## 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<sup>®</sup> 242<sup>®</sup> 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<sup>®</sup> 242<sup>®</sup> 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 <sup>5</sup>/<sub>32</sub>" 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	<b>241BD31</b> <b>247BD31</b> 110 lbs	<b>241BD33</b> <b>247BD33</b> 90 lbs	<b>271BD31</b> <b>277BD31</b> 110 lbs	<b>271BD33</b> <b>277BD33</b> 90 lbs
Shipping Unit Weight Shipping Unit Dimensions	241BD31 247BD31	241BD33 247BD33	271BD31 277BD31	<b>271BD33</b> <b>277BD33</b> 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	<b>271BD31</b> <b>277BD31</b> 110 lbs 26.5" x 16.5" x 16.0" <b>270, 271, 277</b>	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	<b>271BD31</b> <b>277BD31</b> 110 lbs 26.5" x 16.5" x 16.0" <b>270, 271, 277</b> 4.2 gpm	<b>271BD33</b> <b>277BD33</b> 90 lbs 26.5" x 16.5" x 16.0" <b>270, 271, 277</b> 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	<b>271BD31</b> <b>277BD31</b> 110 lbs 26.5" x 16.5" x 16.0" <b>270, 271, 277</b>	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	<b>271BD31</b> <b>277BD31</b> 110 lbs 26.5" x 16.5" x 16.0" <b>270, 271, 277</b> 4.2 gpm	<b>271BD33</b> <b>277BD33</b> 90 lbs 26.5" x 16.5" x 16.0" <b>270, 271, 277</b> 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	<b>271BD31</b> <b>277BD31</b> 110 lbs 26.5" x 16.5" x 16.0" <b>270, 271, 277</b> 4.2 gpm 100–1000 psi	<b>271BD33</b> <b>277BD33</b> 90 lbs 26.5" x 16.5" x 16.0" <b>270, 271, 277</b> 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" <b>350, 351, 357</b>	26.5" x 16.5" x 16.0" <b>350, 351, 357</b>	26.5" x 16.5" x 16.0" <b>350, 351, 357</b>	26.5" x 16.5" x 16.0" <b>350, 351, 357</b>
hipping Unit Dimensions PUMPS Flow	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm
hipping Unit Dimensions PUMPS low	26.5" x 16.5" x 16.0" <b>350, 351, 357</b>	26.5" x 16.5" x 16.0" <b>350, 351, 357</b>	26.5" x 16.5" x 16.0" <b>350, 351, 357</b>	26.5" x 16.5" x 16.0" <b>350, 351, 357</b>
Shipping Unit Dimensions PUMPS Flow Pressure Range MOTORS	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm
hipping Unit Dimensions PUMPS low Pressure Range NOTORS	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 8022	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b>	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b>	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b>	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b>
ihipping Unit Dimensions PUMPS How Pressure Range MOTORS Assembly Mount — REQUIRED Horsepower Phase	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 8022 3.0 hp Single	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 8022 3.0 hp Three	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 8022 5.0 hp Single	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 8022 3.0 hp	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 8022 3.0 hp	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 8022 5.0 hp	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 8022 3.0 hp Single	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 8022 3.0 hp Three	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 8022 5.0 hp Single	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 8022 3.0 hp Single 1725 rpm	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 8022 3.0 hp Three 1750 rpm	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 8022 5.0 hp Single 1725 rpm	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 8022 3.0 hp Single 1725 rpm 184TC, TEFC	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 8022 5.0 hp Single 1725 rpm 184TC, TEFC	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 8022 3.0 hp Single 1725 rpm 184TC, TEFC 60 HZ	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 HZ	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 8022 5.0 hp Single 1725 rpm 184TC, TEFC 60 HZ	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 8022 3.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 230V	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 8022 3.0 hp Three 1750 rpm 182TCZ, TEFC 60 HZ 208–230/460V	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 8022 5.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 208–230V	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 8022 3.0 hp Single 1725 rpm 184TC, TEFC 60 HZ 230V 13.2 Amps	26.5" x 16.5" x 16.0" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8026ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–900 psi <b>8027ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8028ES</b> 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" <b>350, 351, 357</b> 5.0 gpm 100–1450 psi <b>8029ES</b> 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.

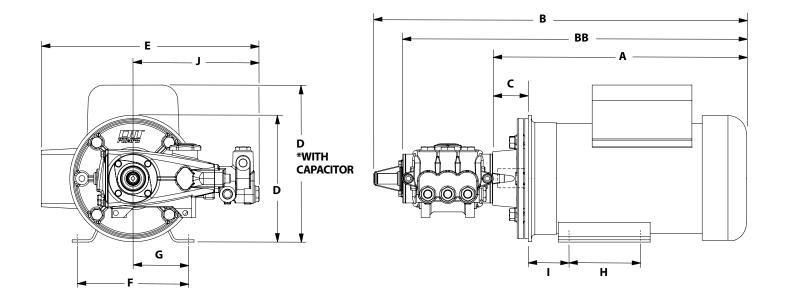
#### **MOTOR LUBRICATION**

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

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