

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 Teflon 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	100 SSU
ACT-HDESS	10	5.0	-	-	-	10.0ft	500 SSU

(†) 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
Benzaldehyde	Potassium chloride	Sulfurous acid
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

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. For this reason, Dayton Electric Mfg. Co. cannot guarantee compatibility or assume responsibility for personal injury and/or property damage to persons using this list.

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	Teflon	Teflon
Pump body shaft & discharge.	Type 316 stainless saction	Type 316 stainless saction
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).

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.

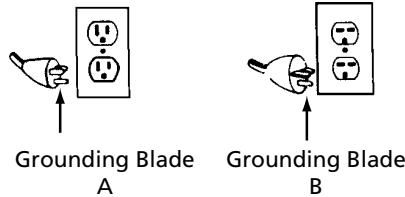


Figure 2 - Grounding methods

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.

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 100 S.S.U. Model ACT-HDESS to 500 S.S.U.

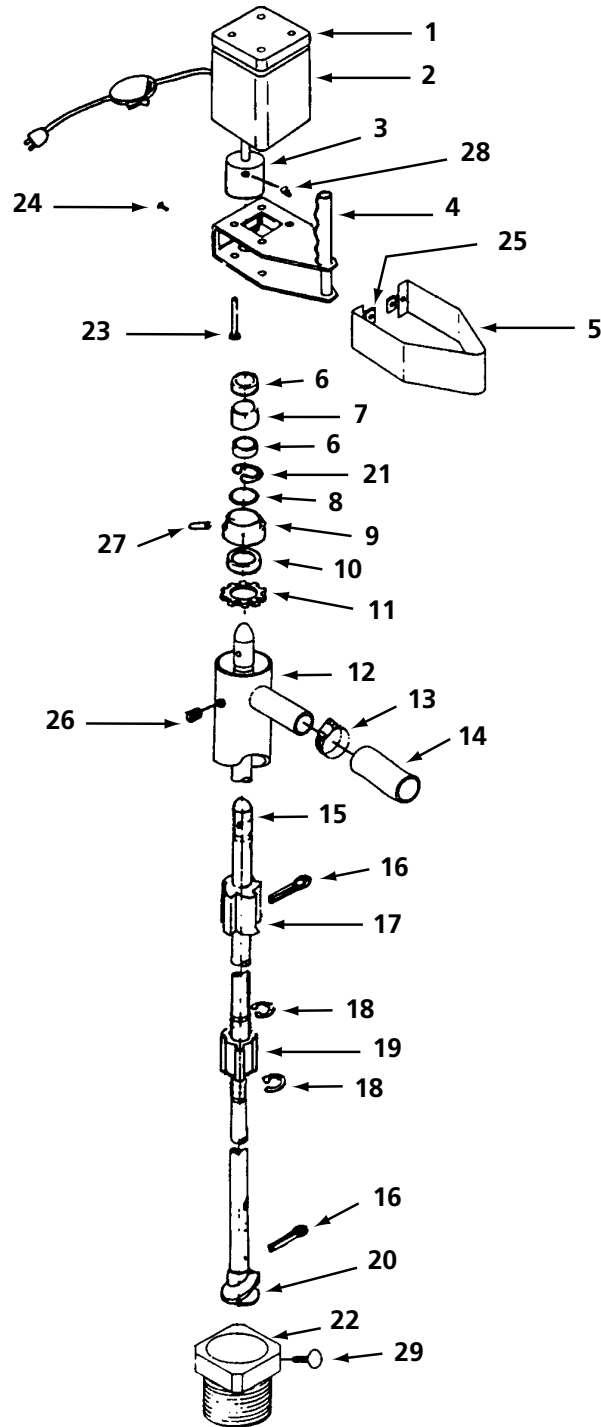


Figure 3 — Replacement Parts Illustration

90-Day Limited Warranty

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	Teflon Impeller	66722	1
18	SS "C" Ring Retainer	66123	6
19	Teflon Spacer	66825	3
20	Teflon 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

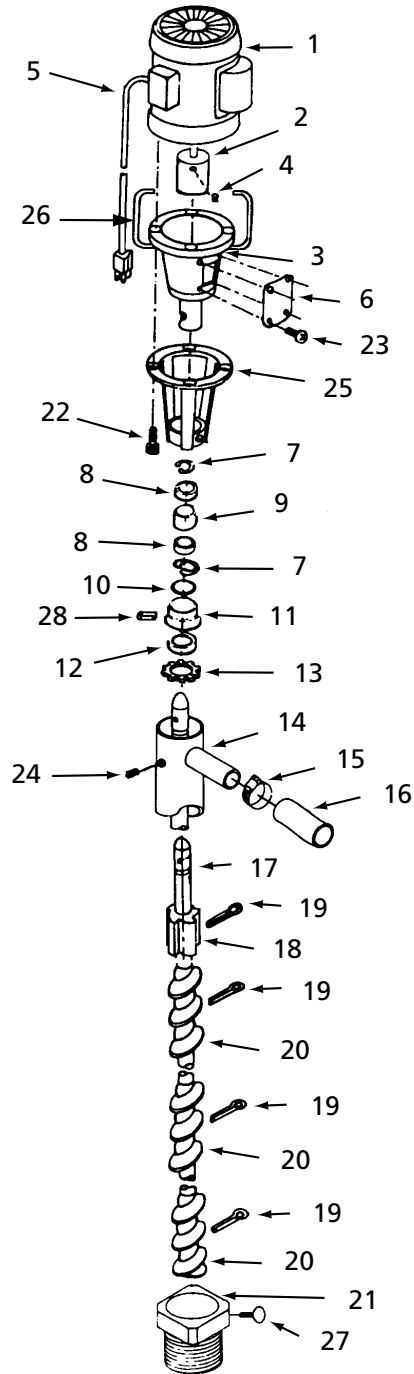


Figure 4 — Replacement Parts Illustration

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	Teflon Impeller	66722	1
19	Cotter Pin	66921	4
20	Teflon 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