DATA SHEET **BD MOTORIZED PUMP UNITS**



Motors: 8023ES, 8024ES, 8025FS

Used on Pump Models:

8026ES, 8027ES, Motors: 8028ES, 8029ES

Used on **Pump Models:**

247, 270, 271, 277

230, 231, 237, 240, 241,

340, 341, 347, 350, 351, 357



Model 340BD33 Shown

MOTORIZED UNIT FEATURES

- Motorized unit design eliminates belt selection, sizing and adjustments.
- · Compact direct mounting design reduces the space required compared to belt or gearbox drive assemblies.
- · Ease of assembly reduces fabrication costs.



CSA Energy Verified Master Contract (MC) 183051

UL Recognized Components

Some Motor Models Do Not Contain A Thermal Protector

Install a separate over-current protection device to prevent motor burnout and possible fire damage due to an overloaded or stalled motor. The motor must be adequately grounded.

MOTOR WARRANTY

The motor manufacturer warrants all electric motors to be free from defects of material and workmanship for one year from the date of shipment. For warranty consideration, ship the defective motor PREPAID directly to Baldor.

INSTALLATION INSTRUCTIONS

Before installing the motorized pump unit, check the incoming voltage to ensure it does not exceed the motor rating, as this will result in motor damage. Instructions for electrical connections are on a decal on the motor housing.

Qualified or trained personnel should install equipment following the National Electrical Code, local codes and with NEMA MG2.

Review your application flow and pressure requirements. Exceeding the rated pressure of the motorized unit may cause overheating of the motor and a high amp draw, resulting in shortened motor life. Before operation, see the Pump and Motor Lubrication section.

CONNECTING PUMP TO ELECTRIC MOTOR

- 1. Remove the four (4) hex head combination screws from the bearing cover and set aside.
- 2. Rotate the pump shaft so the keyway is toward the back of the pump.
- 3. Insert the key into the pump shaft. The beveled end should be toward the pump, and the flat surface should be horizontal with the shaft keyway to ensure the key is completely seated. If the key is installed improperly, the shaft may not fit into the motor.
- 4. Slip the lock washer and washer onto the hex head shaft retaining screw. Apply Loctite® 242® onto the screw threads and thread the screw into the pump shaft. Torque to 110 in-lbs (12 Nm) (Models 340 and 350 Only).
- 5. Install the mounting flange onto the pump with the extended collar toward the pump and side vents to the right and left. Line up the four (4) unthreaded holes with the holes on the bearing cover.
- 6. Apply a small amount of Loctite[®] 242[®] to the four (4) flat-head hex screws and secure the mounting flange assembly to the pump. Torque to 60-70 in-lbs (6.6-7.7 Nm).
- 7. Apply Loctite[®] 242[®] to the two (2) set screws and thread them into the motor shaft, only partially into the keyway.
- 8. Apply anti-seize lubricant (PN 6106) to the pump shaft and inside diameter of the motor shaft.
- 9. Carefully insert the pump into the hollow motor shaft until the flange is flush with the motor. Ensure the key in the pump shaft lines up with the keyway of the motor shaft.
- 10. Secure the pump with the mounting flange to the motor with four (4) lock washers and four (4) hex head screws. Torque to 50-60 ft-lbs (5.5-6.6 Nm).
- 11. Use a ⁵/₃₂" hex wrench to secure the set screws through the side vent in the mounting flange. Torgue to 60–75 in-lbs (6.6–8.3 Nm).

3 FRAME — MOTORIZED PUMP UNITS

| MOTORIZED UNITS | | 230BD151 231BD151 237BD151 | 230BD31 231BD31 237BD31 | 230BD33 231BD33 237BD33 |
|--|--|--|--|---|
| Shipping Unit Weight | | 76 lbs | 110 lbs | 90 lbs |
| Shipping Unit Dimensions | | 26.5" x 16.5" x 16.0" | 26.5" x 16.5" x 16.0" | 26.5" x 16.5" x 16.0' |
| PUMPS | | 230, 231, 237 | 230, 231, 237 | 230, 231, 237 |
| Flow | | 2.3 gpm | 2.3 gpm | 2.3 gpm |
| Pressure Range | | 100–900 psi | 100–1900 psi | 100–1900 psi |
| MOTORS | | 8023ES | 8024ES | 8025ES |
| Assembly Mount — REQUIRED | | 8020 | 8021 | 802525 |
| Horsepower | | 1.5 hp | 3.0 hp | 3.0 hp |
| Phase | | Single | Single | Three |
| RPM | | 1725 rpm | 1725 rpm | 1750 rpm |
| Frame Size | | 56CYZ, TEFC | 184TCZ, TEFC | 182TCZ, TEFC |
| Hertz | | 60 Hz | 60 Hz | 60 Hz |
| Volts | | 115/208/230V | 230V | 208–230/460V |
| voits Maximum Amps | | 12.8/6.7/6.4 Amps | | |
| Service Factor | | 12.8/6.7/6.4 Amps 1.15 | 13.2 Amps 1.0 | 8.6–8.2/4.1 Amps |
| | | | | 1.15 |
| Maximum Ambient Temperature | | 104° F | 104° F | 104° F 16.5 mm |
| Shaft Diameter (Hollow) | | 16.5 mm | 16.5 mm | |
| Thermal Overload | | No | Yes | No |
| Capacitor Start | | Yes Class B | Yes | No Class F |
| | | Class D | Class F | Class F |
| | | | | |
| MOTORIZED UNITS | 240BD31 241BD31 | 240BD33 241BD33 | 270BD31 271BD31 | 270BD33 271BD33 |
| | 241BD31 247BD31 | 241BD33 247BD33 | 271BD31 277BD31 | 271BD33 277BD33 |
| Shipping Unit Weight | 241BD31 247BD31 110 lbs | 241BD33 247BD33 90 lbs | 271BD31 277BD31 110 lbs | 271BD33 277BD33 90 lbs |
| Shipping Unit Weight Shipping Unit Dimensions | 241BD31 247BD31 | 241BD33 247BD33 | 271BD31 277BD31 | 271BD33 277BD33 90 lbs |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0 270, 271, 277 |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0 270, 271, 277 |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8025ES |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp Single | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp Three | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp Single | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three 1750 rpm |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp Single 1725 rpm | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp Three 1750 rpm | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp Single 1725 rpm | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz Volts | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz Volts Maximum Amps | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz Volts Maximum Amps Service Factor | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps 1.0 | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps 1.15 | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps 1.0 | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps 1.15 |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz Volts Maximum Amps Service Factor Maximum Ambient Temperature | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps 1.0 104° F | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps 1.15 104° F | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps 1.0 104° F | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps 1.15 104° F |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz Volts Maximum Amps Service Factor Maximum Ambient Temperature Shaft Diameter (Hollow) | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps 1.0 104° F 16.5 mm | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps 1.15 104° F 16.5 mm | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps 1.0 104° F 16.5 mm | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps 1.15 104° F 16.5 mm |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower | 241BD31 247BD31 110 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps 1.0 104° F | 241BD33 247BD33 90 lbs 26.5" x 16.5" x 16.0" 240, 241, 247 3.6 gpm 100–1200 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps 1.15 104° F | 271BD31 277BD31 110 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8024ES 8021 3.0 hp Single 1725 rpm 184TCZ, TEFC 60 Hz 230V 13.2 Amps 1.0 104° F | 271BD33 277BD33 90 lbs 26.5" x 16.5" x 16.0" 270, 271, 277 4.2 gpm 100–1000 psi 8025ES 8021 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 Hz 208–230/460V 8.6–8.2/4.1 Amps 1.15 104° F |

Refer to individual Pump Data Sheet and Service Manual for maintenance parts, service procedures and additional specifications.

MOUNTING FLANGE COMPONENTS

| 802 | 8020 Assembly Mount (8023ES) | | | | | | | | |
|-----|------------------------------|------------------------------|--|--|--|--|--|--|--|
| 1 | 34110 Flange, Mount | | | | | | | | |
| 2 | 34162 | Screw, HHC (10-32 x 1/2") | | | | | | | |
| 4 | 34379 | Screw, Flat Head (M6 x 20) | | | | | | | |
| 4 | 34160 | Screw, HH (3/8" x 11/4") | | | | | | | |
| 4 | 126745 | Lockwasher (M6) | | | | | | | |
| 1 | 32145 | Screw, Assembly HH (M8 x 20) | | | | | | | |
| 4 | 30921 | Lockwasher (3/8") | | | | | | | |
| 1 | 30047 | Key (M5 x 5 x 24) | | | | | | | |
| 1 | 6106 | Anti-seize | | | | | | | |
| | | | | | | | | | |

| 802 | 8021 Assembly Mount (8024ES, 8025ES) | | | | | | | | |
|-----|--------------------------------------|------------------------------|--|--|--|--|--|--|--|
| 1 | 34111 Flange, Mount | | | | | | | | |
| 2 | 34162 | Screw, HHC (10-32 x 1/2") | | | | | | | |
| 4 | 34379 | Screw, Flat Head (M6 x 20) | | | | | | | |
| 4 | 32143 | Screw, HH (1/2" x 11/4") | | | | | | | |
| 4 | 126745 | Lockwasher (M6) | | | | | | | |
| 1 | 32145 | Screw, Assembly HH (M8 x 20) | | | | | | | |
| 4 | 126570 | Lockwasher (½") | | | | | | | |
| 1 | 30047 | Key (M5 x 5 x 24) | | | | | | | |
| 1 | 6106 | Anti-seize | | | | | | | |
| | | | | | | | | | |

8022 Assembly Mount (8026ES, 8027ES, 8028ES, 8029ES)

| 1 | 34112 | Flange, Mount |
|---|--------|----------------------------|
| 2 | 34162 | Screw, HHC (10-32 x 1/2") |
| 4 | 34379 | Screw, Flat Head (M6 x 20) |
| 4 | 32143 | Screw, HH (1/2" x 11/4") |
| 4 | 126745 | Lockwasher (M6) |
| 1 | 32145 | Screw, Assy HH (M8 x 20) |
| 4 | 30908 | Lockwasher (1/2") |
| 1 | 30057 | Key (M6 x 6 x 25) |
| 1 | 6106 | Anti-seize |
| | | |

5 FRAME — MOTORIZED PUMP UNITS

| MOTORIZED UNITS | 340BD31 341BD31 347BD31 | 340BD33 341BD33 347BD33 | 340BD51 341BD51 347BD51 | 340BD53 341BD53 347BD53 |
|--|---|---|---|--|
| Shipping Unit Weight | 122 lbs | 98 lbs | 128 lbs | 112 lbs |
| Shipping Unit Dimensions | 26.5" x 16.5" x 16.0" | 26.5" x 16.5" x 16.0" | 26.5" x 16.5" x 16.0" | 26.5" x 16.5" x 16.0" |
| PUMPS | 340, 341, 347 | 340, 341, 347 | 340, 341, 347 | 340, 341, 347 |
| Flow | 4.0 gpm | 4.0 gpm | 4.0 gpm | 4.0 gpm |
| Pressure Range | 100–1100 psi | 100–1100 psi | 100–1800 psi | 100–1800 psi |
| 5 | 8026ES | | • | • |
| | | 8027ES | 8028ES | 8029ES |
| Assembly Mount — REQUIRED | 8022 | 8022 | 8022 | 8022 |
| Horsepower | 3.0 hp | 3.0 hp | 5.0 hp | 5.0 hp |
| Phase | Single | Three | Single | Three |
| RPM | 1725 rpm | 1750 rpm | 1725 rpm | 1750 rpm |
| rame Size | 184TC, TEFC | 182TCZ, TEFC | 184TC, TEFC | 184TC, TEFC |
| lertz | 60 Hz | 60 Hz | 60 Hz | 60 Hz |
| /olts | 230V | 208–230/460V | 208–230V | 208–230/460V |
| Maximum Amps | 13.2 Amps | 8.6-8.2/4.1 Amps | 22.5/23.5 Amps | 13.9–13.4/6.7 Amps |
| ervice Factor | 1.0 | 1.15 | 1.0 | 1.0 |
| Aaximum Ambient Temperature | 104°F | 104° F | 104° F | 104° F |
| haft Diameter (Hollow) | 20 mm | 20 mm | 20 mm | 20 mm |
| hermal Overload | Yes | No | No | No |
| Capacitor Start | Yes | No | Yes | No |
| nsulation | Class F | Class F | Class F | Class F |
| MOTORIZED UNITS | 350BD31 351BD31 357BD31 | 350BD33 351BD33 357BD33 | 350BD51 351BD51 357BD51 | 350BD53 351BD53 357BD53 |
| | | 98 lbs | 128 lbs | 112 lbs |
| hipping Upit Woight | 122 lbc | | | |
| | 122 lbs | | | |
| hipping Unit Dimensions | 26.5" x 16.5" x 16.0" | 26.5" x 16.5" x 16.0" | 26.5" x 16.5" x 16.0" | 26.5" x 16.5" x 16.0" |
| hipping Unit Dimensions | 26.5" x 16.5" x 16.0" 350, 351, 357 | 26.5" x 16.5" x 16.0" 350, 351, 357 | 26.5" x 16.5" x 16.0" 350, 351, 357 | 26.5" x 16.5" x 16.0" 350, 351, 357 |
| hipping Unit Dimensions PUMPS Flow | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm |
| hipping Unit Dimensions PUMPS low | 26.5" x 16.5" x 16.0" 350, 351, 357 | 26.5" x 16.5" x 16.0" 350, 351, 357 | 26.5" x 16.5" x 16.0" 350, 351, 357 | 26.5" x 16.5" x 16.0" 350, 351, 357 |
| Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm |
| hipping Unit Dimensions PUMPS low Pressure Range NOTORS | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi |
| Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES |
| ihipping Unit Dimensions PUMPS How Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three |
| Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp |
| hipping Unit Dimensions PUMPS Now Pressure Range NOTORS Assembly Mount — REQUIRED Norsepower Phase RPM | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three |
| hipping Unit Dimensions PUMPS How Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single 1725 rpm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three 1750 rpm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single 1725 rpm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three 1750 rpm |
| hipping Unit Dimensions PUMPS How Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single 1725 rpm 184TC, TEFC | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single 1725 rpm 184TC, TEFC | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three 1750 rpm 184TC, TEFC |
| hipping Unit Dimensions PUMPS low Pressure Range AOTORS Assembly Mount — REQUIRED Horsepower Phase PM Frame Size Hertz Yolts | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single 1725 rpm 184TC, TEFC 60 HZ | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 HZ | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single 1725 rpm 184TC, TEFC 60 HZ | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three 1750 rpm 184TC, TEFC 60 HZ |
| chipping Unit Dimensions PUMPS Clow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz Volts Maximum Amps | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 230V | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 HZ 208–230/460V | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 208–230V | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three 1750 rpm 184TC, TEFC 60 HZ 208–230/460V |
| Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz /olts Maximum Amps Service Factor | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 230V 13.2 Amps | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 HZ 208–230/460V 8.6-8.2/4.1 Amps | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 208–230V 22.5/23.5 Amps | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three 1750 rpm 184TC, TEFC 60 HZ 208–230/460V 13.9–13.4/6.7 Amps |
| Shipping Unit Weight Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz /olts Maximum Amps Service Factor Maximum Ambient Temperature Shaft Diameter (Hollow) | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 230V 13.2 Amps 1.0 | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 HZ 208–230/460V 8.6-8.2/4.1 Amps 1.15 | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 208–230V 22.5/23.5 Amps 1.0 | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three 1750 rpm 184TC, TEFC 60 HZ 208–230/460V 13.9–13.4/6.7 Amps 1.0 |
| ihipping Unit Dimensions PUMPS How Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz /olts Maximum Amps Fervice Factor Maximum Ambient Temperature ihaft Diameter (Hollow) | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 230V 13.2 Amps 1.0 104° F | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 HZ 208–230/460V 8.6-8.2/4.1 Amps 1.15 104° F | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 208–230V 22.5/23.5 Amps 1.0 104° F | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three 1750 rpm 184TC, TEFC 60 HZ 208–230/460V 13.9–13.4/6.7 Amps 1.0 104° F |
| Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase RPM Frame Size Hertz /olts Maximum Amps Service Factor Maximum Ambient Temperature | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8026ES 8022 3.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 230V 13.2 Amps 1.0 104° F 20 mm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–900 psi 8027ES 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 HZ 208–230/460V 8.6-8.2/4.1 Amps 1.15 104° F 20 mm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8028ES 8022 5.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 208–230V 22.5/23.5 Amps 1.0 104° F 20 mm | 26.5" x 16.5" x 16.0" 350, 351, 357 5.0 gpm 100–1450 psi 8029ES 8022 5.0 hp Three 1750 rpm 184TC, TEFC 60 HZ 208–230/460V 13.9–13.4/6.7 Amps 1.0 104° F 20 mm |

Refer to individual Pump Data Sheet and Service Manual for maintenance parts, service procedures and additional specifications.

PUMP LUBRICATION

Before starting the pump, fill the crankcase per specifications with Cat Pumps High-Pressure Pump Oil PN 6107. For best results, perform an initial oil change after the first 50 hours of operation and every 500 hours thereafter.

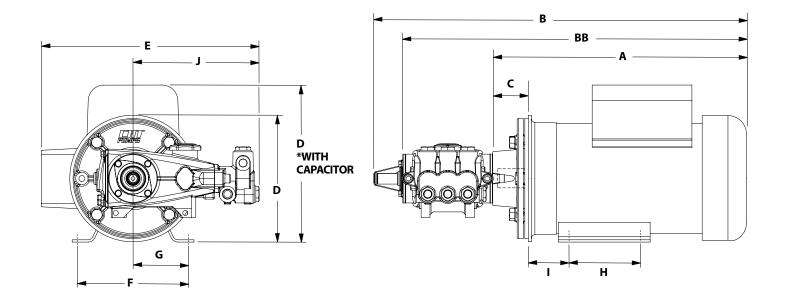
MOTOR LUBRICATION

This is a ball bearing motor. The bearings have been lubricated at the factory. No lubricant needs to be added unless motor has been stored for over a year. Baldor motors are typically pre-greased with Mobil Polyrex™ EM.

Overgreasing bearings can cause premature failure. The motor is equipped with an Alemite fitting. Clean the tip of the fitting and apply grease with a gun. Use 1 to 2 strokes. Any excess may drip out the bottom drain during the first 20 minutes of operation.

Note: Keep grease clean. Lubricate the motor when it is not turning. Remove and replace drain plugs when not turning. Do not mix petroleum grease and silicone grease in motor bearings.

Mobil Polyrex EM is a registered trademark of ExxonMobile Corporation.



| MOTOR | PUMP/SHAFT | Α | | В | | BB | | С | | D | | E | |
|----------------------|----------------|--------|--------|--------|--------|--------|--------|-------|-------|---------|--------|--------|--------|
| 8023ES (1.5 HP 1 PH) | 3PFR (16.5 mm) | 14.62" | 371 mm | 22.12" | 561 mm | — | _ | 2.00" | 50 mm | *8.38" | 213 mm | 12.85" | 326 mm |
| 8024ES (3 HP 1 PH) | 3PFR (16.5 mm) | 15.82" | 402 mm | 23.32" | 592 mm | _ | — | 1.88" | 48 mm | *11.56" | 294 mm | 14.10" | 358 mm |
| 8025ES (3 HP 3 PH) | 3PFR (16.5 mm) | 17.32" | 440 mm | 24.71" | 628 mm | _ | — | 1.88" | 48 mm | 8.9" | 226 mm | 13.48" | 342 mm |
| 8026ES (3 HP 1 PH) | 5PFR (20 mm) | 15.82" | 402 mm | 24.22" | 615 mm | 22.49" | 571 mm | 1.88" | 48 mm | *11.56" | 294 mm | 15.43" | 392 mm |
| 8027ES (3 HP 3 PH) | 5PFR (20 mm) | 15.91" | 404 mm | 24.36" | 618 mm | 22.90" | 581 mm | 1.88" | 48 mm | 8.9" | 226 mm | 14.81" | 376 mm |
| 8028ES (5 HP 1 PH) | 5PFR (20 mm) | 17.32" | 440 mm | 25.72" | 653 mm | 23.99" | 609 mm | 1.88" | 48 mm | *11.56" | 294 mm | 14.81" | 376 mm |
| 8029ES (5 HP 3 PH) | 5PFR (20 mm) | 17.29" | 439 mm | 25.69" | 652 mm | 23.96" | 608 mm | 1.88" | 48 mm | 9.00" | 229 mm | 14.81" | 376 mm |

| MOTOR | PUMP/SHAFT | | F | (| G | | н | I | | J | |
|----------------------|----------------|-------|--------|-------|-------|------|--------|-------|-------|-------|--------|
| 8023ES (1.5 HP 1 PH) | 3PFR (16.5 mm) | 4.88" | 124 mm | 2.44" | 62 mm | 3.0" | 76 mm | 3.06" | 78 mm | 7.6" | 193 mm |
| 8024ES (3 HP 1 PH) | 3PFR (16.5 mm) | 7.50" | 190 mm | 3.75" | 95 mm | 5.5" | 140 mm | 3.62" | 92 mm | 7.6" | 193 mm |
| 8025ES (3 HP 3 PH) | 3PFR (16.5 mm) | 7.50" | 190 mm | 3.75" | 95 mm | 5.5" | 140 mm | 3.62" | 92 mm | 7.6" | 193 mm |
| 8026ES (3 HP 1 PH) | 5PFR (20 mm) | 7.50" | 190 mm | 3.75" | 95 mm | 5.5" | 140 mm | 3.62" | 92 mm | 8.93" | 227 mm |
| 8027ES (3 HP 3 PH) | 5PFR (20 mm) | 7.50" | 190 mm | 3.75" | 95 mm | 5.5" | 140 mm | 3.62" | 92 mm | 8.93" | 227 mm |
| 8028ES (5 HP 1 PH) | 5PFR (20 mm) | 7.50" | 190 mm | 3.75" | 95 mm | 5.5" | 140 mm | 3.62" | 92 mm | 8.93" | 227 mm |
| 8029ES (5 HP 3 PH) | 5PFR (20 mm) | 7.50" | 190 mm | 3.75" | 95 mm | 5.5" | 140 mm | 3.62" | 92 mm | 8.93" | 227 mm |

\triangle CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. Cat Pumps does not assume any liability or responsibility for the operation of a customer's high-pressure system. Read all CAUTIONS and WARNINGS before commencing service or operation of any high-pressure system. The CAUTIONS and WARNINGS are included in each Service Manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.com/dynamic-literature/cautions-and-warnings or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty online at www.catpumps.com/literature/cat-pumps-limited-warranty

CAT PUMPS 1681 94th Lane N.E., Minneapolis, MN 55449-4324 P: (763) 780-5440 F: (763) 780-2958 E: techsupport@catpumps.com www.catpumps.com