a live terminal!*

13. This equipment can be used for 120 volt (single phase) Models ACT-16ESS and ACT-HDESS (as shipped and wired from the factory). Model 3P680 can also be rewired for use with 230V (single phase). These units can be wired for portability, with flexible 3-wire cord (as supplied), or permanent installation using a power supply with a ground.

To reduce the risk of electrical shock, the motor must be securely and adequately grounded! This can be accomplished by either: 1) inserting plug (portable) directly into a properly installed and grounded 3-prong grounding type receptacle (as shown in Figure 2A for 110-120V, or Figure 2B for 220-240V); 2) Permanently wiring the unit with a grounded, metal raceway system; 3) Using a separate ground wire connect to the bare metal of the motor frame; 4) Other suitable means. The green (or green and yellow) conductor in the cord is the grounding wire. The motor must be securely and adequately grounded for your protection against shock hazards! Where a 2-prong wall receptacle is encountered, it must be replaced a properly grounded 3-prong receptacle installed in accordance with the National Electrical Code and local codes and ordinances. To ensure a proper ground, the grounding means must be tested by a qualified electrician. Use only 3-wire extension cords that have a 3-prong, grounding-type plugs, and 3-pole receptacles that accept the equipment plug.

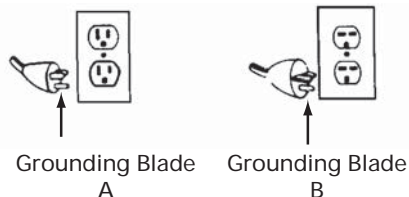


Figure 2 - Grounding methods

14. All wiring should be performed by a qualified electrician.
15. Protect electrical cord from sharp objects, hot surfaces, oil, and chemicals. Avoid kinking the cord. Replace or repair damaged or worn cords immediately.
16. Keep fingers and foreign objects away from ventilation and other openings. Do not insert any objects into the motor.
17. Use wire of adequate size to minimize voltage drop at the motor.
18. Disconnect power before servicing a motor or its load. If the power disconnect is out-of-sight, lock it in the open position and tag it to prevent unexpected application of power.
19. Do not touch an operating motor. Modern motors are designed to operate at high temperatures.

⚠ WARNING *Do not handle a pump or pump motor with wet hands or when standing on a wet or damp surface, or in water.*

Installation/Operation

⚠ WARNING *Do not use pump in explosive atmospheres. Do not pump flammable liquids. In order to safely use this product familiarize yourself with this pump and also with the liquid (chemical, etc.) that is going to be pumped through the unit. Even though this pump is suitable for many liquids, it is NOT suitable for all liquids!*

1. Place the pump into the liquid to be pumped.

⚠ CAUTION *Do not pump liquids containing metal chips or shavings. Never operate the pump dry. These will damage the pump.*

2. Attach the pump to the drum with the bung adapter supplied.
3. Secure the discharge line of the pump to keep it from lashing about.
4. Plug the pump power cord into a properly installed receptacle.

Note: Both models as supplied from factory, are wired for 115V operation. Model ACT-HDESS can be used for 230V if motor is rewired for this use and cord is replaced. Follow the instructions on the motor plate or inside cover of the connection box to change unit for 230V operation.

⚠ WARNING *An incorrect connection may cause an electrical short, produce an electrical shock or burn out the pump motor, resulting in property damage and injury.*

5. It is strongly recommended that this unit be plugged into a G.F.I.C. (Ground Fault Interrupter Circuit). Consult your local electrician for installation and availability
6. Unplug the pump when the pumping operation is complete.



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Action Electric Drum Pumps

Installation/Operation (Continued)

Note: The pump will drain down when it is unplugged.

7. This unit is not waterproof and is not intended to be used in showers, saunas, or other potentially wet locations. The motor is designed to be used in a clean, dry location with access to an adequate supply of cooling air. Ambient temperature around the motor should not exceed 104° F (40° C). For outdoor installations motor must be protected by a cover that does not block airflow to and around the motor. This unit is not weatherproof nor is it able to be submersed in water, or any other liquid.

Maintenance

⚠ WARNING *Disconnect power before servicing.*

⚠ CAUTION *Do not stand the pump on its shaft.*

1. After each use, flush the pump with water or a suitable nonflammable solvent.
2. Store the pump in a clean, dry area; the preferred method of storage is hanging.
3. Motor bearing never needs to be lubricated, replace when necessary.

4. Pump should be checked daily, weekly, monthly, etc., for proper operation. If anything has changed since unit was new, unit should be removed and repaired or replaced. Replace any worn or damaged part immediately.
5. Only qualified electricians or servicemen should attempt to repair this unit.

⚠ WARNING *Improper repair and/or assembly can cause an electrical shock hazard.*

Troubleshooting Chart

| Symptom | Possible Cause(s) | Corrective Action |
|---------------------|--|--|
| Pump does not prime | <ol style="list-style-type: none"> 1. Clogged impeller or augers 2. Clogged discharge port 3. Broken shaft coupling 4. Worn or damaged shaft seal | <ol style="list-style-type: none"> 1. Clean impeller and augers 2. Clean discharge port and hose 3. Replace shaft coupling 4. Replace shaft seal |
| Insufficient flow | <ol style="list-style-type: none"> 1. Possible causes for "Pump does not prime" (above) 2. Clogged impeller or augers 3. Clogged discharge hose 4. Pinched discharge hose 5. Pumped liquid is too viscous | <ol style="list-style-type: none"> 1. Check and repair as is necessary 2. Clean impeller or augers 3. Clean discharge hose 4. Replace discharge hose 5. Use only for liquids with viscosity within range of pump.(See Specifications) Model ACT-16ESS to 1000 CPS Model ACT-HDESS to 2000 CPS |



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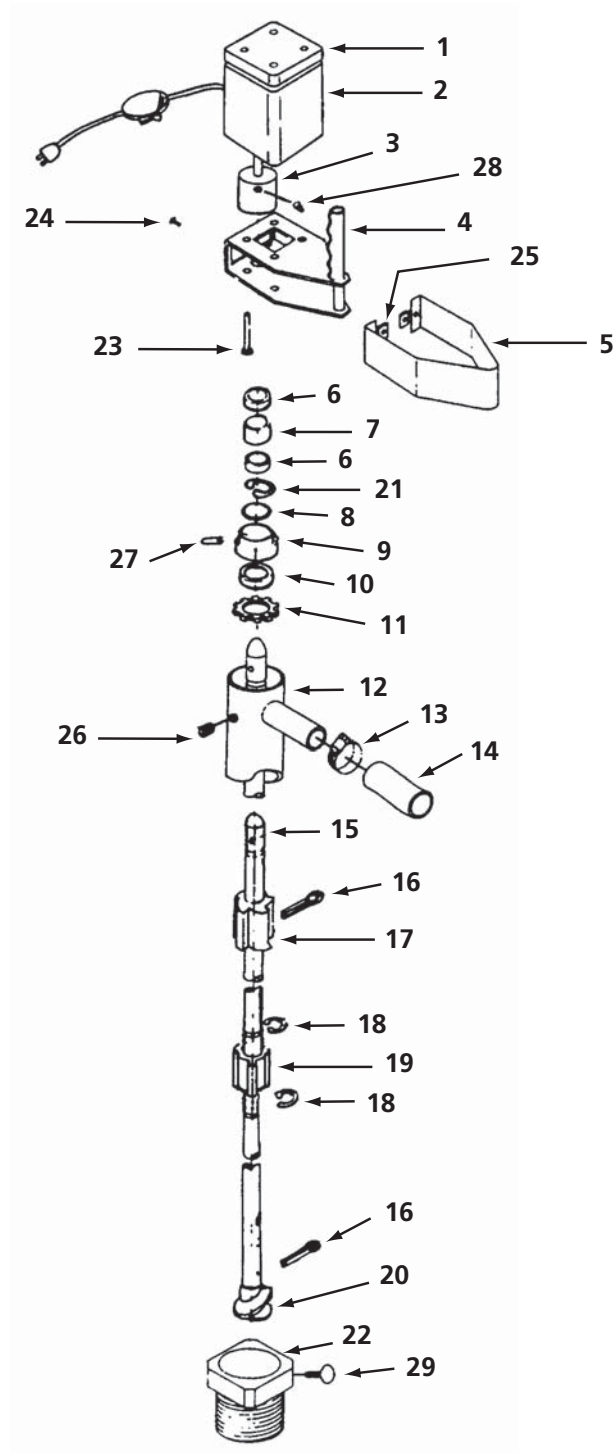


Figure 3 — Replacement Parts Illustration

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Replacement Parts List

| Reference Number | Description | Part Number | Quantity |
|------------------|--|-------------|----------|
| 1 | Motor Guard | 66101 | 1 |
| 2 | 1/2 HP Motor w/8 ft. Power Cord and Switch | 66999 | 1 |
| 3 | Pump Coupling | 66896 | 1 |
| 4 | Handle/Pump Mount Assembly | 66285 | 1 |
| 5 | Cover Plate | 66407 | 1 |
| 6 | Bearing | 66108 | 2 |
| 7 | Spacer | 66189 | 1 |
| 8 | O-Ring | 66111 | 1 |
| 9 | End Cap | 66912 | 1 |
| 10 | Seal | 66413 | 1 |
| 11 | Star Washer | 66555 | 1 |
| 12 | 316SS Outer Column | 66717 | 1 |
| 13 | Hose Clamp | 1P416 | 1 |
| 14 | 5 Foot EPMD Hose | 66119 | 1 |
| 15 | 316SS Inner Shaft | 66120 | 1 |
| 16 | Cotter Pin | 66921 | 2 |
| 17 | ptfe Impeller | 66722 | 1 |
| 18 | SS "C" Ring Retainer | 66123 | 6 |
| 19 | ptfe Spacer | 66825 | 3 |
| 20 | ptfe Auger | 66829 | 1 |
| 21 | Retaining Ring | 66130 | 1 |
| 22 | Bung Adapter | 6500 | 1 |
| 23 | Motor Mount Screw | 66011 | 4 |
| 24 | Cover Plate Screw | 66004 | 2 |
| 25 | Speed Nut | 66003 | 2 |
| 26 | Column Set Screw | 66017 | 2 |
| 27 | Roll Pin | 66005 | 1 |
| 28 | Coupling Set Screw | 66016 | 2 |
| 29 | Thumb Screw | 1650-19 | 1 |



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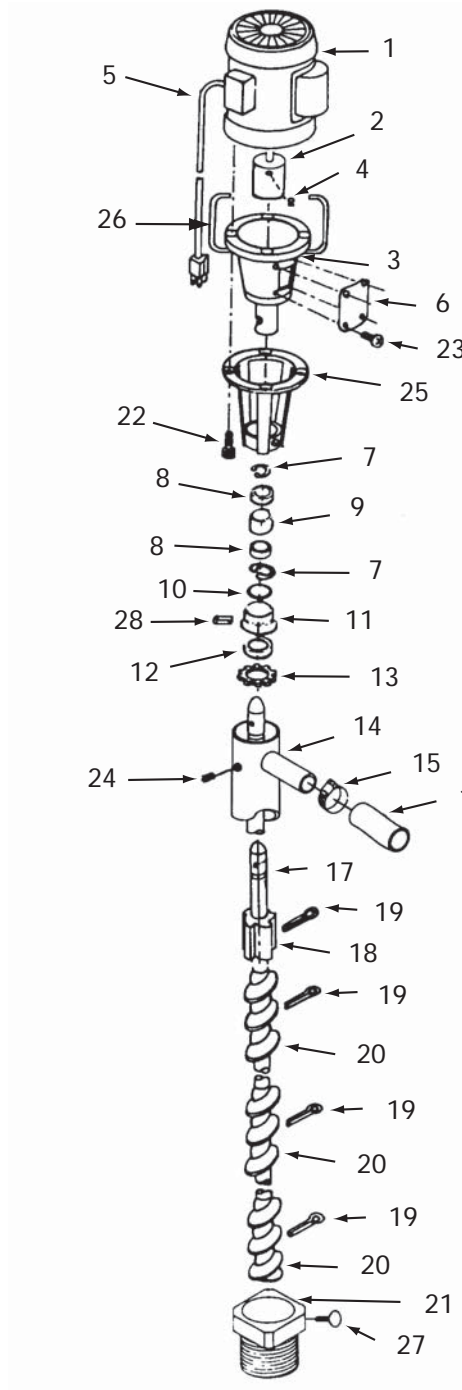


Figure 4 — Replacement Parts Illustration



Replacement Parts List

| Reference Number | Description | Part Number | Quantity |
|------------------|---------------------|-------------|----------|
| 1 | 1/3 HP Motor | 6K181C | 1 |
| 2 | Motor Coupling | 68996 | 1 |
| 3 | Pump Mount Assembly | 68333 | 1 |
| 4 | Coupling Set Screw | 68332 | 2 |
| 5 | Power Cord w/Switch | 68334 | 1 |
| 6 | Cover Plate | 68335 | 1 |
| 7 | Retaining Ring | 66130 | 1 |
| 8 | Bearing | 66108 | 2 |
| 9 | Spacer | 66189 | 1 |
| 10 | O-Ring | 68331 | 1 |
| 11 | End Cap | 66912 | 1 |
| 12 | Seal | 66413 | 1 |
| 13 | Star Washer | 66555 | 1 |
| 14 | Outer Column | 66717 | 1 |
| 15 | Hose Clamp | 1P416 | 1 |
| 16 | Hose, 5 Foot EPDM | 66119 | 1 |
| 17 | Inner Shaft | 68120 | 1 |
| 18 | ptfe Impeller | 66722 | 1 |
| 19 | Cotter Pin | 66921 | 4 |
| 20 | ptfe Auger | 68338 | 3 |
| 21 | Bung Adapter | 65000 | 1 |
| 22 | Handle Set Screw | 68051 | 4 |
| 23 | Cover Plate Screw | 68014 | 4 |
| 24 | Column Set Screw | 66017 | 2 |
| 25 | H/D Bracket | 68342 | 1 |
| 26 | Handle | 68332 | 2 |
| 27 | Thumb Screw | 1650-19 | 1 |
| 28 | Roll Pin | 66005 | 1 |



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